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ID4D

Country Diagnostic: Côte d'Ivoire



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About ID4D

The World Bank Group's Identification for Development (ID4D) initiative uses global knowledge and expertise across sectors to help countries realize the transformational potential of digital identification systems to achieve the Sustainable Development Goals. It operates across the World Bank Group with global practices and units working on digital development, social protection, health, financial inclusion, governance, gender, and legal, among others.

The mission of ID4D is to enable all people to access services and exercise their rights, by increasing the number of people who have an official form of identification. ID4D makes this happen through its three pillars of work: thought leadership and analytics to generate evidence and fill knowledge gaps; global platforms and convening to amplify good practices, collaborate, and raise awareness; and country and regional engagement to provide financial and technical assistance for the implementation of robust, inclusive, and responsible digital identification systems that are integrated with civil registration.

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To find out more about ID4D, visit worldbank.org/id4d.

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1. Introduction

Motivation

Identification schemes are key enablers for more efficient and effective delivery of basic public services, such as health, education, and social protection programs. The latter rely on knowledge of the population within socioeconomic surveys to target the poor and establish eligibility for participation as beneficiaries. Without an inclusive, robust and easy to integrate identification framework, programs risk missing important segments of the population that need the assistance most—the poor and the vulnerable—and they often become susceptible to leakages and fraud, which render them less accountable and effective. As a consequence, developing an identification system that scores well on fitness indicators and using it as a basis for administration of social protection and other public service programs is a high priority for many developing nations.

The need in Côte d'Ivoire for such systems is concrete and immediate as the country, through World Bank support, is embarking on a project designed to lay the foundations and initiate implementation of a national social safety net system for promoting poverty reduction. This project is financed by an IDA credit in the amount of USD 50 million and will be implemented over a five year period, from 2015–2020. It is intended to support the government's poverty reduction and growth objectives in line with its National Development Plan (NDP) for 2012–2015 and its new National Social Protection Strategy (NSPS), adopted May 2014. The project is entitled *Productive Social Safety Net Project*, but we shall refer to it henceforth in this report simply as the WB Project.

For its function, the WB Project requires the creation of a unified administrative delivery system (e.g., identification scheme with unique ID numbers and eligibility criteria and targeting methods) supported by a suitable management information system (MIS). Today, Cote d'Ivoire does not have a system of noncontributory safety net programs which routinely collects information on poor households in a single, unified household database, targets interventions systematically in a clear and transparent manner using well-defined eligibility criteria, or delivers income support or productive benefits to the extreme poor for supporting consumption and, in the long-term, improving living conditions. Once the requisite systems are in place, in due course of the WB project, it is expected that other programs, will rely on the resulting data and delivery instruments for their needs.

World Bank mission

In order to address the question of what identification system and what identifiers could be used to support the needs of the WB Project for managing the identity of beneficiaries, a short World Bank identity assessment mission (5 days) took place May 25–29, in Abidjan. The terms of reference for the Mission contained three objectives:

1. Develop an overview of the state of the identity ecosystem in Côte d'Ivoire by applying the World Bank Identity Systems Assessment (ISA) tool.
2. Develop an operational plan for identifying beneficiaries of the WB Project that could also lay the foundation for a social register of utility to all programs in the social sector in the future.
3. Provide guidance as to how the identity ecosystem in the country could potentially be harmonized to promote the emergence of robust identity practices that could serve the needs of all and not just the social sector.

While the Mission was primarily driven by immediate social protection needs, it took into account some longer term issues. In other words it assessed also whether Côte d'Ivoire has a foundational identification system that can empower people to exercise their rights, claim their benefits in an inclusive manner, and participate in the economic growth brought about by the fruits of socioeconomic development.

High level findings

The Mission conducted dialogue with representatives of all the identity stakeholders in the country, both on the supply as well as on the demand side (to a lesser extent). On the supply side, we note that the country has several institutions that are mandated to deal with certain aspects of identification and that have developed what could be termed identity assets. Those assets could be leveraged to provide some of the desired identification capabilities. Nevertheless, the overall identification ecosystem remains non-robust, highly fragmented, and lacks coverage of the population. It requires a series of coordinated measures and policy changes for reforming it to meet the expected needs, as we present in this report. Equally important, our conclusions were that the current WB Project cannot rely on any existing identification system because of low accessibility by the targeted population. Instead the Project would have to develop its own functional enrollment, as it could not wait for the emergence of the necessary foundational identity systems, as we explain in detail in this report. Luckily this can be done in such a way as to allow the linkage of these identities with the foundational identity when its coverage reaches the population concerned.

