

**Using Digitization to Enhance Governance
of the Education Sector in the DRC**

Partnership between the World Bank and Belgian Cooperation

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Using Digitization to Enhance Governance of the Education Sector in the DRC

1. The Context and Goals

Despite strong economic growth of the past several years (averaging 7.7 per cent between 2010 and 2014) and solid growth forecast for the upcoming years, poverty reduction and access to basic services of the broader strata of the population of the DRC has been disappointing. The 2014 Human Development Index (HDI) ranked DRC 186th out of 187 countries. Almost 84 percent of the population lives on less than US\$1.25 per day (international poverty line). The average annual income of the bottom 40 percent of the population is about 19 percent of the average annual income of the top 20 percent of the population, showing large disparity.

The need to improve governance structures in general and channels of accountability in particular has been recognized by major multilateral and bilateral donors to be one of the key challenges and constraints to development in the DRC.¹ One such challenge is lack of effective interaction among the levels of government as well as among the service providers, the government, and the population. Better and more transparent channels of communication, participation, and accountability need to be established to make service provision more demand driven and accountable both to the population and to the government.

The suggested EFO will help relax the constraint of insufficient transparency and accountability of local administrations and service providers, and answers the Ministry's call for a more rapid activation of the Government to Government (GtoG) communication channel to better track textbook distribution and school construction.² The EFO will achieve this goal through expanded digitization of information flows among the providers, local and national administration on the one hand and service recipients, the citizens of the DRC on the other. The governance work and ICT enhanced accountability practices will be piloted in the sector that is most relevant to the vast majority of the population, that of primary education.

Synergies and Continuity with the Program of 'Enhancing Accountable Governance in the DRC' (2014)

The EFO builds on and is reinforcing the goals and outcomes of the EFO granted by the Belgian Cooperation to the World Bank in 2014 (EFO no 818 "Enhancing Stability through Accountable and Inclusive Local Governance in the DRC"). The goals of the EFO 818 are to support citizen engagement in formal governance, capacity building for local administrations, dissemination of knowledge on demand driven governance, and improved accuracy of measurement of the effectiveness of governance interventions. The interim goals of the EFO have been achieved and

¹ See for e.g. operational Plan 2011-2016, Updated December 2014, DFID, https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/389482/DRC_Operational_Plan.pdf; CAS Performance and Learning Review, draft, 2015; PAIDECO local governance intervention supported by Belgian Cooperation <http://www.btcctb.org/en/theme/governance>.

² During the identification and preparation missions, the Ministry asked for a more rapid scale up and activation of the Government to Government (GtoG) communication channel to better track textbook distribution and school construction carried out in the framework of the Project Support to Basic Education (PROSEB) intervention. This EFO responds to this need to track textbook distribution and school construction. Building on the government's enthusiasm, the project team agreed to increase the scale and level of engagement in two provinces.

a significant number of outputs has been produced both in the realm of participatory budgeting (the initial focus of the EFO) as well as in the realm of governance in primary education (the second concentration of the EFO). Outputs of the EFO 818 implementation include, among other, a manual for participatory budgeting at the local level, a comprehensive concept note focused on the introduction and relevance of ICT in the context of social accountability and education, initial training reports and conference organizations and presentations on the topic. Furthermore, the successful missions to the DRC, related fieldwork, and negotiations with the Ministry of Education as well as consultations with researchers and other partners in the field allowed to prepare and detail the concept for the operational intervention promoting digitization of accountability in primary education at the national, provincial, and local levels. The technical and operational designs of the platform for digitized accountability as well as rigorous evaluation design including statistical analysis, a sampling frame for randomization, and literature review have been finalized by highly regarded international experts. A report on interim results and outputs has been delivered to the donor for donor's satisfaction.

It is also important to stress that the Government of the DRC as well as partners in civil society have met the shift of the EFO to the issues of digitized accountability in primary education with great enthusiasm and the expectations for quick results from digitization are high.

To make the EFO funded intervention deliver on its promise in the context of changed financial conditions (in dollar – euro exchange rate), the necessary shift in sectors (from local governance to governance in the education sector) and a related change in tools (making digitized accountability the centerpiece of the intervention) **it becomes imperative to increase funding of both the intervention and the impact evaluation.** Increased funding will make the pilot more sustainable, increase the inclusion of both administrators and various social groups into digital accountability as well as help fund the end line evaluation, providing a rigorous assessment of the pilot and allowing for a better informed scale up. We describe the change in the EFO needs as well as an updated list of expected outcomes below.

The change in the exchange rate has led to a great diminution of the initial grant in dollar terms (between the signing of the EFO in April 2014 and the date of the current submission, September 2015 the award has lost approximately a quarter of its dollar value). **The sectoral change of the project direction** (coordinated with and approved by the donor) to digitization of governance in private education has increased the training and capacity building needs of the intervention. Those include training and capacity building for the management and operation of the digital accountability platform (the Platform) at the national, provincial, and local levels. Furthermore, expanded training and capacity building needs to happen among government officials, educators, and parents for the use of the Platform to lodge requests/complaints and receive timely feedback. All these adjustments will help secure relevance and sustainability of the intervention, but at the same time require additional and longer term funding. The EFO proposal below describes these additional needs as well as new needs for digitization of information in primary education and makes the connection between the previous EFO and the EFO presented below.

Why Digitization of Governance in Education is Important?

The importance of enhancing provision of primary education cannot be overstated. DRC is undergoing a demographic transition with declining child mortality but a sustained fertility rate (measured at 6.6 children per woman in 2013). DRC has a very young population with about 67

percent of the population being less than 24 years old, and almost 50 percent under the age of 14. This trend is expected to remain unchanged for the next 20 to 30 years. As a consequence, this overwhelmingly young population will put enormous pressure on the educational system and the labor market. The number of children under 18, now standing at 36 million is projected to increase to 62 million by 2050.³

The Government is making an effort to increase access and improve quality of service provision in the education sector.⁴ The share of budget that is allocated to education increased from 9.5 percent in 2010 to 13 percent in 2012, but still remains below the average of 20 percent for Africa. The important investments that have been made to expand the system have resulted in a rapid increase in enrolments in all levels of education. From 2008 to 2013 the number of students registered across the system, from primary to higher education, grew from 13.6 million to 16.8 million. In 2013, gross enrolment rates reached 101% percent in primary education, 47.9 percent in secondary education and 33.9 percent in higher education. The gradual introduction of a fee-free policy for primary education in September 2010 has further strengthened this positive trend in access, specifically for children from poorer household's and has contributed to a reduction in gender disparity.

