**PISA FOR DEVELOPMENT**

# CAPACITY BUILDING PLAN:
# SENEGAL

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# PISA FOR DEVELOPMENT CAPACITY BUILDING PLAN: SENEGAL

# ACKNOWLEDGEMENT

# TABLE OF CONTENTS

**Tables**

PISA FOR DEVELOPMENT

CAPACITY BUILDING PLAN: SENEGAL

## 1. Introduction and background

PISA for Development is an initiative of the OECD and development partners that aims to identify how the 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 of education among participating countries.

The initial phase of the project in each participating country, including Senegal, is the completion of a Capacity Needs Analysis (CNA). In the case of Senegal, the CNA was completed in 2014. The benchmark for the CNA is the necessary capacity required in the context of the PISA for Development project, which is defined as:

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

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

- enhanced contextual questionnaires and data-collection instruments

- enhanced descriptive power of cognitive assessments in reading, mathematics and science, at appropriate skill levels within the PISA cognitive framework

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

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

- engagement with OECD, development partners and, prospectively, with other developing countries in order to identify peer-to-peer learning opportunities regarding participation in PISA-D and its potential contribution to the UN-led discussions on the post-2015 framework education goal and targets.

The CNA for Senegal revealed that the country and the *Institut National d'Études et d'Action pour le Développement de l'Éducation* (INEADE), which is the National Centre designated for implementing PISA-D in Senegal had a solid foundational capacity for implementing PISA-D. However, the CNA also identified a need for capacity building to enhance the three dimensions of capacity: enabling environment, organisational capacity and individual competencies.

The second phase of the PISA-D project in each participating country, including Senegal, is the completion of a Capacity Building Plan (CBP) based on the CNA. In the case of Senegal, the CBP was prepared during 2014 for finalisation and agreement in early 2015.The CBP for Senegal covers the four-year PISA-D cycle (2015-2018) and includes costed learning activities related to the implementation schedule of the project and the Terms of Reference that have been put in place for the international contractors that are supporting the implementation of the project. PISA-D is technically complex, operationally demanding and statistically advanced and the CBP therefore focuses on PISA components that will allow Senegal 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 (IRT) methodology, rigorous international standards of implementation and increased analysis to provide explanations for the results.

This CBP was developed with the PISA-D National Centre for Senegal, INEADE, and the PISA-D team at OECD. The structure of the CBP document is as follows: the present section provides an introduction and some background to the capacity building components of PISA-D. Next, in Section 2, the Senegal country context is described to capture the expectations with regard to PISA-D implementation but also the aspirations of the country for its education system. Section 3 provides a summary of the capacity needs analysis which was completed in Phase 1. Section 4 presents the Capacity Building Framework that has been used to develop capacity building activities. The capacity building activities, timing and budget over the three years of PISA-D implementation are presented in Section 5. Monitoring and evaluation of the capacity building plan is described in Section 6. Some next steps are set out in the final section.

## 2. Senegal country context

The Government of Senegal has stated its desire to become a middle income economy by 2035. According to the World Bank, Senegal's per capita income growth is just over the rate of population growth. It hopes to increase its annual rate of economic growth to 5% by 2015. Senegal has developed strategies to achieve stable and high rates of economic growth as well as increase the well-being of its people. Education is seen as a primary means of reducing poverty and increasing growth. A key element of Senegal's *Document de stratégie pour la croissance et la réduction de la pauvreté, 2013-2017* is its focus on human capital development and investment in education. In 2011, the rate of household poverty was 36.7% with little signs of reduction. According to UNICEF, the total adult literacy rate was around 49.7%. But investments in education have begun to pay off. The rate of transition from primary to middle school reached 53% in 2011 from 33% in 2006. Senegal is now adding the goal of increasing the quality of education to its existing commitment to increase access to schooling.

In 1981, the *Institut National d'Étude et d'Action pour le Développement de l'Éducation* (INEADE) was created as an independent public agency responsible for educational assessment and research for the Government of Senegal. It reports to the Minister of Education. Its mission is to develop, to stimulate and to coordinate all necessary activities for the development of education in collaboration with other educational research organisations. In tandem with the government's focus on increasing and improving primary education, it conducts a number of assessments to measure performance (Table 1).

**Table 1. National and international assessments conducted by INEADE, Senegal**

| Grade | Age | Assessment | 2008 | 2009 | 2010 | 2011 | 2012 | Frequency | Sample | Domains |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 6 | ELAN | | | | | x | First time | 400 | Wolof National language |
| 2 | 7 | PALME | | | | | x | Annual | 5,400 in grades 2,4 & 6 | Reading and Math. Pre-test and post test |
| | | SNERS | x | | x | | x | Every two years | 7,200 in grades 2 & 4 | French, math and ESVS (science and social life) |
| | | PASEC | | | | | | 2007. Every 6/7 years | 2,300 | French and math |
| 3 | 8 | | | | | | | | | |
| 4 | 9 | PALME | | | | | x | Annual | 5,400 in grades 2,4 & 6 | Reading and Math. Pre-test and post test |
| | | SNERS | x | | x | | x | Every two years | 7,200 in grades 2 & 4 | French, math and ESVS (science and social life) |
| 5 | 10 | | | | | | | | | |
| 6 | 11 | PALME | | | | | x | Annual | 5,400 in grades 2,4 & 6 | Reading and Math. Pre-test and post test |
| | | PASEC | | | | | | 2007. Every 6/7 years | 2,300 | French and math |

Notes: ELAN: *Enseignement de Langue Nationale en Afrique* ; SNERS: *Système Nationale d'Évaluation de Rendement Scolaire* ; PALME: *Partenariat pour l'Amélioration de la Lecture et des Mathématiques à l'Élémentaire* ; PASEC: *Programme d'analyse des systèmes éducatifs de la CONFEMEN*.

Donors have assisted Senegal to achieve its education goals. For example, the World Bank supports the education reform measures undertaken by the Government of Senegal under the Programme for Quality, Equity and Transparency Improvements in Education (PAQUET). Key among these are the shift from inputs to results, decentralisation and greater efficiency and effectiveness in order to improve the learning performance of children in reading and mathematics in the early grades while also increasing access to education of reasonable quality.

PAQUET also supports the development of monitoring and evaluation systems to track results of education reform and learning outcomes of students. It does so by strengthening the capacity of INEADE to be the focal point for managing the evaluation agenda through developing and managing a system of student and education evaluations, disseminating the results for decision makers and actors engaged in education and conducting analyses that would provide evidence for effective choices.

As attention shifts to middle and secondary school education, PISA-D is a good fit to the current set of assessments. INEADE has been named as the National Centre for the implementation of PISA-D and its Director Mame Ibra Ba is the National Project Manager.

PISA-D is a means to measure the yield of education investment at age 15 and to measure competencies demanded by modern economies using a global standard. Senegal has participated in 2014 in a four country (Gambia, Guinea-Bissau, Nigeria and Senegal) study on employability based on the competence of children in the penultimate year of school *Reseau Ouest et Centre Africain de Recherche en Education* (ROCARE), *Competence des eleves de l'avant dernière année d'études des colleges* (fourth in

Senegal). There is continued interest in the predictive value of PISA-D for human capital development in terms of higher education, science and technology and the labour market.

## 3. Summary of the Capacity Needs Analysis

The capacity needs of Senegal were analysed in terms of the five key activities that are critical for the successful implementation of PISA-D and for its outputs. These outputs are linked to the indicators for monitoring. The capacity needs for Senegal are listed under four of the five activities. The fifth - Engagement with the OECD, development partners and with other participating countries in order to identify peer-to peer learning opportunities arising from PISA-D – is discussed in relation to the previous four.

### 3.1. Capacity for enhancing contextual questionnaires and data collection instruments

INEADE has created a multidisciplinary team of ten people (see Annex C of the Capacity Needs Analysis) who will have to familiarise themselves with PISA design and frameworks to interpret the results of analysis, particularly where indices are used. PISA-D will require a more complex set of protocols for conflict of interest, confidentiality, data access and tests of reliability and these will have to be translated from French to Wolof and Arabic. Senegal will implement PISA-D in three languages (French, Wolof and Arabic) therefore translators in Wolof and Arabic will have to be trained on the PISA frameworks and work on training and procedure manuals as well as the instruments.