In general, while identity is a sensitive subject, the Mission was welcomed with enthusiasm and interest by all parties and government agencies interviewed. There was openness, desire to collaborate with one another and a recognition that the country is in need to reinforce its identification practices. Repeatedly we were told many forums had been conducted to discuss the state of the identification schemes in the country, but that Côte d'Ivoire lacked knowledge of the international experience in this area that would allow it to develop a unified national identification strategy to address the shortcomings. As such the Mission was welcomed uniformly because of the potential Technical Assistance that could be made available to the country as a consequence of this assessment.

Organization of the report

The report is organized into the following sections:

- Section II: Presents the approach and methodology of the evaluation used. It gives an overview of the Identification Systems Analysis (ISA).
- Section III: Gives a detailed description of the Identity ecosystem in Côte d'Ivoire. It examines all the identification schemes that were considered of primary importance by the Mission and that were part of the interviews conducted. Where enough data was collected, the ISA analysis is performed and the color coded score is presented.
- Section IV: Presents a series of recommendations to address the identification needs of the WB Project but also for improving the identification practices in the country in general. Those recommendations are based on the extensive experience that the World Bank ISA team has had in the course of applying the tool in similar environments.

In addition to these primary sections, the report contains four annexes:

- Annex 1: Presents the scoring methodology of ISA.
- Annex 2: Provides a brief history of identification regulations in Côte d'Ivoire. It is meant to give some legal context to the identification schemes currently in place.

- Annex 3: Discusses how the foundation of current identity schemes (national identity card and the voter register) were dictated by the Peace Accord of Ouagadougou, and what role identity played in the conflict and the exit from that period.
- Annex 4: Is a detailed overview of the important law on privacy. The so called Law No. 2013-450 related to the protection of personally identifying information, which was adopted in 2013 and is currently being enforced systematically. This is the Côte d'Ivoire adaptation of the ECOWAS law on data protection and it represents a very significant body of codified legislation. We present it in detail as it could be used as a model by other developing countries.

2. Approach and methodology

The tool: Identification Systems Analysis (ISA)

When it comes to identification, countries almost never start from a ‘green-field’ situation; instead they begin with assets that are currently in place which are then reinforced and harmonized to create a foundational identification scheme where each individual is known in some register, attributed a unique identifying number (UIN), and empowered to prove who they are officially through a credential in the form of an ID card or an online identity verification service. Having identity credentials simplifies the interaction between the citizen and the state by removing the burden of proof of identity each time individuals request services. It essentially creates a uniform service delivery platform tied to a unique identifier (Unique ID) that will accompany each individual, in ideal circumstances from cradle to grave.

Given the importance of the Unique ID for program implementation, it is essential to have a complete understanding of the existing assets that can potentially be utilized in a harmonized identification framework in the country. The World Bank has developed a tool called the *Identification Systems Analysis* (ISA) which responds to this need and has been used already in several countries since it was created in 2014. Originally, the tool was developed to help governments improve their ability to identify individuals and, in particular, potential and actual beneficiaries of social protection, health, and other programs that require robust identification.

The tool is used to map relevant identification systems in the country with the objective of determining how to harmonize and utilize them as part of a general-purpose identification scheme that can deliver to the needs of diverse programs. The analysis focuses on issues of accessibility, robustness and integration (see What Matters in Identity box) in addition to the legal framework. Accessibility or inclusiveness relates to the costs and barriers that exist, especially for the poor, in obtaining proof of identity that can be used for various purposes including participating in social programs. A robust form of identification is one that is difficult to falsify and that can be used to verify transactions such as government to person payment (G2P). In addition, the ability to cross-check and link different databases to make government more efficient while maintaining safeguards on privacy and data access is a key functionality captured in the concept of integration. An appropriate legal framework and safeguards for issues of privacy and personal data protection are also crucial to a well-functioning identification system and are examined by the ISA tool.