Despite these efforts major weaknesses on the education sector persist. For the children attending school, the quality of education provided is low. At completion of the fifth grade, only 47 percent of pupils demonstrate minimal knowledge in French and 59 percent in mathematics. The poor learning environment is underpinned by poor teaching skills and the limited availability of textbooks.

One of the key weaknesses in the governance of the education sector is poorly working channels of communication within the sector. The Ministry has no means of effective communication with its provincial (PROVED) and district (sub-PROVED) branches. Oversight over management of school is even more constrained. There is no reliable flow of information among the Ministry, PROVEDs, sub-PROVEDs and schools about the quality, quantity and timeliness of resources received by the schools making teaching possible. The existing reporting about the number and performance of students and teachers is unreliable and arrives with great delays. The ability of the Ministry to send information and/or policy directives or receive feedback from schools and local departments of education is constrained by great distances, lack of roads, and lack of reliable telephone or other messaging system. Another reason is lack of protocols and trained professionals to mediate the flow of information allowing for a better governance of the education sector.

The suggested EFO will tackle one of the key issues of governance in the educational sector – **the creation of workable channels of feedback, accountability, and redress.** The EFO will build on the high penetration of mobile telephones in the DRC and wide geography of mobile coverage to help the government establish a mobile accountability platform (the Platform). The usage of mobile phones has been estimated to reach 47% in 2013. Also, 55% of the country's

³ Generation 2030 /AFRICA, UNICEF, Division of Data, Research, and Policy, August 2014, http://www.unicef.org/publications/files/UNICEF_Africa_Generation_2030_en_11Aug.pdf

⁴ Brookings Institute (2013). *The New Push for Education Reform in the Democratic Republic of the Congo*. Washington DC: Brookings.

population resides in areas currently covered by mobile networks.⁵

Usage and Corresponding Outcomes of Complementary Funding

The resources the team is applying for will complement the resources of the EFO funded accountability enhancing intervention launched in 2014 in the following ways:

- **Additional resources will allow to provide capacity building and training to a large group of national and sub-national public officials.** A comprehensive training aims to make sure that public officials engaged in the education sectors – from high level national decision makers to district level inspectors, school principals, and teachers in the pilot regions – understand the function and usage of the Platform. Success of the Platform largely depends on the understanding of its functions and effective usage by the employees in the sector at all levels.
- **The new resources will also allow to extend training and an information campaign to the bigger groups of population,** providing information to teachers and parents on how to use the Platform, i.e. how to report their grievances and solicit redress. This expanded training and information campaign will help generate greater demand and use of the system by the population, creating context for a virtuous circle of greater accountability of education provision. In addition on-site and online user research on the population demographics, behavior and understanding of social accountability, an overview of the audience/ user profile will allow to fine-tune the system as well as use the system for the information campaigns, and the development of information campaign enablers such as an informative brochure for parents and government officials, and the online presence of the project and Platform (i.e. digitized ratings of schools).
- **The 2014 EFO resources are helping to fund the baseline impact evaluation.** Additional resources will help **to fund the end line study of the impact evaluation,** the key second part of the impact evaluation, including household level survey, school level survey and related qualitative studies. The award will also fund report writing, as well as adjustments to the baseline design, publication and dissemination.
- **Additional resources will allow improved communications channels within the Ministry of Education.** During identification and preparation missions the Ministry asked for a more rapid scale up and activation of the Government to Government (GtoG) communication channel to better track textbook distribution and school construction carried out in the framework of the PROSEB intervention (see below). To respond to this objective need to track textbook distribution and school construction as well as to build on the government's enthusiasm, the project team agreed to increase the scale and level of engagement in two provinces.
- **Finally, the additional resources will fund the extension of our applied research work to the governance of private education provision,** a largely disregarded but

⁵ World Bank (2012). Cell Phones for Citizen Engagement in the DRC. Washington, D.C. Source: <https://wbi.worldbank.org/wbi/stories/cell-phones-citizen-engagement-drc>

increasingly important section of education providers. Despite occupying a significant share of the education market (it is estimated that more than 4500 schools operate in Kinshasa alone) there is no rating of such schools or other sources of information allowing the parents to receive adequate information about private schools. New funding will allow the project to conduct an inventory of such schools, including a digitized rating that will be made available to parents, students, and the broader public (as part of the above mentioned information campaign).

Altogether these changes will allow to 1) significantly increase the impact of the digitization of the governance in education intervention, 2) better secure its sustainability, 3) ensure the completion and dissemination of a rigorous impact evaluation study crucial as resource for future projects and study in the region and for the field of digitization of governance globally and 4) enhance overall policy relevance of digital transmission of information for government action and redress in the Ministry and its provincial (PROVED) and district (SUB-PROVED) branches.

2. Shared Development Objectives for the Belgian Cooperation and the World Bank

The World Bank and the Belgian Cooperation share key development objectives of supporting inclusive and participatory governance for equal access to public goods for poor citizens of the DRC. Both the World Bank and the Belgian Cooperation also support digitization of development as a means to equalize access to services and opportunity. The suggested collaboration will build on these synergies to improve the governance transparency in the educational sector in the DRC.

3. Description of Activities:

- **Operational Mobile Digitized Intervention (*Social Accountability Platform*) and Training and Capacity Building for the Usage of the Platform**

The Mobile Accountability Intervention will create a modern ICT enhanced (digitized) accountability platform (the Platform). Currently the method of digitized accountability has been expanding to various service provision contexts in development projects and policies. For a brief description of successes and challenges see Annex 1.