PISA-D sampling will be more complex for Senegal because of the sample of in and out of school children. Furthermore, sampling frames will have to be provided to the international contractors for both of these. Sampling decisions will have to be made regarding stratification, for example, to be able to analyse at the level of *Inspection d'académie* (IA) which is the administrative unit for policy and practice since decentralisation. The creation of sampling frames will require close collaboration with the Ministry of Education for the frame of children in public, private and community schools and with the *Agence Nationale de la Statistique et de la Démographie* (ANSD) for children out of school. Coders in the three languages should be identified early for training in PISA frameworks, coding and inter-rater reliability procedures. Training for test administrators and coders has to be delivered based on PISA requirements to ensure fidelity of coders in the three languages with manuals and procedures.

### 3.2. Capacity for enhancing cognitive instruments

The PISA-D team will need a deep understanding of the PISA frameworks and its use in the development of instruments and the interpretation of results in order to explain it to the Ministry, stakeholders and the public. They will also require training on Item Response Theory (IRT), use of multiple booklets, cognitive scales, levels based on achieved tasks, reading components, indices, and plausible values in relation to PISA. INEADE would need a good communication plan to explain the complexities of PISA and the country's ranking and standing in the domains as well as the scales and levels of performance to a variety of audiences. They will also need to conduct multivariate analysis with a range of explanatory variables to support policy decision-making choices.

### 3.3. Approach for incorporating out-of-school 15-year-olds in the assessment

INEADE will require guidance from the international contractor to prepare the remit based on PISA requirements for ANSD to prepare a sample of out-of-school children and the requirements for the Ministry of Education to prepare the frame for the sample children in school. The development of manuals and procedures for out of school children will be a new venture but the experience with manuals for children in school will be at least partially transferable. INEADE will create committees to work with partners (protocol with ANSD) and stakeholders regarding PISA-D. The communication plan will include

customised information and documentation for targeted audiences in order to inform them about the results from both samples in PISA-D.

### *3.4. Country capacity in assessment, analysis and use of results for monitoring and improvement*

PISA-D requires a multiyear (rather than annual) budget based on at least a three year cycle of international and national expenditures which dovetails with international and national activities. The budget should cover all core activities from pre-assessment activities to dissemination and secondary research. A budget for research and development has to be included as a core activity. Since the budget is multisource, proposals have to be prepared for the annual national budget process as well as to the donor community according to their funding cycle. Some costs are specific to Senegal such as purchase of a server for the secure storage of data. International meeting attendance would require additional costs. INEADE would prefer to send two people to the PISA-D International Advisory Group. It would take advantage of the invitation to send up to four PISA-D team staff to peer to peer training workshops to gain critical mass of expertise.

The management of the workflow of PISA will require coordination and priority setting since PISA-D will be the primary responsibility for two staff and the others on the team will work part time, but all of them will have to be trained in PISA frameworks and requirements. The relationship with the international contractor has to be managed and deadlines for important products have to be met. Since PISA-D will be implemented in three languages, translation must be carefully organised for protocols, manuals and instruments. PISA-D requirements such as the translation plan, double translation and the process for comparability across languages based on knowledge of PISA frameworks will have to be met.

To prepare for the launch of PISA-D, INEADE will establish an advisory committee which will meet regularly for sustained support and for the creation of channels of communication to a wider network including the Ministry of Education, stakeholders, schools, teachers and teacher initial and continuous training. PISA-D engagement events should include *Inspection d'académie* (IAs, regions), *Inspection d'éducation et de la formation* (IEFs, districts), schools, teachers and parent committees in schools. In order to prepare schools and teachers for PISA-D participation, materials about PISA, sample questions and the type of feedback they will receive, could be provided to schools.

Competency upgrades in IRT, item and instrument design, analysis and interpretation will be necessary to prepare a narrative report with accurate interpretation of data and explanations of performance. Training in the use of analysis techniques, data and results communication and dissemination will be essential for the preparation of such a national report. To benefit fully from PISA-D, INEADE would have to develop a dissemination and media plan for publication of the results. In addition to the national report, targeted products for various government departments would be important for improving future performance (e.g. reading component results for the Department of Literacy; school administration and classroom climate for teacher training and in-service training). INEADE should engage in in-depth research itself, work with a network of external researchers and support the use of PISA and PISA-D data by other stakeholders. This would enable INEADE to contribute substantively to national and regional discussions and the PISA-D international conference.

PISA-D and the national assessment results should be actively linked to the policy cycle of the government of Senegal and the administration of the school year (school starts in mid-October) to ensure results are used. Systematic provision of ministerial briefs should be regularised. Timeliness rather than a reactive or responsive stance would be more effective to meet the needs of stakeholders.

**4. Methodology**

The initial collaborative work with INEADE on capacity building took place between 1 September and 14 September 2014 facilitated by OECD's consultant, Satya Brink. First, using the web tool (www.polymetrika.org/PISAD/Home/DataEntry), the Capacity Needs Analysis was reviewed. During the review of the CNA requirements that were not met and requirements that were met but where existing experience had to be applied to new or different requirements demanded by PISA-D were identified. 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 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.

The methodology used to develop the Capacity Building Plan for Senegal resulted in two types of investments being identified:

- first, investments related specifically to PISA-D implementation

- second, investments related to increased INEADE capacity for managing large-scale assessments more generally.

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. Finally, the activities that were planned by year were developed under each of the eight capacity building elements with their related costs.

**5. Capacity Building Plan for Senegal**

The Capacity Building Plan for Senegal is presented below under the two types of investments that have been identified above.

*5.1. Capacity building for PISA-D implementation*

*5.1.1. Capacity building element: Stakeholder engagement*

The ultimate goal for this capacity building element is:

- to work with stakeholders to introduce them to the value of PISA-D, to understand their needs for PISA evidence and to provide them with appropriate results for application.

Assessment of capacity building needs:

- communication with stakeholders – **established**

- breadth of stakeholder engagement – **emerging**

- stakeholder use of ILSA – **emerging**

- breadth of stakeholder – **emerging**.

The PISA-D NPM and Director of INEADE will provide updates as well as links to government priorities at the weekly *Comité de concertation et coordination*, Ministry of Education attended by all divisions of the Ministry of Education. For example, following such a briefing, the Minister presented PISA-D in parliament ahead of the launch. The agenda of the advisory committee of government departments will have an item on PISA-D updates and later on the use of PISA-D results for decision making by the various ministries, departments in ministries.

An Advisory Committee will be set up by INEADE, in association with the Ministry of Education with key representatives from the Ministry and allied agencies in order to provide updates, preparatory information and results. The advisory committee will include representatives from other sectors (health, entrepreneurship, commerce, etc.) which have an interest in non-academic outcomes as well.

A stakeholder committee will be set up so that discussion on PISA-D can be held regularly with multiple stakeholders and donors. Stakeholders will be updated on the progress of PISA-D and consulted regarding their needs for evidence and research questions.

The communication plan will include meetings with IAs and IEFs as well as other stakeholders, such as schools and teachers, as needed.