What matters in identity

As discussed in detail in the What Matters section of the ISA tool (available from the World Bank), there are four elements that are critical for assessing the health of an identification scheme. These are

Accessibility

Evaluates the extent of coverage of the ID of the entire population, how accessible it is to the individual, how costly and what barriers may be encountered by any individual or groups. In this regard, the best ID system is one that is universally available to every individual at a negligible cost.

Robustness

Assesses how resilient the system is to fraud (uniqueness of identity), duplication of credentials and security breaches; and whether the ID is a system within a framework of trust to verify or authenticate identity at the time of use.

Integration

Assesses the interoperability of the identity across multiple applications and the extensiveness of the links between identity registers.

Legal Framework

Evaluates how developed the country's laws are regarding privacy, data protection and protection of individual rights. It also takes into account capacity of responsible organizations and compliance with pertinent international standards.

In the evaluation, each factor is color coded according to the criteria shown in the reference matrix in Annex 1.

Types of identity assets covered by the ISA

In general there are three types of assets that are examined as part of the ISA process. These include:

- 1. Population Points of Contact (PPOC):** Permanent or mobile locations where the administration and the population interact. These are a prerequisite for enrollment of identity, so that high coverage can be achieved, but also for updates of vital information.
- 2. Identity registers:** Identity databases that contain core identifying data such as name, date of birth, place of birth, lineage, biometric data, etc. A country normally employs three types of foundational (general-purpose) registers in addition to multiple functional (program specific) registers as given in Table 1 (with the first three in the table foundational, and the last three functional).
- 3. Authentication mechanisms:** For an identity system to be relied upon for program service delivery, there needs to be mechanisms to ensure that the person identified is who he or she claims to be at the time of service delivery. This is often built in the form of something the person has (a secure ID card), something they know (a PIN or password) or something they are (biometric). It requires the presence of mechanisms at a point of service to perform authentication (e.g., point of service terminals with biometric verification such as fingerprint readers).

Table 1. The Range of Registers Containing Identification Data Typically Encountered in Countries

The top three are considered foundational (general purpose) while the last three are functional (constructed in response to a specific application).

Civil Registration for Births and Deaths	Records all birth and death events that occur in the country as well as foreign missions. No exceptions, each life event is captured. This is often a legal instrument resulting in a birth or death certificate.
National Population Register (NPR)	Register of every unique individual that has the right to reside in the country (citizens, adults, children, resident foreigners, diaspora, and refugees) and their localization (address). There are many variants of the NPR depending on what information beyond the core identity data is included. Among the variants we recognize: <ul style="list-style-type: none"> ▪ Household Register (HHR), ▪ Family Register (FR). ▪ Individual National Population Register (INPR). This is considered an administrative instrument, although often there are many laws that govern its composition and purpose.
National Identity Card Register	This is the register of people that hold a national identity card and that can assert their binding rights legally (e.g., adult citizens). They are often given a credential or a certificate, digital or otherwise, that allows them to transact and be recognized as a legal entity bestowed with rights and that can be subject to the full weight of the civil and criminal laws.
Electoral Rolls	These are often closely linked with the national identity card and are used to ensure only those eligible to vote are able to exercise that right during elections.
Social Protection Program Specific Beneficiaries List	These could include cash transfer beneficiaries, guaranteed work programs, and other forms of social safety targeting categorical (elderly, disabled, widows) or geographic segments of the population.
Health Registers	Covering national health insurance funds including participatory or universal coverage schemes.

3. The identity ecosystem in Côte d'Ivoire

The identity stakeholders in the country

There are several organizations that have over the years developed points of contacts with the population, built registers and put in place identification systems. A list of entities that we consider as core stakeholders in the identity ecosystem in the country is given in Table 2. Those entities were interviewed as part of this Mission, in addition to others on the commercial and demand side.