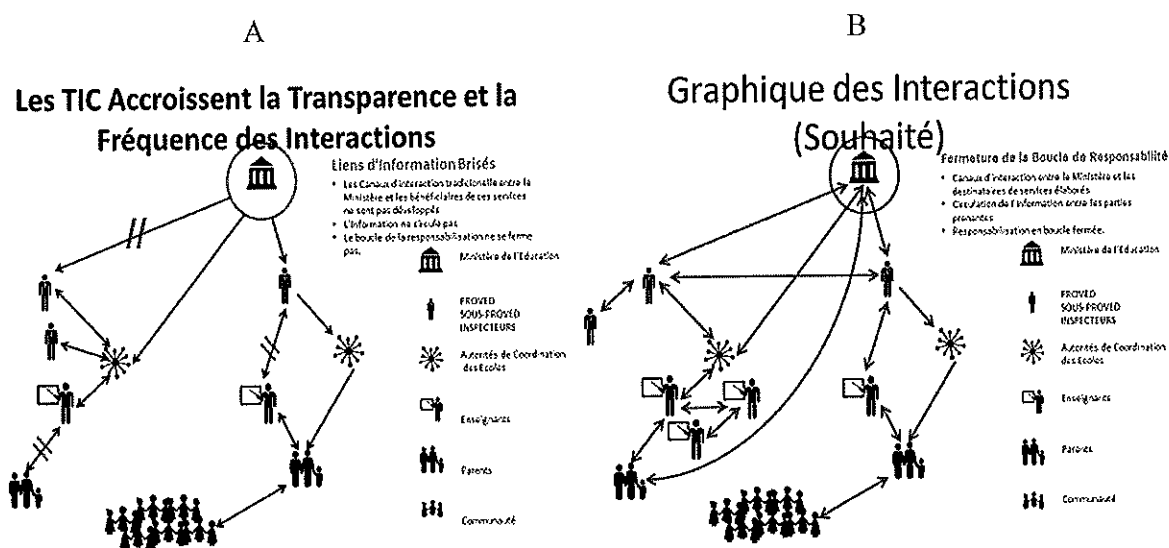
Considering poorly structured and incentivized formal oversight over primary education, informal oversight by the ‘demand side’ actors (parents and civil society) becomes a vitally important channel for better service delivery. The size of the country, poor road infrastructure makes rural schools in many parts of the country (particularly Equateur, Kasaï Oriental, Kasaï Occidental, Manyema, Northern Katanga) virtually impenetrable for formal oversight. At the same time, mobile telephone network covers the whole territory of the DRC and its penetration rate is estimated at 44%, growing rapidly.⁶ An ICT enhanced accountability

⁶ Budde.com, Democratic Republic of Congo; <http://www.budde.com.au/Research/Democratic-Republic-of-Congo-Telecoms-Mobile-and-Broadband-Market-Insights-and-Statistics.html?r=51>, last visited September 2015

platform, including a dashboard for oversight at the national, provincial, and district levels, including designated toll free numbers for SMS messaging for citizens and education professionals reporting will create an outlet for real time reporting on the progress of relevant educational activities.

The objective of the Platform is to increase transparency of textbook distribution and use and school construction within the context of the Project Support to Basic Education (PROSEB). The Platform will be designed to allow for further integration into the national information system (SIGE). Currently there is a lack of clear channels of transparent operational interactions not only between the government and the population, but also between different levels of government and between the government and service providers (including both religious and non-religious schools). (See Picture 1 A). The Platform will provide an ICT enhanced means of increasing the frequency and effectiveness of such interactions (Picture 1 B).

Picture 1: Present (A) and Desired (B) Channels of Interaction and Accountability in the Education Sector



The Platform will operationalize two formats of interactions: (1) Government to Government interactions (GtoG, including government to providers); (2) and People to Government interactions (P2G). In a subset of localities the creation of an ICT enhanced means of communications of grievances will be accompanied by an information campaign (see annex 1 for more detail on the characteristics and structure of the Platform). On the one hand, GtoG communication channels aim to better track textbook distribution and school construction carried out in the framework of the Project Support to Basic Education (PROSEB) intervention. As a response to the Ministry's request to scale up the GtoG interactions, the project team agreed to bring the project to the level of engagement in two provinces. On the other hand, P2G interventions will support bottom up accountability in primary education in the DRC. The project will provide a channel for local civil society stakeholders to voice their concerns and grievances playing the empowering role for local level actors.

Preparatory fieldwork in Kinshasa and Kasai Occidental conducted by World Bank staff and EFO funded experts revealed that the main constraints to effective accountability are not technical, but contextual. At the moment, administrative structures within the education system in the DRC are highly hierarchical and not open to internal criticism. Parental participation is also constrained by status and financial considerations. The creation of a safe environment to lodge grievances can close the accountability loop. The suggested design of the operational intervention, therefore, balances the need for the Ministry of Education to assume full ownership and control of the Platform, while creating an environment for candid feedback from relevant actors.

The EFO will assist in developing different management solutions for both national and sub-national accountability structures:

1. The **national accountability headquarters** will be located in the Ministry of Education, in Kinshasa, DRC. The national dashboard management center will have the capacity to initiate and process large scale and individual sms – based surveys, queries, and requests directed at lower administrative structures in the educational sector, state and quasi-private providers, as well as users of the education services. The Platform will also allow for feedback on corrective measures closing the accountability loop and providing information for policymaking.

Sustainability of the digitization of government oversight and accountability channels is associated with the availability of communication staff in the Ministry of Education to be engaged in the management of the Platform. The project preparation team has assessed the team in the Department of Communications of the Ministry of Education and judged the team to be big and skilled enough to manage the Platform after the training and piloting are complete. The Communications team of the Ministry will be trained in Platform management in cooperation with other departments of the Ministry to ensure that feedback requests from parents, teachers and principals are taken into account and answered. Relevant internal protocols will be created and vetted by the Minister and the relevant deputy ministers signaling to the employees of the Ministry the high priority the government is attaching to a well-managed and well-functioning accountability and redress platform. Coordination, response, and management training will be carried out for the employees of the communications department of the Ministry and also for relevant employees of other departments who will be responsible for substantive aspects of the response.