**2015 goal: Launch of PISA and orientation (Completed)**

| | |
|---|---|
| Activity | Launch PISA<br>(1) Minister's note to government departments IAs and IEF<br>(2) PISA Launch event with OECD January 2015. |
| Deliverables | General information about value of PISA. Preparatory information on PISA. |
| Reporting requirements | Minister's note and launch invitation sent to individuals IAs and IEF personally by INEADE. |
| Country responsibilities | Organisation of launch event. List of participants on committees, invitation, preparation of the agenda and information materials and debrief of the event and press coverage. |
| Administrative details | Choose among three bids where applicable for meeting room, simultaneous translation, etc. |
| Relevant documentation | Preparation of documentation to inform people about PISA (see below). |
| International costs | OECD representatives will pay their own costs. |
| In-country costs | PISA Launch event with OECD in January for about 100 people: USD 16 000. |
| | PISA presentations followed by launch. Simultaneous translation USD 2 000. |
| | Total USD 18 000. |
| Expected additional funding | Under negotiation with funders. |

Total cost 2015 = USD 18 000 (Completed – <u>not included in costs</u>)

**Year 1 (2015) goal: Updates on progress of PISA**

| | |
|---|---|
| Activity | Stakeholder Committees: one annual meeting of advisory committee, one annual meeting of partners and stakeholders. |
| Deliverables | Documentation on plans and progress of PISA. Report of the international meetings. |
| Country responsibilities | List of participants on committees, invitation, organisation of committee meetings, preparation of the agenda and materials and report of committee meetings. |
| Relevant documentation | Update information on progress of PISA-D and report of meetings. |
| In-country costs | Advisory committee: One meeting USD 4 500. |
| | Donor/stakeholder Committee: One meeting USD 770. |
| | Total: USD 5 270. |
| Expected additional funding | Under negotiation with donors. |

Total cost Year 1 (2015) = USD 5 270

**Year 2 (2016) goal: Updates on progress of PISA and input**

| | |
|---|---|
| Activity | Stakeholder Committees: one annual meeting of advisory committee, one annual meeting of partners and stakeholders. |
| Deliverables | Documentation on progress of PISA. Report of the international meetings and capacity building sessions. Input stakeholder priorities. |
| Country responsibilities | List of participants on committees, invitation, organisation of committee meetings, preparation of the agenda and materials and report of committee meetings. |
| Relevant documentation | Update information on progress of PISA-D and report of meetings. |
| In-country costs | Advisory committee: One meeting USD 4 500. |
| | Donor/stakeholder committee: One meeting USD 770. |
| | Total: USD 5 270. |
| Expected additional funding | Under negotiation with donors. |

Total cost Year 2 (2016) = USD 5 270

**Years 3 (2017) goal: Updates on progress of PISA data collection**

| | |
|---|---|
| Activity | Stakeholder Committees: one annual meeting of advisory committee, one annual meeting of partners and stakeholders. |
| Deliverables | Progress on field trial and plans main collection. Priorities for reporting results in national report. Report of international meetings and training sessions. |
| Country responsibilities | List of participants, invitation, organisation of the meetings, preparation of the agenda and materials and report of meetings. |
| Relevant documentation | Update information on progress of PISA-D and report of meetings. |
| In-country costs | Advisory committee USD 4 500. |
| | Donor/stakeholder meeting USD 770. |
| | Total: USD 5 270 |
| Expected additional funding | Under negotiation with donors. |

Total cost Year 3 (2017) = USD 5 270

**Year 4 (2018) goal: Dissemination of PISA results for application**

| | |
|---|---|
| Activity | Stakeholder Committees: one annual meeting of advisory committee, one annual meeting of partners and stakeholders. |
| Deliverables | Plans for national report, targeted products, media briefings and coverage. |
| Country responsibilities | List of participants, invitation, organisation of the meetings, preparation of the agenda and materials and report of meetings. |
| Relevant documentation | Update information on progress of PISA-D, results and products and report of meetings. |
| In-country costs | Advisory committee: USD 4 500. |
| | Donor/stakeholder meeting: USD 770. |
| | Total: USD 5 270. |
| Expected additional funding | Under negotiation with donors. |

Total cost Year 4 (2018) = USD 5 270

<u>**Summary**</u>**: Total capacity-building element cost = USD 21 080**

*5.1.2. Capacity building element: Upgrading existing and new quality procedures for PISA-D implementation*

The ultimate goal for this capacity building element:

- PISA-D will be successfully implemented meeting all standards and these standards will also be applied to national assessments.

Assessment of capacity building needs:

*National Centre*

- relevance of NC expertise – **advanced**

- transparent policy – **emerging**

- funding for NPM for international meetings – **established**

- national co-ordinator for ILSA – **established**

- effectiveness of human resources for ILSA  – **advanced**

- scheduling priority given to ILSA – **established**

- administrative support – **emerging**

- National Centre co-ordination – **established**.

*Security*

- accountability for security – **established**

- secure storage –  **established**

- adherence to security protocols –     **established**

- secure space for coding operations – **established**.

*Logistics (human and material resources)*

- commitment of data collection staff – **emerging**

- availability of training facilities – **advanced**

- avoiding of conflict of interest – **emerging**

- adequacy of transport for data collectors –   **emerging**

- effectiveness of training for data collectors  – **advanced**

- responsiveness of sample design for data collection –    **established**

- availability of document formatting and print specifications –   **established**

- quality of document proof reading – **established**

- availability and quality of publishing resources –    **advanced**

- fidelity of administration in local contexts – **established**

- quality of training for data collection – **established**

- NPMs and NCs skill in PISA ontology – **established**

- translator knowledge of PISA framework – **latent**

- response coding expertise – **established**

- appropriateness of instrument translation and adaptation to local contexts – **advanced**

- fidelity of instrument translation and adaptation to local contexts – **established**

- results from ILSA – **established**.

*National Centre and strategic vision*: The strategic plan under development and the multi-year budget will include the integration of PISA among planned evaluations for Senegal with the required staff time. The current strategic plan 2014-16 will include PISA as part of the system of evaluations for Senegal and stabilise the funding for PISA-D. The Ministry will issue a formal note announcing the participation of Senegal in PISA-D. The formal note issued by the Ministry will be sent by INEADE to IAs and IEFs, to the person responsible with an invitation to the launch of PISA-D. The formal note issued by the Ministry will be posted on the website of the Ministry and INEADE and therefore will be public. Press coverage will also inform the public.

The PISA-D project implementation plan and the national PISA-D budget will include the time and budget for international meetings (preferably for the NPM and a second person). Four people selected according to the desirable profile will attend the training workshops but more staff will attend the two sessions hosted by Senegal. The PISA-D NPM will be aided by the core PISA-D group and a larger group that will work on the PISA-D project. PISA-D will be primary full-time project for two members of the team while the others will work part time on it. The staff of INEADE will be increased at times requiring specialists or persons responsible depending on the task. For example, the specialised staff of The *Agence Nationale de la Statistique et de la Démographie* (ANSD). The Director NPM will manage the time and priority of the PISA-D team. The PISA-D team has a focal point (Cheikhena Lam) who will manage all PISA-D correspondence and email. The PISA-D team meets every Friday morning with the NPM and when necessary according to urgency. Outlook will be used by the PISA-D team for scheduling PISA related activities.

*Security*: A security policy with regard to software and antivirus protection will be developed for the PISA-D team including disciplinary penalties for breaches of security. The secure storage room will be renovated and PISA-D secure documents will be stored in the secure space with managed access. Staff who work on PISA-D will have training on security procedures and the project managers will be responsible for managing access to instruments and data. The NPM will invoke or revoke access to secure materials for PISA-D. Security processes will be improved for coding and the space will be secured during coding.

*Logistics (human and material resources)*: There is a database of data collectors who have experience with other assessments which have a larger sample than PISA-D. Those selected to work on PISA-D will have specific training. For training larger groups than 40 (for example, 150 data collectors) space will be rented and the cost will be included in the PISA-D national budget. PISA-D data collectors will sign a confidentiality protocol where their current and former workplaces will be noted and they will be assigned to other sites. Existing policy for reimbursement will be used for training time for data collectors. For improved security, data collectors will collect the correct number of PISA-D instruments from INEADE and transport them to the site in hired vehicles. The data collectors will sign a protocol of confidentiality. Data collectors will be trained for PISA-D at INEADE in groups, using training methods

such as simulation and role playing. The best data collectors will be chosen from the trained groups by a test. Schools start in October and classes stabilise in mid-November so data collection would be condensed into the last week of November. However, data from over 7 000 students for SNERS was collected in one week. The system will be improved so that telephone contact will be made to replace missing children randomly from the school list of 15-year-olds so the data for non-response will be collected the same day according to PISA requirements.