After the piloting phase ends, the costs of sms messaging will be considered as variable costs that the Ministry or donors would need to cover. Batch social messaging is inexpensive in the DRC (assessed by project experts to be 25 % of already competitive commercial SMS rates and could be negotiated further down depending on bulk and client-specific arrangements). The pilot will allow to carefully cost out these expenses and factor these costs into any accountability/management of education program the Ministry is part of. See budget for expert estimates of such expenses.

2. At the **provincial (sub-PROVED) and district (PROVED) level** accountability centers will be operated by non-government structures. District and provincial accountability centers will be tasked with providing users with a space for reporting that is safe and free of retaliation. These centers will work closely with the national accountability headquarters as well as district

and provincial education providers and administrators in directing users' queries, soliciting response, and administering demand side data collection on behalf of the Ministry of Education.

The intervention is to be carried out in two provinces, Kinshasa and Kasai Occidental. Resources permitting, the first phase of Platform activation will be extended to some districts of Equateur. Within these regions a sample of schools will be selected allowing for a rigorous implementation measuring the effects of different modalities of accountability on the outcomes of interest – textbook distribution and school construction. Additional EFO funding will allow to carry out more detailed capacity building and do so for a longer period of time (6 month longer) allowing for greater sustainability and more complete transfer of skills.

Sustainability of provincial accountability program is less straightforward than that of the national Platform. The reason is the identified need to anchor the provincial accountability center with a non-government entity to allow for retaliation free reporting. To minimize the uncertainty, the platform will anchor regional platforms with well-established organizations that have standing accountability programs in the DRC (current considered candidates are UNDP and USAid). The current pilot will assess the costs associated with the provincial NGO-led accountability program, making funding of such operations by the donors more realistic and predictable. The pilot will keep these expenses as low as feasible (expected to equal 1.5 local salaries, considering that infrastructure expenses will be covered by the national Platform), to make the related operational costs low and within reach form most bilateral and other donors should the pilot be judged a success in need of a follow up.

- **Impact Evaluation**

The objective of the Impact Evaluation (IE) is quantifying the causal effects of the Mobile Accountability Intervention. The evaluation not only will test the effectiveness of the Mobile Accountability tools, but also identify the key elements and difficulties that should be taken into account during the implementation of these tools. This proposal focuses on the funding of the end-line study, key to the rigorous assessment of the effectiveness of the intervention.

The major end-line study outcomes include:

1) School level outcomes: Distribution and effective reception of books/teacher's manuals, effective utilization of books/teacher's manuals, whether books are in good shape, students to book ratio (measures whether there are enough books), teacher absenteeism, student absenteeism. We propose collecting these outcomes with a school level observation to be undertaken in a randomly selected day after project implementation. In addition, this could be complemented with the yearly statistics data collected by the Ministry of Education.

2) Student level outcomes: This category aims measuring academic achievement. We propose developing and implementing French, Math and Cognitive ability tests to students that will attend 5th and 6th grades in the 2015/2016 academic year. These tests should be administered at the end of this academic year. In addition, we also suggest complementing the evaluation with the 2016 6th grade exam results implemented by the Ministry of Education. Notice that the

utilization of these outcomes is based on the assumption that the mobile accountability tools and training components will enter into full and effective operation on January 2016. However, if such implementation is delayed, the evaluation will be delayed in the same way. All outcomes of interest for the evaluation should be collected at least after 6 months of full and effective operation of the mobile accountability tools and the training provision.

An additional grant will enable us to fund adjustment to the tools produced for the baseline study (household and school level questionnaires, data collection protocols, focus groups scripts), end-line data collection, subsequent analysis and dissemination of the outcomes within DRC and more broadly in the development community globally and in West Africa in particular.

To the extent of our knowledge, no rigorous experimental impact evaluation of a mobile-based accountability program has been conducted. Therefore, the implementation of such impact evaluation within the PROSEB project would provide novel evidence on the effectiveness of a mobile-based accountability intervention. In addition, random assignment of the program could be stratified taking into consideration community level income inequality and ethnic fragmentation in order to test for heterogeneous effects along these dimensions that have been found relevant in previous literature. See annex 2 for a literature review and the demonstration of innovation of the work.

- **Qualitative Analysis of the Context for More Open Governance in Primary Education**

Building on the completed preliminary study, this EFO will allow to field a group of anthropologists/ local government experts to capture the nature of local formal (at the level of ETDs/chefferies) and informal (by population/civil society group) participation in public decision making, in terms of oversight over the quality of education, support to school construction, and/or resource mobilization for more effective operation and better teaching outcomes. The team will identify and track a set of contextual factors that affect community/parental participation in local governance in general and school functioning in particular. Collaboration with quantitative evaluation team will allow to assess whether the scale of response to modern accountability tools and the related change in provision of services can be traced to the contextual characteristics of the localities.

The second important analytical insight into governance of primary education in the DRC will be inventory and a note on the governance of schools for the poor to deepen the understanding of ownership structures, alignment of incentives and related outcomes.

4. The Overall Impact of the Collaboration and Risk Mitigation

The 'demand side' emphasis is innovative. The planned level of collaboration between public administrators, civil society and ICT providers is unprecedented for the DRC and highly innovative globally.

Tools for rigorous impact evaluation will be made available to other research teams in DRC and other developing countries. Policy results will be disseminated to allow governance stakeholder to adjust expectations on policy interventions.

The existing web portal “ICT4Gov.net” created as a result of the South Kivu pilot will be an initial platform of dissemination while other tools are being developed.