INEADE will conform with the international specifications for printing instruments in French, Wolof and Arabic. For PISA-D instruments, experts in assessment in Arabic, Wolof and French will be used to ensure that there are no errors. The printing of the PISA-D instruments will be done under contract with a commercial press or the Ministry of Education Press where all the volume of documents can be printed in the time specified and under conditions of security. The costs for printing will be included in the PISA-D national budget. The committee members for translation in the three languages will have training in PISA frameworks and data collection procedures. The data collectors will be trained using PISA procedures and feedback will be provided after the pilot. A process of self-learning will be used by the PISA-D team to familiarise themselves with the PISA frameworks and the NPM manual. Translators will be trained in PISA frameworks and procedures. The coders will be trained in PISA procedures for inter-rater reliability. Experienced translators are available for French and Wolof. The translators in Arabic will be selected from those with credentials and they will be trained to work with assessments and PISA in particular. Translators will be provided training for working with PISA instruments. A narrative report will be developed for PISA-D using descriptive, bivariate and multivariate analyses.

**Year 1 (2015) goal: To prepare for PISA implementation**

| | |
|---|---|
| Activity 1 | International peer to peer learning: 1 session in September on PISA conceptual framework, cognitive and contextual questionnaires, etc. (Location to be determined). |
| Deliverables | Documents and manuals. |
| Country responsibilities | Preparation and reading before the session and training the team on return to INEADE. Profile of four persons attending: NPM, psychometrician, questionnaire designers and curricula specialists in the domains. |
| Relevant documentation | Duplication of internationally produced training materials for training in Dakar. French translation if necessary. |
| International costs | Costs for the peer to peer sessions will be borne by the OECD. |
| In-country costs | One peer-to-peer session: Travel (to host countries), hotel and costs for one 5-day session. Travel based on Colombia: USD 2 500 per person. 4 persons USD 10 000. |
| | Hotel and per diem: USD 300 per person per day, 4 persons for 5 days USD 6 000. |
| | Total: USD 16 000. |
| Expected additional funding | Under negotiation with donors. |
| Activity 2 | International meeting of International Advisory Committee, March. |
| Deliverables | Documents and input. |
| Reporting requirements | The NPM and a PISA-D team member will inform the Ministry before travel. |
| Country responsibilities | Prepare for meetings and follow up. |
| International costs | Costs will be borne by the OECD. |
| In-country costs | Two participants for Advisory Committee meeting: Ticket per person USD 2 500, for two persons: USD 5 000. |
| | Hotel per night USD 200: 3 nights USD 600; 2 people USD 1 200. |
| | Per diem USD 100. 3 days USD 300; 2 people USD 600. |
| | Total USD 6 800 for one meeting for two people. |
| Expected additional funding | Under negotiation with donors. |
| Activity 3 | Development of multiyear budget and inclusion of PISA in the assessment system starting with Main PISA in 2021. |
| Deliverables | National multiyear budget and stabilised funding for inclusion of PISA in the assessment system. |
| Reporting requirements | Approval of national multi-year budget by Ministry of Education and donors and inclusion of PISA in assessment system. |
| Country responsibilities | National multi-year budget and stabilised funding for inclusion of PISA in the assessment system. |
| In-country costs | USD 0. |

Total cost Year 1 (2015) = USD 22 800

**Year 2 (2016) goal: To successfully prepare for PISA implementation**

| | |
|---|---|
| Activity 1 | Three international peer-to-peer learning sessions: (1) Translation, adaptation and verification January; (2) Sampling and field test preparation April; (3) Field test survey data July. Locations to be determined. |
| Deliverables | Training Documents. |
| Reporting requirements | The NPM and a PISA-D team member will inform the Ministry before travel. |
| Country responsibilities | Preparation and reading before the session and training the team on return to INEADE. Profile of 4 people attending each: NPM, sampling experts, translators, field operation managers, school contacts, human resources, trainers, household data collection experts. Training in Dakar for other PISA-D team members upon return. |
| Relevant documentation | Duplication of internationally produced training materials for training in Dakar. French translation if necessary. |
| International costs | Costs for the peer to peer sessions will be borne by the OECD. |
| In-country costs | Three peer-to-peer sessions: locations to be determined but possibly Asia & South America. |
| | Session 1: Travel (to host country South America), hotel and costs for 6 days. Travel based on Colombia: USD 2 500 per person; 4 people USD 10 000. Hotel and per diem: USD 300 per person per day; 4 people USD 1 200 per day; 6 days USD 7 200. Total: USD 17 200. |
| | Session 2: Travel to Zambia USD 2 000 per person; USD 8 000 for 4 people. Hotel and per diem USD 300; for 4 people for 5 days USD 6 000. Total: USD 14 000. |
| | Session 3: Travel to Pnom Penh. Ticket: USD 2 500 per person. 4 people USD 10 000. Hotel and per diem: USD 300 per person per day; 4 people USD 1 200 per day; 6 days USD 7 200. Total: USD 17 200. |
| | Grand total USD 48 400. |
| Expected additional funding | Under negotiation with donors. |
| Activity 2 | International meetings of International Advisory Committee in March. Location to be determined. |
| Deliverables | Documents and input. |
| Reporting requirements | The NPM and a PISA-D team member will inform the Ministry before travel. |
| Country responsibilities | Prepare for meeting and follow up. |
| International costs | Costs will be borne by the OECD. |
| In-country costs | Two participants for one Advisory Committee meetings in Pnom Penh. Ticket USD 2 500; 2 people USD 5 000. |
| | Hotel per night USD 200; 3 nights USD 600; 2 people USD 1 200. |
| | Per diem USD 100. 3 days USD 300; 2 people USD 600. |
| | Total: USD 6 800. |
| Expected additional funding | Under negotiation with donors. |

Total cost Year 2 (2016) = USD 55 200

**Year 3 (2017) goal: To prepare for PISA data collection and plan the national report**

| | |
|---|---|
| Activity 1 | Two International peer to peer learning: (1) Analysis of field trial results in May in Saly, Senegal (2) Main data collection operations in July. Location to be decided. |
| Reporting requirements | The NPM and a PISA-D team member will inform the Ministry before travel. |
| Country responsibilities | Preparation and reading before the session and training the team on return to INEADE. Profile of 4 persons attending session abroad: NPM, coding, data management, security, field operation managers. In Saly, the PISA team of 10 people. |
| Relevant documentation | Duplication of internationally produced training materials for training in Dakar. French translation if necessary. |
| International costs | Costs for the peer to peer sessions will be borne by the OECD. |
| In-country costs | Two peer-to-peer sessions: |
| | Travel to African country USD 2 000 per person; USD 8 000 for 4 people. |
| | Hotel and per diem USD 300 for 4 people for 5 days USD 6 000. |
| | Total: USD 14 000. |
| | Cost per person for meeting hosted by Senegal in Saly: Transport USD 16; for 10 people USD 160. |
| | Hotel, per diem etc. USD 180; for 5 days USD 900; for 10 people USD 9 000. |
| | Total USD 9 160. |
| | Grand total USD 23 160. |
| Expected additional funding | Under negotiation with donors. |
| Activity 2 | International meetings of International Advisory Committee in March. Location to be decided. |
| Deliverables | Documents and input. |
| Reporting requirements | The NPM and a PISA-D team member will inform the Ministry before travel and debrief on the Dakar Peer to peer meeting. |
| Country responsibilities | Prepare for meetings and follow up. |
| International costs | Costs borne by the OECD. |
| In-country costs | Two participants for Advisory Committee meeting in South America. Travel based on Colombia: USD 2 500 per person; 2 people USD 5 000. |
| | Hotel and per diem: USD 300 per person per day; 2 persons USD 600 per day; 3 days USD 1 800. |
| | Total: USD 6 800. |
| Expected additional funding | Under negotiation with donors. |