Risk assessment and mitigation below:

Issue	Risk assessment	Explanation
1. Pre-election dynamics can lead to a shift in government priorities undermining effectiveness of the EFO funded intervention	Low	<p>1. The proposed social accountability intervention has been agreed upon with the Government. The Ministry not only supports the creation of the ICT enhanced platform but actively champions its creation requesting speedy deployment. A possible change in Government could reduce the level of institutional engagement and support. The risk is however quite low, as improved governance and better education services are the top national development goals uniformly supported by all political forces and development partners and are not expected to change in the pre-election climate. The accountability focus of the intervention signals readiness of the government to open up on issues the population considers a priority and are viewed as highly popular. This stance is not likely to change in the pre-election context regardless of cabinet shifts.</p>
2. The ICT platform will not be actively used by stakeholders to report grievances because of fear of retaliation	Medium	<p>2. DRC formal governance structures in general and governance in education sector in particular are known to be top down and hierarchical. Preparatory mission to Ksai Occidental revealed great asymmetries in power distribution in primary education with teachers and parents having virtually no voice and no outlet to lodge complaints or air grievances. Preliminary analysis revealed that placing province/district level ICT enhanced accountability platforms within government education structures would undermine the ability of local practitioners and education sector clients to lodge complaints. To</p>

<p>3. There will not be enough associative presence on the ground to create a critical mass of popular support around the idea of reporting of grievances and related individual and collective action around demanding accountability and enhancing human rights in education</p>	<p>Medium</p>	<p>mitigate the risk of poor uptake of the accountability platform the TA will place local level accountability dashboards with non-government structures. Government engagement will be maintained by placing the national level dashboard within the Ministry of Education. In addition government officials will be sensitized to the need to initially use the accountability platform to better understand systemic issues with service delivery and policy adjustments rather than for individual persecution.</p> <p>Indeed, formal NGO presence at the district level, particularly in rural areas varies significantly across the DRC. This may undermine the creation of the critical mass of participants in the reporting process as parents will not feel the critical mass of support to propel reporting to higher routinized levels. To mitigate this, the project will follow the path of creating school-specific eco systems building on associative life that exists at the local level both formally and informally. Our preliminary research has shown that around most schools there are soccer groups, scout groups, community level women’s associations, various religious congregations. These groups will be identified and drawn into the “circles of greater transparency” by “youth ambassadors” to be prepared by the project to promote use of the platform and train in the simple use of simple mobile phones for voice activated reporting and sms messaging both parents and higher grade students. This peer to peer learning in support of accountability in the sector most population of the country personally care about (education) will help create the critical mass around the pro-active demand driven reporting through the use of this accountability tool. Building on the active associative life to demand better educational services is expected to help shift the vector in relations of the government and the population from top down to more interactive and participatory.</p>
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5. Overall Outcomes on international, national and local level

The proposed EFO will generate benefits at the international, national and local levels as follows:

- **International:** Rigorous evidence on the effectiveness of digitization of accountability and feedback mechanisms in primary education on school governance, transparency, parental participation, and educational outcomes.
- **National:** a digitized accountability and feedback platform for primary education allowing for more participatory and open governance of the sector, greater governmental and parental oversight over schools performance. Better information about the role, effectiveness and efficiency of private school, allowing for better informed governance of primary education.
- **Local:** local administrations have better tools for more open and transparent interaction with both parents and education providers, capacity of public officials to use digitization for better performance is enhanced.

6. Resources and Time Frame

The EFO 16-17 is expected to last 2 years, during FY 16 and FY 17. The contribution of the Belgian Cooperation is expected to stand at \$ 1 000 000. Please see timeline and budget attached.

Table 1: EFO Outcomes

Component1: Analytical Notes	
Outputs	Expected results

<ul style="list-style-type: none"> • A note on power distribution among local administration, PROVED (district) schools and parents at the local level 	<ul style="list-style-type: none"> • Better understanding of governance dynamics and channels of accountability • Policy advice on strategic use of digitized technology in different local contexts
<ul style="list-style-type: none"> • Analytical note on governance of primary education in the DRC 	<ul style="list-style-type: none"> • Mapping of actual state of primary education provision in the DRC • Better and deepened understanding of school governance, ownership structures, alignment of incentives and related outcomes. • Design of the digitized information campaign for the parents on the quality of schools attended by their children
Component 2: Operational Intervention on ICT for accountability in primary education and Training and Capacity Building for production/use of digitized governance of education	
Outputs	Expected results:
<ul style="list-style-type: none"> • Communications team of the Ministry is trained in management of the Platform • Protocols for lodging the complaints are created and tested, the use piloted, protocols adjusted • Digitized programs of Government to Government communication in education 	<ul style="list-style-type: none"> • National, Provincial, and local departments of education (PROVEDs and Sub-PROVEDs) can get better feedback from the national government, distribution of resources, materials and oversight are facilitated • Users can lodge complaints/requests and receive timely response; complaints are acted upon
<ul style="list-style-type: none"> • Digitized programs of communication among provincial/local administrations and the population. • Feedback programs for citizen reporting on the quality of education provision (textbook distribution, school construction) • Capacity building among public officials, teachers, and the population for more open communication and the user of messaging for feedback and accountability 	<ul style="list-style-type: none"> • Oversight over distribution of inputs (here textbooks and school construction) improved, feedback loop among different levels of primary education administrators (national, provincial, local) closed. • Citizens have channels to voice grievances, the channels are used, grievances are effectively addressed • The government and the population have the capacity to continue with digitized accountability after the end of the intervention
Component 3: Impact Evaluation	
Component Outputs	Expected results:
<ul style="list-style-type: none"> • Sampling frame • Evaluation tools • Survey data base 	<ul style="list-style-type: none"> • Evaluation tools completed, publicly available to be used in other evaluations for comparability and continuity • Household level survey data base publicly available, for wide use by development practitioners
<ul style="list-style-type: none"> • Report on the Baseline study 	<ul style="list-style-type: none"> • Data analyzed and used as baseline for the intervention and more broadly to better understand dynamics among parents, schools, local administrations at the local level
<ul style="list-style-type: none"> • A report on project evaluation 	<ul style="list-style-type: none"> • Rigorous evidence of the effects introduction of digitized methods of accountability on the quality of processes and outcomes in primary education. • Report disseminated, informs policy work on governance in the education sector