Total cost Year 3 (2017) = USD 29 960

**Year 4 2018 Goals: To prepare PISA results and disseminate them for action**

| | |
|---|---|
| Activity 1 | Two International peer to peer learning: (1) Analysis and research in March in Saly, Senegal (2) Preparation of tables, figures and the national report and dissemination (10 days) in July. Location to be decided. |
| Deliverables | Report models and table shells. |
| Reporting requirements | The NPM and a PISA-D team member will inform the Ministry before travel. |
| Country responsibilities | Preparation and reading before the session and training the team on return to INEADE. In Saly, the PISA team of 10 people. Profile of 4 persons attending session abroad: NPM, researchers, communication specialists, policy specialists. |
| Relevant documentation | Duplication of internationally produced training materials for training in Dakar. French translation if necessary since Senegal report will be produced in French. |
| International costs | Costs for the peer to peer sessions will be borne by the OECD. |
| In-country costs | Two peer-to-peer sessions: |
| | Cost per person for meeting hosted by Senegal in Saly: Transport USD 16 per person; 10 people USD 160. |
| | Hotel, per diem etc. USD 180; 5 days USD 900; 10 people USD 9 000. |
| | Total USD 9 160. |
| | Travel to African country USD 2 000 per person; 4 people USD 8 000. |
| | Hotel and per diem USD 300; 4 people for 10 days USD 12 000. |
| | Total: USD 20 000. |
| | Grand total for two sessions: USD 29 160. |
| Expected additional funding | Under negotiation with donors. |
| Activity 2 | International meetings of International Advisory Committee in March in Dakar. |
| Deliverables | Documents and input. |
| Reporting requirements | Prepare for the Dakar meeting and brief the Minister for his participation. |
| Country responsibilities | Prepare for meeting and follow up. |
| International costs | Costs borne by the OECD. |
| In-country costs | Hosting meeting in Dakar. Hospitality and cultural event USD 5000. |
| Expected additional funding | Under negotiation with donors. |
| Activity 3 | PISA-D country participation in Main PISA PGB to report on experience and challenges in October. Location to be decided. |
| Deliverables | Preparation of documents, including monitoring and evaluation report. |
| Reporting requirements | The NPM and a PISA-D team member will inform the Ministry before travel. |
| Country responsibilities | Preparation of documents, including monitoring and evaluation plans. |

| Relevant documentation | Monitoring and evaluation report. |
|---|---|
| International costs | Meeting costs will be borne by the OECD. |
| In-country costs | Two participants for Advisory Committee meeting (Location to be decided). Travel based on Colombia: USD 2 500 per person; 2 people USD 5 000. |
| | Hotel and per diem: USD 300 per person per day; 2 people USD 600 per day; 3 days USD 1 800. |
| | Total: USD 6 800. |
| Expected additional funding | Under negotiation with donors. |
| Activity 4 | Participation in International PISA-D conference in December in Paris. |
| Deliverables | Preparation of documentation based on Senegal experience. |
| Reporting requirements | The NPM and a PISA-D team member will inform the Ministry before travel. |
| Country responsibilities | Preparation of documentation based on Senegal experience. |
| Relevant documentation | Monitoring and evaluation report. Input for future round of PISA-D. |
| International costs | Costs borne by the OECD. |
| In-country costs | Two participants for PISA PGB meeting to provide input on PISA-D. Ticket per person USD 2 500; 2 people USD 5 000. |
| | Hotel per night USD 200; 3 nights USD 600; 2 people USD 1 200. |
| | Per diem USD 100; 3 days USD 300; 2 people USD 600. |
| | Total USD 6 800. |
| | Two participants for International conference in Paris. Ticket per person USD 1 000; 2 people USD 2 000. |
| | Hotel per night USD 200; 3 nights USD 600; 2 people USD 1 200. |
| | Per diem USD 100; 3 days USD 300; 2 people USD 600. |
| | Total USD 3 800. |
| | Grand total for two sessions: USD 10 600. |
| Expected additional funding | Under negotiation with donors. |

Total cost Year 4: USD 51 560

**<u>Summary</u>: Total capacity-building element cost = USD 159 520**

*5.1.3 Area for development: School, student and out-of-school youth sampling*

The ultimate goal for this area of development:

- to develop a reliable school and student frame for sampling and to work with *Agence National de Statistique et Demographie* (ASND) to prepare a sample of out of school children based on the Census 2013, both preferably stratified by IAs to be policy relevant.

Assessment of capacity building elements:

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

- quality of school sample frame – **advanced**

- location of 15-year-olds – **established**

- 15-year-old census – **established**

- household survey data collection –  **established**.

The random choice of schools and the random choice of 15-year-olds in schools will be designed to meet PISA standards. Develop a sample frame for children aged 15 in public, private and community schools from the data base at DPRE, which will be the first time a frame will be developed by age rather than grade. The ASND conducted the sampling for Jangandoo, out of school children aged 6 to 18 years in households. Using the 2013 Census, which has data on children 15-years-old in private and collective households as well as the "floating population" to develop a sampling frame for out of school children. The school and out of school sample together should be a sample of the 15-year-old cohort. The national budget of PISA-D will include the costs of sampling the households with 15-year-olds. When details are available a plan will be made with ANSD for data collection in households working with the International contractor for Strand C.

**Year 1 (2015) goal: To develop the school sample frame and a sample for out of school children to meet PISA-D specifications**

| | |
|---|---|
| Activity | Based on the directions provided by the International contractor, to work with the Ministry of Education system to develop a sample frame of 15-year-olds in public, private and community schools. (Note Daras are not included). Preferably stratified by the 16 IAs. Based on the result of the Montreal technical meeting and the international contractor to work with *Agence National de Statistique et Demographie* (ANSD) to sample 15-year-old children out of school in households based on the 2013 census. |
| Deliverables | The sample frame design and how it meets the specifications and the need of Senegal to report to IAs. |
| Country responsibilities | Once specifications for the two samples are provided by the international contractor, to work with the Ministry of Education and the ANSD to develop satisfactory frames for sampling by the international contractor. |
| Relevant documentation | Documentation on sampling out-of-school 15-year-olds from the Montreal technical meeting. |
| In-country costs | USD 5 000 Cost for sampling out of school children by the ANSD. |
| Expected additional funding | Under negotiation with donors and ANSD. |

Total cost Year 1 (2015) = USD 5 000

**Year 2 (2016) goal: To complete sampling and to develop appropriate population weights**

| | |
|---|---|
| Activity | To complete sampling and to develop population weights working with the International contractor. |
| Deliverables | Population weights for the whole cohort of 15-year-olds, in school and out of school. |
| Reporting requirements | To confer with international contractors and to meet international standards. |
| Country responsibilities | To work with the International Contractor to develop appropriate population weights working with the ANSD. To determine if analysis can be reported by IAs if sample was stratified using them. |
| In-country costs | Included in agreement with ANSD and costs shown above. |
| Expected additional funding | Under negotiation with donors and ANSD. |

Total cost Year 2 (2016) = USD 0

**Year 3 (2017) goal: To meet international standards of response and population weights**

| | |
|---|---|
| Activity | To adjust population weights according to exclusions and non-response working with ANSD and the International contractor. |
| Deliverables | Population weights adjusted for exclusions and non-response for the whole cohort of 15-year-olds, in school and out of school. Tests for bias. |
| Reporting requirements | To confer with international contractors and to meet international standards. |
| Country responsibilities | To work with the International Contractor to adjust population weights working with the ANSD. To determine if analysis can be reported by IAs if sample was stratified using them. To test for bias. |
| In-country costs | Included in agreement with ANSD and costs shown above. |
| Expected additional funding | Under negotiation with donors and ANSD. |

Total cost Year 3 (2017) = USD 0

**Year 4 (2018) goal: To meet international standards for analysis and reporting**

| Activity | To work with ANSD on the analysis and chapter on out of school children. |
|---|---|
| Deliverables | Population weights adjusted for exclusions and non-response for the whole cohort of 15-year-olds, in school and out of school and to apply it to analysis. |
| Reporting requirements | To confer with international contractors and to meet international standards. |
| Country responsibilities | To work with the International Contractor and to adjust population weights working with the ANSD, especially for out of school children for the national report. To determine if analysis can be reported by IAs if sample was stratified using the national report. |
| Administrative details | Included in agreement with ANSD and costs shown above. |
| Relevant documentation | Under negotiation with donors. |
| In-country costs | USD 0. |
| Expected additional funding | Under negotiation with donors and ANSD. |

Total cost Year 4 (2018) = USD 0

**Summary**: **Total capacity-building element cost = USD 5 000**

*5.1.4. Area for development: Product development, communication and dissemination*

The ultimate goal for this area of development:

- to develop products for PISA-D, for preparation, implementation and dissemination of results which are general as well as targeted. To develop and implement a research plan and a communication and dissemination plan.

Assessment of capacity building needs:

- adequacy of funding – **established**

- ILSA research and development funding – **latent**

- bureaucratic efficiency – **advanced**

- uses of ILSA – **emerging**

- engagement of data collection agency – **advanced**

- feedback from ILSA – **latent**

- media coverage of ILSA – **latent**

- availability of ILSA training – **established**

- providing teachers opportunities to learn about ILSA –  **emerging**

- correct sequencing of administration protocols – **advanced**

- fidelity to response coding – **established**.

A research plan will be developed for PISA-D. The PISA research plan will have a budget and priority research questions. PISA-D results will be used for indicators, for example, for the Annual report on education by the ministry. PISA-D research results will also target decisions of curricula, teacher training, etc. The PISA-D national budget will include funding for secondary research. The communication plan for four years and implementation will be included in budget. The communication plan will include suggested processes to be undertaken by other actors of education. A ministerial note will be issued to announce participation in PISA-D and the Minister also announced it in parliament.

Customised products with PISA-D evidence for application by policy makers and practitioners are planned. The PISA-D dissemination plan will include the production of customised projects with PISA-D evidence for special audiences such as departments in the Ministry, schools and teacher training. PISA-D products of orientation and research results will be developed for IAs, IEF, and schools. The communication plan for PISA-D will include the products and the process of communication with IAs, IEFs and schools as well as with community organisations and non-government organisations. The experience from PISA-D will be applied to SNERS and PALME for school oriented products.

Plans for communication with the media will be included in the communication plan for preparing for PISA-D and for reporting on first results and more detailed evidence from further research. Preparatory documents will be prepared about PISA-D for IAs and IEFs. The PISA-D committees (advisory and stakeholder) will also be prepared using the documents. Staff at INEADE will also be informed about PISA-D so that PISA-D will be integrated in the system of assessments. The PISA-D team will also have general and technical training. Preparatory materials will be prepared about PISA-D specifically for teachers about the domains of PISA and the probable date of PISA-D field trial and data collection and sample questions. Manuals and protocols will be developed in French, Wolof and Arabic and they will be used in the training of data collectors. The operation manuals will include the process of data capture by optic scanners and these manuals will be used for training and management of coding.

**Year 1 (2015) goal: To inform and prepare the education system, related fields and stakeholders about PISA**

| Activity | Introductory and preparatory products related to PISA for schools and IAs (16) and IEFs (60). Parents/parent associations, teachers, Committee members and government departments. |
|---|---|
| Deliverables | Print and media products in three languages. |
| Country responsibilities | Development of introductory and preparatory products and general and targeted dissemination of these products. Interactive methods as well. |
| In-country costs | Print in 3 languages: 10 000 flyers USD 2 500. |
| | Print in 3 languages: Development of reference document USD 7 000. |
| | Print in 3 languages: Document with procedures, description, sample questions, definitions of competence. USD 20 000. |
| | National distribution: 5 zones 5 cars with driver, gas, 3 days USD 4 650. |
| | Media: Radio and Television in 3 languages: USD 5 000. |
| Expected additional funding | Under negotiation with donors. |

Total cost Year 1 (2015) = USD 39 150

**Year 2 (2016) goal: To inform and prepare the education system, related fields and stakeholders about PISA through the web site**

| | |
|---|---|
| Activity | To develop materials and to post them on PISA web site. |
| Deliverables | Digital products in 3 languages. |
| Country responsibilities | Development of introductory and preparatory and general digital products. |
| In-country costs | USD 0. |
| Expected additional funding | Under negotiation with donors. |

Total cost Year 2 (2016) = USD 0

**Year 3 (2017) goal: Information and preparation for data collection**

| | |
|---|---|
| Activity: | Products related to PISA for schools and IAs (16) and IEFs (60) to prepare them for implementation of PISA. |
| In-country costs: | Print in 3 languages: Booklet on PISA procedure for Field trial: USD 1 000. |
| | Print in 3 languages: Booklet for data collection in schools that have been sampled: USD 1 000. |
| | Media in 3 languages: Radio and Television: USD 5 000. |
| Expected additional funding: | Under negotiation with donors. |

Total cost Year 3 (2017) = USD 7 000

**Year 4 (2018) goal: Preparation and dissemination of national report and targeted products**

| | |
|---|---|
| Activity | Preparation of national report in multiple languages. Also targeted products based on PISA-D results. |
| Deliverables | National report and targeted products based on PISA-D results. |
| Reporting requirements | Brief Minister and Ministry on results. |
| Country responsibilities | Prepare national report and targeted products based on PISA-D results in three languages and to disseminate them according to the Communication Plan. |
| In-country costs | National report: English 50, French 5 000, Wolof 50, Arabic 100, USD 30 000. |
| | Targeted products approx. 12 pages; stakeholders 12; schools 3000; IAs and IEFs 75; teachers 3 000; parents 3 000 (4 page brochure); in three languages: USD 45 000. |
| | Media products TV and radio USD 5 000. |
| | Grand total USD 80 000. |
| Expected additional funding | Under negotiation with donors. |

Total cost Year 4 (2018) = USD 80 000

**Summary: Total capacity building element cost = USD 126 150**

### 5.2. Increased INEADE capacity for large-scale assessments

*5.2.1. Area for development: Infrastructure improvements*

The ultimate goal for this area of development:

- up-to-date infrastructure for implementing PISA-D and national assessments

Assessment of capacity building elements:

- access to reliable high bandwidth internet connection – **emerging**

- software resources – **emerging**

- computing security – **emerging**

- computing security – **emerging**.

INEADE would like to increase the bandwidth and reliability. INEADE will include the upgrading of laptops and software for staff in the budget. The laptops used for PISA-D will be controlled to ensure only approved software is loaded. There would need to be a dedicated server not linked to the internet for secure storage of data. The secure storage space will be remodelled for improved functionality and security such that the secure server and PISA instruments can be stored safely in it.

**Year 1 (2015) goal: To have the necessary infrastructure for PISA and other national assessments**

| Activity | Purchase of laptops, server and software. |
|---|---|
| Deliverables | 8 Laptops at USD 1 600 = USD 12 800. Server USD 12 000. Software SPSS USD 3 000 per license. 8 licenses. USD 24 000. Remodelling of secure storage space USD 2 500. Total USD 51 300. |
| Country responsibilities | INEADE will ask for bids against specifications. |
| In-country costs | USD 51 300. |
| Expected additional funding | Under negotiation with donors. |

Total cost Year 1 (2015) = USD 51 300

**Summary: Total capacity building element cost = USD 51 300**

*5.2.2. Area for development: Psychometric methods*

The ultimate goal for this area of development:

- to develop a critical mass of staff in INEADE who understand, work with and interpret psychometric instruments

Assessment of capacity building elements:

- NCs understanding of Item Response Theory – **emerging**

- NCs test development skills – **emerging**.

Capacity building needs to be delivered in French in Dakar. INEADE will have training in IRT and psychometric methods. This information will be used in the future to create an item bank by grade level and item difficulty related to scale. Training is planned in IRT and psychometrics for staff of INEADE and the PISA-D team.

**Year 1 (2015) goal: To develop the capacity to understand and use psychometric methods**

| | |
|---|---|
| Activity | A five day workshop in French on psychometric methods for INEADE staff engaged in designing and implementing assessments. Topics will include Item Response Theory and its practical and evaluative applications, reduced respondent burden through multiple booklets, scale development based on difficulty, levels of competence, reading components, indices (such as Socioeconomic status) and the use of plausible values. The course will include theory, practice and international standards and the value of IRT for assessments. |
| Deliverables | The workshop will be designed in documented theory and practice modules that can be also used for self-learning or training by trainers from INEADE who have attended the workshop. At the end of training staff should be able to apply and interpret results based on the methodology. Individuals who successfully complete all three training programmes (Pyschometry, item writing and item banking and multivariate analysis) will receive a certificate. |
| Country responsibilities | INEADE will finalise specifications for the workshop and the preparation of modules and engage an international expert to deliver the workshop in French. They will organise the workshop off site, arrange for the full time attendance by participants and the uploading of training modules for retrieval. |
| Administrative details | The international expert who can deliver this workshop in French will be selected with the aid of the OECD and the international contractor. The workshop will be delivered in French. The option of working through two-way video conferencing will be considered but the savings may not be worth losing the possibility of live interaction for exercises. |
| Relevant documentation | Development of contract. |
| In-country costs | International Expert: USD 8 000. |
| | Travel, hotel and per diem: USD10 000. |
| | Development of theoretical chapters: USD 7 000 |
| | Development of exercises and answers: USD 5 000 |
| | Delivery of the course: USD 30 000. |
| | Participant cost (CFA 12 500) USD 25 per day; 5 days 20 participants: USD 2 500. |
| Expected additional funding | Under negotiation with donors. |