Annex 1: Brief Literature Overview

Modern ICT for Accountability

In recent years ICT enhanced mobile accountability has become a rapidly growing field in the contexts where quality of government performance is difficult to capture through regular means of formal oversight. ICT enhanced accountability platforms have been rapidly spreading globally at the national, sector, and project levels.⁷ For example, a highly popular mobile accountability platform has been set up by the President's office of the Government of Indonesia (<http://lapor.ukp.go.id>). It is connected to 86 ministries and agencies and has been successfully used by about 300 000 citizens to seek information or redress. In Kenya Open Data Initiative (KODI) was one of the first globally to make data on various key subjects of public interest publicly available in 2010. While praised for the cutting edge openness with raw data the initiative has been recently criticized for not paying enough attention to making data more accessible through user friendly apps as well as for failing to build a network of "infomediaries" (school teachers, clergy, public radio) and thus failing to reach most of the citizens, particularly the poor. In this case, while nominally acting on the freedom of information act, the new technology was not customized enough to translate data into actionable information, failing to close the accountability loop.⁸

While the number of ICT enhanced open data and accountability platforms have mushroomed, creation of relevant, accessible, and sustainable platforms remains a challenge, particularly in the context of development. The challenge in every case is adapting available technologies for a very particular local context. For example, in Nigeria building a public service monitoring platform has started in 2011. After a couple of false turns a firm has been identified that has invested into careful understanding of each provincial context, after which time technical solutions were found to match local environment, not the other way round. This is an important experience to learn from for this EFO.⁹

More Detailed Review:

The last decade has witnessed widespread coverage of Information and Communications Technology (ICT) in the developing world. As a result, several studies have measured the effects of such penetration on several socioeconomic outcomes. A first strand of literature has studied the economic effects of ICT using the introduction of mobile phone coverage (Aker, 2010; Aker and Fafchamps, 2011; Beuermann et al., 2012; Fafchamps and Minten, 2011; Jensen, 2007;

⁷ For a discussion of ICT enhanced accountability see for e.g. Kuriyan, Renee, Savita Bailur, Bjorn-Soren Giger, and Kyung Ryul Park, "Technologies for Transparency and Accountability Implications for ICT Policy and Implementation, ODT alliance, The World Bank, 2012; or Baena Olabe, Paloma and Theodore Kahn, "From Information to Participation: the Potential of New Technologies on Accountability Initiatives", TECHNICAL NOTES No. IDB-TN-355, Inter-American Development Bank, 2012. For early examples of SMS use for accountability in Africa see "SMS Uprising, Mobile Activism in Africa, ed. Sokari Ekine, Pambazuka Press, 2010.

⁸ Chiliswa, Zacharia, "Open Government Data for Effective Public Participation: Findings of a Case Study Research Investigating The Kenya's Open Data Initiative in Urban Slums and Rural Settlements", Open data research network, 2014 <http://www.opendataresearch.org/content/2014/654/open-government-data-effective-public-participation-findings-case-study-research>.

⁹ ICT for Public Service Monitoring: How can citizen-reporting help ensure public services are working for those who need them most? <http://reboot.org/case-studies/ict-for-public-service-monitoring-nigeria/>

Muto and Yamano, 2009; Svensson and Yanagizawa, 2009), internet kiosks (Goyal, 2010) and VSAT public payphones in rural isolated villages (Beuermann, 2015). These studies concentrate on market outcomes, with a specific focus on price dispersion, market performance and profitability. Overall, findings suggest that ICT caused reductions in price dispersion across markets, increased market participation and increased agricultural profitability.

Exploiting the expanded mobile coverage, health related interventions have been implemented. Under this strand of interventions, several studies have used mobile based platforms for service delivery within rigorous experimental impact evaluations. In particular, the utilization of short message services (SMS) providing health related information has been an area of active research. For example, Perron et al. (2010) show how the use of SMS improves patients' attendance to medical outpatient clinics through a reminder system, whereas Cole-Lewis and Kershaw (2010) and Dammert et al. (2014) analyze the effect of SMS on behavioral changes to disease prevention and management. Beuermann et al. (2015) showed that sending SMS with prenatal care appointment reminders and healthy practices during pregnancy had positive effects on prenatal care attendance, vitamin intake compliance during pregnancy, birth weight and APGAR scores of newborns.

In the education sector, the utilization of ICT has been rigorously evaluated within experimental designs for different alternative interventions. One type of intervention is the provision of a computer lab, with specialized software focused on math and language learning, within the school (Banerjee et al., 2007; Carrillo et al., 2010; Lai et al., 2011; Lai et al., 2012a; Lai et al., 2012b; Mo et al., 2013). This type of intervention in which guided use is present has consistently shown positive effects on students' math performance ranging between 0.12 and 0.37 standard deviations. By contrast, interventions that provided access to computers without any guided use (Barrera-Osorio and Linden, 2009; Mo et al., 2012; Cristia et al., 2012; Fairlie and Robinson, 2013; Beuermann et al., 2015) only found positive effects on digital skills but did not yield significant effects on academic achievement. Therefore, rigorous evidence is clear in suggesting that the utilization of ICT tools in education must be accompanied with specific software aligned to the curricula with a strong component of guided utilization.

The previous evidence, used variation in health and educational inputs across and within health centers and schools to identify the effectiveness of alternative interventions. However, these interventions assume that inputs are reaching the final beneficiaries. Such assumption, however, could be divorced from reality when service delivery is affected by inefficiencies and corruption. Therefore, interventions that focus on improving governance in general and governance of social services in particular can be an important complement to more traditional health center or school based interventions to increase health and educational outcomes. As a result, policies to enhance beneficiary involvement as a way to strengthen demand-responsiveness and local accountability are becoming increasingly popular.

Rigorous impact evaluations assessing the short-term effects of this type of policies have shown mixed results. Banerjee, Deaton, and Duflo (2004) evaluate a project in Rajasthan in India where a member of the community was paid to check whether the nurse-midwife assigned to the health center was present at the center. The intervention had no impact on attendance and the authors speculate that a key reason for this is that the individual community member did not manage to use his or her information on absenteeism to invoke community participation. Olken (2007) finds that grassroots participation in monitoring of a village road construction program in Indonesia had little average impact. Banerjee et al. (2010) show that a project giving local committees in

India the tools to evaluate student performance had no effect. Casey et al. (2012) evaluate an infrastructure project in Sierra Leone involving both relatively large grants and the application of processes to enhance local empowerment and participatory governance in the planning and implementation phases. While the evaluation cannot separately assess the impact of the process from the impact of the grant, they do not find any evidence that the intervention led to fundamental changes in collective action at the village level.

Duflo et al. (2012), on the other hand, find that a governance program that gave parents specific training on how to monitor and assess teachers' effort and performance in a contract-teachers program in Kenya resulted in significant improvements in learning. Reinika and Svensson (2011) find that a newspaper campaign in Uganda where systematic information to monitor local officials handling of a large education grant program was provided to schools and parents had positive effects on enrolment and learning outcomes. Björkman and Svensson (2009) find that providing users with information on health workers' performance and facilitating the development of an action plan resulted in significant improvements in both health workers' performance and health outcomes in Uganda. In a follow up study, Björkman and Svensson (2010) tested whether social heterogeneity can explain why some communities managed to push for better health service delivery, whereas others did not. The results suggest that income inequality, and particularly ethnic fractionalization, adversely impact collective action for improved service provision.

Recently, Björkman et al. (2014) evaluated long term effects of two field experiments on local accountability in primary health care in Uganda. Efforts to stimulate beneficiary control, coupled with the provision of report cards on staff performance, resulted in significant improvements in health care delivery and health outcomes in both the short and longer run. In contrast, efforts to stimulate beneficiary control without addressing users' lack of information about staff behavior had no measurable impact on the quality of care. They investigate the role of information, and provide suggestive evidence showing that informed users are better able to distinguish between the actions of health workers and factors beyond their control, and are thereby in a better position to identify and challenge misbehavior by providers.

Therefore, existing evidence suggests that: (1) Context matters for the success of public accountability programs. In particular, communities with lower levels of income inequality and ethnic fractionalization appear to have higher prospects for positive effects; and (2) the provision of updated, specific and public information regarding the behavior of service providers to service users appears to be central for the success of public accountability interventions.

To the extent of our knowledge, no rigorous experimental impact evaluation of a mobile based accountability program has been conducted. Therefore, the implementation of such impact evaluation within the PROSEB project would provide novel evidence on the effectiveness of a mobile based accountability intervention. In addition, random assignment of the program could be stratified taking into consideration community level income inequality and ethnic fragmentation in order to test for heterogeneous effects along these dimensions that have been found relevant in previous literature.

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Annex 2 - Impact Evaluation Design

1. Introduction

The objective of the Impact Evaluation (IE) is quantifying the causal effects of the Mobile Accountability Intervention to be implemented within the PROSEB program. Causal effect refers to the difference in the outcomes of interest between subjects exposed to a program and the same subjects in the situation of non-exposure to the program. Of course this is not observable as any particular subject could be either exposed or not exposed to a program. Therefore no subject could be, at the same time, in a situation of exposure and non-exposure to a particular program. As such, the objective of any IE is obtaining an unbiased estimate of this non-observable difference.

Arriving to this estimate requires careful design of the IE at the project conception. In particular, there is a need to define two alternative groups. One group where a program is implemented (or Treatment group) and another where no program is implemented (or Control group). If these alternative groups are statistically equivalent on observable and non-observable characteristics before the implementation of the program (or at Baseline); then the comparison of outcomes between these groups after program implementation will provide an unbiased estimate of the program's causal effects.

A Randomized Controlled Trial (RCT) defines these alternative groups before program's implementation randomly. That is from the target population; these two groups are randomly chosen. Therefore, randomness guarantees that both groups will be statistically equivalent. When baseline data is collected or available, this equivalence can be tested and the differences between both groups in baseline characteristics should be statistically indistinguishable from zero.

This annex describes the proposed RCT design to evaluate the effectiveness of the Mobile Accountability tools to be developed.

2. Geographical focus of the evaluation

The main objective of the evaluation is not only testing the effectiveness of the Mobile Accountability tools, but also identifying the key elements and difficulties that should be taken into account during the implementation of these tools. Therefore, the proposal focuses on a specific sample of schools that is sufficiently large in order to test the effects of the intervention; but that is also manageable for a controlled project implementation including the data collection efforts needed. Then after the evaluation is conducted, we will be able not only to assess its effectiveness but also the key implementation aspects to consider towards a potential scalability at a national level.

We propose focusing the evaluation in three specific subdivisions: Ngaliema and Nsele (located in Kinshasa) and Kamonia (located in Kasai Occidental). These subdivisions have been selected to obtain relevant sample sizes at the urban/rural levels and at the school type level (Conventional Catholic, Conventional Protestant, Other Conventional and Non-Conventional). In particular, we have formed stratas of schools using these two dimensions so that the random treatment assignment will be conducted within each strata. Table 1 below shows the size of the stratas.

Table 1: School Sample Distribution¹⁰

Regime	Rural	Urban	Total
ECC	81	44	125
ECP	126	96	222
EC_Other	59	25	84
ENC	73	27	100
Total	339	192	531

3. Intervention Groups

From these 531 schools, we propose to draw 4 randomly selected groups as follows (133 schools in each group): 1) Control Group: PROSEB will continue its implementation without the introduction of mobile accountability mechanisms; 2) G2G: The Government to Government application will be implemented. This application will allow interaction between the Education Ministry and the school level authorities (Principals, Teachers and Parents' Representatives); 3) G2G + P2G: In addition to the Government to Government application, we will also implement the People to Government module which will provide a direct communication channel between any parent or interested agent and the upper level authorities (channelled through the provincial back-offices); 4) G2G + P2G + Training: In addition to both applications, we will provide face to face training to parents on how to use the P2G application effectively. In particular, the mission team identified that many parents (especially in rural areas) are not used to send SMS. Therefore, as the effective utilization of the application to be developed is highly correlated with such skills, the provision of training could be an effective way to boost utilization.