Total cost Year 1 (2015): USD 32 500

**Year 2 (2016) goal: To start the process of introducing psychometry into national evaluations**

| Activity | To start the process of using psychometric methods for national evaluations. |
|---|---|
| Deliverables | Plans for the use of psychometry for more advanced methods of evaluation. |
| Country responsibilities | Using psychometric methods to improve national evaluations according to strategic plan and training new staff using training modules. |
| Expected additional funding | Under negotiation with donors. |

Total cost Year 2 (2016) = USD 0

**Summary: Total capacity building element cost = USD 32 500**

*5.2.3. Area for development: Item writing and item banking*

The ultimate goal for this area of development:

- to develop a critical mass of staff at INEADE who are capable of developing competency based cognitive test items for PISA-D and for national assessments and to create an item bank in INEADE.

Assessment of capacity building elements:

- NCs test development skills – **emerging**.

INEADE will have training in IRT and psychometric methods for item development. This information will be used in the future to create an item bank by grade level and difficulty based on competencies. Capacity building is to be delivered in French.

**Year 1 (2015) goal: To develop the capacity in the fundamentals of item writing for competencies and item banking**

| | |
|---|---|
| Activity | A five day workshop in French in the development of items using the PISA cognitive frameworks and the creation of an item bank for INEADE staff engaged in designing and implementing evaluations. Topics will include authentic competencies, real world task, scoring, scaling based on difficulty based on competencies, testing for difficulty, meta data for items, composition of test instruments using items and the creation and use of item banks with practice sessions for each one. The course will include theory, practice and international standards for item writing and banking. |
| Deliverables | The workshop will be designed in documented theory and practice modules that can be also used for self-learning or training by trainers from INEADE who have attended the workshop. The items produced during the workshop should be ready for testing to conform to levels of difficulty of competencies and for input into a preliminary data bank. The items developed should be of sufficient quality to contribute to an item bank for PISA-D. Individuals who successfully complete all three training programmes (Pyschometry, item writing and item banking and multivariate analysis) will receive a certificate. |
| Reporting requirements | The establishment of an item bank capacity at INEADE for all assessments by grade and competency level. |
| Country responsibilities | INEADE will finalise specifications for the workshop and the preparation of modules and engage an international expert to deliver the workshop in French. They will organise the workshop off site, arrange for the full time attendance by participants and the uploading of training modules for retrieval. |
| Administrative details | The international expert who can deliver this workshop in French will be selected with the aid of the OECD and the international contractor. The workshop will be delivered in French. The option of working through two-way video conferencing will be considered but the savings may not be worth losing the possibility of live interaction of writing of items. |
| Relevant documentation | Development of contract. |
| In-country costs | International Expert Contractor: USD 8 000. |
| | Travel, hotel and per diem: USD 10 000. |
| | Development of theoretical chapters: USD 7 000. |
| | Development of exercises and answers: USD 5 000. |
| | Delivery of the course: USD 30 000. |
| | Participant cost (CFA 12 500) USD 25 per day; 5 days 20 participants: USD 2 500. |
| Expected additional funding | Under negotiation with donors. |

Total cost Year 1 (2015) = USD 32 500

**Year 2 (2016) goal: Creating a critical mass of item writers and initiation of item bank for national and international assessments**

| Activity | Continued practice of development of items for other assessments and input into the item bank with related meta data. |
|---|---|
| Deliverables | The item bank will be stored in the new server for use by authorised persons at INEADE. |
| Country responsibilities | Continued development of items according to grades, quality control, judgement of level of difficulty, meta data and storage of items in the item bank for use in national evaluations. |
| In-country costs | USD 0. |

Total cost Year 2 (2016) = USD 0

**Year 3 (2017) goal: Stabilisation of item writing capacity and integration of item bank into the system**

| Activity | Scheduled development of items by assessment, grade and difficulty related to scale for the item bank in the strategic plan. |
|---|---|
| Deliverables | Development of test instruments from the item bank. |
| Country responsibilities | Development of an item bank for national assessments according to Strategic Plan. |
| In-country costs | USD 0. |

Total cost Year 3 (2017) = USD 0

<u>**Summary**</u>**: Total capacity building element cost = USD 32 500**

*5.2.4. Area for development: Research methodologies*

The ultimate goal for this area of development:

- to conduct research using PISA-D data (and other evaluation data) for the production of first results and in-depth research to create evidence for policy makers, practitioners and stakeholders.

Assessment of capacity building elements:

- feedback from ILSA – **emerging**

- adequacy of funding – **emerging**

- stakeholder use of ILSA research – **emerging**

- NPM experience with dissemination results from LSA – **established**

- management of linked data files – **established**

- data manipulation skill – **established**

- data manipulation skills – fluency with statistical software – **advanced**.

The plan is to add CFA 8 000 000 (USD 16 000) for research to the SNERS budget, which is 10% of the total budget. Capacity building must be delivered in French where it is a priority. A research plan will be developed for PISA-D. The PISA-D research plan will have a budget, priority research questions and

number of planned reports. PISA-D results will be used for indicators, for example, the Annual report on education by the ministry. PISA-D research results will also target decisions on curricula, teacher training, etc. A research plan of policy relevant questions with input from stakeholders will be developed. A narrative report will be developed for PISA-D using descriptive, bivariate and multivariate analyses. The PISA-D team will benefit from training in merging of files. Training in software used for PISA-D for complex procedures should be provided. Introductory and in-depth training will be provided for a larger group in data management using macros and syntax files in relation to PISA-D data. Training will be provided in IRT and psychometrics (multiple item response models, test dimensionality, item bias, and differential item functioning) for staff of INEADE and the PISA-D team.

**Year 1 (2015) goal: To develop a policy relevant responsive research plan for PISA**

| | |
|---|---|
| Activity | Development of a policy relevant responsive research plan linked to the dissemination and communication plans. |
| Deliverables | Research plan for the national PISA report and in-depth research. |
| Country responsibilities | Work with stakeholders to determine their needs for evidence and to develop research questions based on such needs. Development of a policy relevant responsive research plan linked to the dissemination and communication plans. Sharing of plan with stakeholders. |
| In-country costs | USD 0. Costs included in stakeholder engagement section. |

Total cost Year 1 (2015) = USD 0

**Year 3 (2017) goal: To develop the capacity for multivariate analysis for policy relevant research**

| | |
|---|---|
| Activity | A five day workshop in French on the use of multivariate analysis related to policy relevant research questions for INEADE staff engaged in designing and implementing evaluations. Topics will include the writing of policy relevant research questions, use of scales and categories for variables, the appropriate analysis to be applied depending on research questions, interpreting the results of regression, factor, probit analysis and the interpretation of results in relation to the research question. |
| Deliverables | The workshop will be designed in documented theory and practice modules that can be also used for self-learning or training by trainers from INEADE who have attended the workshop. PISA data will be used for practice sessions, including plausible values. Individuals who successfully complete all three training programmes (Pyschometry, item writing and item banking and multivariate analysis) will receive a certificate. |
| Country responsibilities | INEADE will finalise specifications for the workshop and the preparation of modules and engage an international contractor to deliver the workshop in French. They will organise the workshop off site, arrange for the full time attendance by participants and the uploading of training modules for retrieval. |
| Administrative details | The international expert who can deliver this workshop in French will be selected with the aid of the OECD and the international contractor. The workshop will need to be delivered in French. The option of working through two-way video conferencing will be considered but the savings may not be worth losing the possibility of live interaction during exercises. |
| Relevant documentation | Development of contract. |
| In-country costs | International Expert: USD 8 000. |
| | Travel, hotel and per diem: USD 10 000. |
| | Development of theoretical chapters: USD 7 000. |
| | Development of exercises and answers: USD 5 000. |
| | Delivery of the course: USD 30 000. |
| | Participant cost (CFA 12 500) USD 25 per day; 5 days 20 participants: USD 2 500. |
| Expected additional funding | Under negotiation with donors. |

Total cost Year 3 (2017) = USD 32 500

**Year 4 (2018) goal: To conduct multivariate analysis with PISA data for the National Report and for targeted products**

| | |
|---|---|
| Activity | The core team to conduct multivariate analysis for the PISA National Report and for targeted products. |
| Deliverables | Narrative national report and targeted products based on multivariate analysis. |
| Country responsibilities | To ensure that there is a critical mass of staff using multivariate analysis to prepare the national report and targeted products. |
| In-country costs | USD 0. |

Total cost Year 4 (2018) = USD 0

**Summary: Total capacity building element cost = USD 32 500**

**6. Summary of Capacity Building Plan for Senegal**

The costs for the two types of capacity building investments are shown over the three years in the table below. The total cost for the PISA-D Implementation investment amount to USD 315 190 which is the greater share of the costs. The capacity building elements under *investments for Increased INEADE Capacity for large-scale assessments* total USD 148 800 over the four years.