This design will allow rigorous evaluation of the different applications to be developed and will also test the effectiveness of training. However, in order to test for equivalence between these groups before the intervention is conducted, we need characteristics that had been previously collected at the school or student level. We describe the datasets to be used for this purpose in the next section.

4. Baseline Data

In terms of baseline data, we propose the utilization of the database collected by the statistics office at the Ministry of Education for the 2012/2013 and 2013/2014 academic years. These datasets contain school location, basic services, number of students, number of teachers, number of books and school infrastructure for each academic year. During the mission, the team was granted access to these databases allowing for initial analyses and mapping a significant number of schools across the country.

Using the 2012/2013 database, Table 2 below shows summary statistics for primary schools of the entire country as well as schools located within the proposed sub-divisions for the evaluation.

¹⁰ ECC: Conventional Catholic Schools. ECP: Conventional Protestant Schools. EC_Other: Other Conventional Schools. ENC: Non-Conventional Schools.

Table 2: Primary Schools Summary Statistics 2012/2013

Variable	RDC	Sample	Kamonia	Ngaliema	Nsele
Ecoles	32,612	531	196	111	224
% Electricity	0.04	0.17	0.01	0.39	0.16
% Point eau	0.42	0.37	0.01	0.59	0.49
% Latrines	0.88	0.86	0.98	0.91	0.74
% Cloture	0.60	0.43	0.63	0.50	0.27
% Rural	0.90	0.64	1.00	0.04	0.62
Eleves	297.42	284.69	270.25	347.59	259.88
% Females	0.46	0.46	0.40	0.51	0.48
Enseignants	7.73	8.04	6.73	10.53	7.52
% Females	0.25	0.29	0.12	0.43	0.33
Elev/Enseig	37.33	35.96	41.13	32.83	34.35
Elev/Francais	3.62	3.53	3.37	2.04	4.42
Elev/Maths	3.95	4.34	4.42	2.86	5.07

There are 32,612 primary schools in the Democratic Republic of Congo. Of these, only 4% report having electricity and 90% are rural. On average, each school enrolls near 300 students with 46% being females. Each school has an average close to 8 teachers with only 25% being females. There are on average 37 students per each teacher. Approximately there are 4 students per each Mathematics book and 3.6 students per each French book. Table 2 also shows the characteristics for the targeted sample of the IE (column 2). The rest of the columns show the characteristics for each of the sub-divisions selected for the IE. Kamonia is an entirely rural region, Ngaliema is almost entirely urban (only 4% of schools are rural), and Nsele shows a mix between urban and rural (62% rural and 38% urban). Therefore, the selected sub-divisions will provide results for different settings which are useful in order to test how context matters for the effectiveness of the intervention.

In addition, we propose measuring baseline academic achievement with the 2014 and 2015 6th grade exam results. These are national standardized tests that will be useful to test for baseline balance between treatment and control groups. These results are available in hard copy and will need to be digitalized.

Primary data collection will be needed to gather the following information from parents: mobile phone numbers, education level, literacy status, household income, labor supply, household size, and ethnicity. Mobile phones are needed for the groups where the P2G module will be implemented as the team will need to contact parents directly to enable access to the platform. The rest of information would need to be ideally collected from all the groups (including the control group). It is suggested to implement a quick household survey to 60 parents per school (10 parents for each primary school grade). The relevance of the household level data is that it will provide the opportunity to assess differential treatment effects according to baseline level of parental education, income inequality at the school level and ethnic fragmentation. Characteristics that have been found to be extremely relevant within the context of related IE in African countries.

5. Outcomes of Interest - Final Data Collection

Once the program is implemented in the proposed randomly selected groups of schools, we will need to collect the outcomes of interest to be evaluated. Therefore, the team proposes the measurement of outcomes at the school level and at the student level as follows:

1) School level outcomes: Distribution and effective reception of books/teacher's manuals, effective utilization of books/teacher's manuals, whether books are in good shape, students to book ratio (measures whether there are enough books), teacher absenteeism, student absenteeism. We propose collecting these outcomes with a school level observation to be undertaken in a randomly selected day after project

implementation. In addition this could be complemented with the yearly statistics data collected by the Ministry of Education.

2) Student level outcomes: This category aims measuring academic achievement. We propose developing and implementing French, Math and Cognitive ability tests to students that will attend 5th and 6th grades in the 2015/2016 academic year. These tests should be administered at the end of this academic year. In addition, we also suggest complementing the evaluation with the 2016 6th grade exam results implemented by the Ministry of Education. Notice that the utilization of these outcomes is based on the assumption that the mobile accountability tools and training components will enter into full and effective operation on January 2016. However, if such implementation is delayed, then the evaluation should be delayed in the same way. All outcomes of interest for the evaluation should be collected at least after 6 months of full and effective operation of the mobile accountability tools and the training provision.

Annex 4: Draft project timeline

Month	Oct 15	Nov 15	Dec 15	Jan 16	Feb 16	Mar 16	Apr 16	May 16	Jun 16	Jul 16	Aug 16	Sep 16	Oct 16	Nov 16	Dec 16	Jan 17	Feb 17	Mar 17	Apr 17	May 17	Jun 17	
Activities																						
Baseline Data collection																						
Operational work at the local level –capacity building among local users (parents and teachers) of the ICT platform and of mobile telephones for voice activated messaging																						
Training of local ICT for accountability anchors																						
Creation of the national platform																						
Training of national communication/ICT team for data collection and feedback coordination																						
Information campaign, pilot implementation																						
Assessment of preliminary outcomes, corrective actions																						
Second adjusted pilot																						
Endline data collection																						
Data analysis, report writing																						
Information collection about governance and accountability in private schools																						
Qualitative report																						
Overall Policy Outcomes report/Platform,																						
Dissemination of results																						