The total proposed budget for capacity building for Senegal is therefore USD 463 990, but it should be noted that the costs are unevenly distributed over the four years. The costs in the first year are highest, amounting to USD 156 020 because of higher costs associated with upgrading existing and new quality procedures for PISA-D implementation. In the second year, the costs are USD 92 970, in the third year USD 71 970 and in the fourth year, USD 143 030 because of the costs of the dissemination of PISA-D results.

Of the eight capacity building elements, upgrading existing and new quality procedures for PISA-D implementation was the most costly at USD 162 960 in order to meet PISA standards.

**Table 2. Capacity Building Plan: Senegal**

Total capacity-building plan cost by capacity element (in US dollars)

| | Capacity Building Elements | 2015 USD | 2016 USD | 2017 USD | 2018 USD | Total USD |
|---|---|---|---|---|---|---|
| PISA-D implementation | Stakeholder engagement | 5 270 | 5 270 | 5 270 | 5 270 | 21 080 |
| | Upgrading existing and new quality procedures for PISA-D implementation | 22 800 | 55 200 | 29 960 | 51 560 | 159 520 |
| | School, student and out-of-school youth sampling | Sampling cost estimate USD 5 000 | 0 | 0 | 0 | 5 000 |
| | Product development, communication and dissemination | 39 150 | 0 | 7 000 | 80 000 | 126 150 |
| Increased INEADE capacity for large-scale assessments | Infrastructure improvements | 51 300 | 0 | 0 | 0 | 51 300 |
| | Psychometric methods | 32 500 | 0 | 0 | 0 | 32 500 |
| | Item writing and item banking | 32 500 | 0 | 0 | 0 | 32 500 |
| | Research methodologies | 0 | 0 | 32 500 | 0 | 32 500 |
| Total | | 188 520 | 60 470 | 74 730 | 136 830 | 460 550 |
| **Grand Total** | | | | | | **USD 460 550** |

Note: The cost of translation (simultaneous and print) is not included.

The funding for capacity building has not yet been allocated but discussions have begun between INEADE, the Ministry of Education and the World Bank. Under the joint project of the World Bank and the Global Partnership for Education, the Government of Senegal launched the *Projet d'amélioration de la qualité et de l'équité de l'éducation de base* (PAQUEEB). Though the donor programmes have thus far focused on the early years, the PAQUEEB project also cites the importance of investments in the quality of higher education. Furthermore, the World Bank has a project under *Programme d'amélioration de la qualité, de l'équité et de la transparence* (PAQUET), which includes capacity building for assessments in Senegal. It is likely that under these two programmes, PISA-D national costs as well as the costs for capacity building could be negotiated.

## 7. Monitoring and evaluation

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 should be noted, that it is the ensemble of areas of development that results in the desired capacity, rather than individual areas of development, which is why the plan 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 | Indicators |
|---|---|---|---|
| 1 | Stakeholder engagement | To work with stakeholders to understand their needs for PISA-D evidence and to provide them appropriate results for application. | • regular meetings of the Advisor and stakeholder committees<br>• documentation of need for evidence and country priorities<br>• preparation of targeted products with PISA-D evidence |
| 2 | Upgrading existing and new quality procedures for PISA-D implementation | PISA-D will be successfully implemented meeting all standards and these standards will also be applied to national assessments. | • successful actions for meeting PISA standards over the four years.<br>• Senegal included in PISA international comparisons<br>• national assessments used international standards |
| 3 | School, student and out-of-school youth sampling | To develop a reliable school and student frame for sampling and to work with *Agence nationale de statistiques et* de d*émographie* to prepare a sample of out-of-school children based on the Census 2013, both preferably stratified by IAs to be policy relevant. | • met the specification of the international contractor for the school frame<br>• successful sample stratified by IAs<br>• met the specification of the international contractor for the children out of school frame customised for the needs of Senegal |
| 4 | Product development, communication and dissemination | To develop products for PISA-D, for preparation, implementation and dissemination of results which are general as well as targeted? To develop and implement a communication and dissemination plan. | • product plan based on the documentation of the needs for evidence (See area 1)<br>• implementation of the product plan<br>• communication (and media) plan and related products<br>• implementation of communication plan<br>• dissemination plan, including both active and passive (website) modes<br>• implementation of dissemination plan |
| 5 | Infrastructure improvements | Up-to-date infrastructure for implementing PISA-D and national assessments | • purchase of laptops<br>• purchase of software<br>• purchase of server<br>• upgrading of broadband internet connection<br>• remodelling of secure storage. |
| 6 | Psychometric methods | To develop a critical mass of staff in INEADE who understand, work with and interpret psychometric instruments | • a critical mass of staff undertake training in the use of psychometric instruments<br>• the use of manuals and documents related to use of psychometric instruments to ensure correct application in the implementation of PISA-D<br>• the use of psychometric methodology in national assessments |

| | Area for development | Ultimate goal | Indicators |
|---|---|---|---|
| 7 | Item development and item banking | To develop a critical mass of staff at INEADE who are capable of developing competency based cognitive test items for PISA-D and for national assessments and to create an item bank in INEADE. | • a critical mass of staff undertake training in item development<br>• contribution of items for PISA<br>• use of psychometric items for national assessments by grade and difficulty related scale<br>• creation of an item bank at INEADE for national assessments |
| 8 | Research methodologies | To conduct research using PISA-D data (and other evaluation data) for the production of first results and secondary research to create evidence for policy makers, practitioners and stakeholders. | • a critical mass of staff undertake training in multivariate analysis<br>• use of multivariate analysis for the PISA national report<br>• use of multivariate analysis for PISA secondary analysis<br>• PISA products presenting evidence generated by multivariate analysis<br>• use of multivariate analysis for reports for national assessments<br>• use of multivariate analysis for secondary research using data from national assessments<br>• products presenting evidence generated by multivariate analysis using data from national assessments |

## 8. Next steps

The capacity building plan from the acquisition of funds to the plan for monitoring and evaluation should be set in motion. This plan should be carefully linked to the PISA-D implementation schedule so the capacity is in place before activities are undertaken in each phase. The Project Implementation Plan (PIP) will serve as management tool, aligning the activities of INEADE with those of OECD and the International Contractor.

PISA-D should be linked to national policies and aspirations by ensuring that it is properly implemented and that it yields policy and practice relevant results. For instance, PISA results could contribute to the *Document de stratégie pour la croissance et la réduction de la pauvreté* (DSRP) where the goal of becoming a middle economy by 2035 through a skilled workforce is expressed.

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# PISA FOR DEVELOPMENT
# Capacity Building Plan: Senegal

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. Senegal is one of six countries participating in the project, and the Ministry of Education, through the National Institute for Study and Action for Development in Education (INEADE), 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 Senegal. PISA for Development is technically complex, operationally demanding and statistically advanced, and the capacity building plan therefore focuses on PISA components that will allow Senegal 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: Senegal report have been used to design this capacity building plan for Senegal that will be implemented by the OECD, its contractors, the Ministry of Education, and the National Institute for Study and Action for Development in Education (INEADE), through the PISA for Development project.

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