Table 2. The Major Supply-Side Identity Stakeholders in Côte d'Ivoire and Their Assets and Roles

Institution	Role/Asset
Office National de l'Identification (ONI)	<p>The national body that is tasked with the general identification of the population. It is part of the Ministry of Interior and Security. It was established through Decree No. 2001-103 of 15 February 2001 with headquarters in Abidjan-Plateau. The organization of the ONI was amended by Decree No. 2004-28 of 15 January 2004 (See Annex 2 for an overview of the laws that empower it). Its current mission is:</p> <ul style="list-style-type: none"> ▪ The implementation of policy of civil registration in conjunction with the officers, agents of the civil registry and judicial authorities. ▪ The identification of the population living in Côte d'Ivoire. ▪ Monitoring immigration and emigration of people. <p>It is the organization tasked with the delivery of identity credentials to nationals and foreign residents and refugees. It produces several deliverables, among them: the National identity card, the attestation of identity, resident card and temporary residence permits.</p> <p>Assets include:</p> <ul style="list-style-type: none"> ▪ Identity and biometric register of 6.5 million adults 16 years and older. ▪ About 150 enrollment centers throughout the country.
Commission Electorale Indépendante (CEI)	<p>The organization that owns the electoral register, which contains about 5.7 million identities of adults 18 years and older (voting age).</p>
Caisse Nationale d'Assurance Maladie (CNAM)	<p>The organization tasked with implementing the Universal Health Coverage. Enrollment is mandatory but it has not begun yet in any significant way.</p> <p>Assets include:</p> <ul style="list-style-type: none"> ▪ Insignificant database today, but has tremendous potential. ▪ Clear plan and mandate to enroll 11 million people over the next 7 years. ▪ 60 centers for enrollment throughout the country. ▪ 400 mobile kits that can be used for mobile campaigns.

(continued)

Table 2. Continued

Institution	Role/Asset
Direction Générale de l'Administration du territoire (DGAT)	<p>The directorate under the Ministry of Interior and Security that is tasked with affecting the civil registration processes locally throughout the country.</p> <ul style="list-style-type: none"> ▪ Approximately 427 centers throughout the country where civil registration could be affected. ▪ An unspecified number of paper registers throughout the bureaus (hundreds of thousands of volumes).
Regulatory Authority for Telecommunications/ICT (ARTCI)	<p>The important body that is tasked with implementing the provisions of the data protection and privacy Law No. 2013-450. See Annex 4.</p>
Ministry of Transport	<p>The body tasked with the issuance of driver's licenses.</p> <ul style="list-style-type: none"> ▪ Has issued thus far 240,000 driver's licenses through a PPP arrangement with a company called QUIPUX. ▪ Runs 22 enrollment and drivers' license production centers called CGI (Centre de Gestion Intégrée).
Border Police	<p>The body responsible for biometric passports in the country.</p> <ul style="list-style-type: none"> ▪ Has issued thus far (since 2008) about 600,000 biometric passports at the price of 40,000 francs per passport. ▪ Operated as a PPP partnership with a local company called SNEDAI (<i>Société Nationale d'Édition de Documents Administratif et d'Identification</i>) that partners with Zetes from Belgium for the technology and solution needs.

The challenge

Before describing in detail the identity ecosystem in the country, it is important to keep in mind that the existing identification systems in Côte d'Ivoire face fundamental structural challenges as a result of the deep and prolonged periods of crisis that followed the military coup d'état in 1999, which saw the country divided in two in 2002, and the crisis post the 2010 elections. In fact, the question of identification and identity was a source of conflict. At the onset of the crisis, it was estimated that more than a quarter of the population lacked effective proof of nationality and were not known in any official registers. This fueled conflict over the legitimacy of voting rights of large segments of the population.

The tragic events that ensued made things worse for the already fragile identification ecosystem. It led to the destruction of some identification records, massive internal and external displacement of the population fleeing the conflict, weakening of civil registration institutions, and a profound negative impact on citizen engagement and participation in state functions (such as birth registration), especially in rural areas (which represent nearly half of the country). Today it is believed that 3 out of 10 births in rural areas still go undeclared (according to UNICEF), and that over 750,000 people live in Côte d'Ivoire without a recognized nationality (according to UNHCR).

It is therefore safe to say that the identity assets that can be found in Côte d'Ivoire today were developed over the last 5–8 years.

The identification schemes

The current identity ecosystem in the country is far from ideal. At a macro level, Côte d'Ivoire does not have some of the important registers (as listed in Table 1) that are necessary for development. For example the country does not have a national population register (NPR), nor a household register or a social register (where the poor and vulnerable and potential beneficiaries of social protection and safety net programs are listed).

In addition the registers that do exist suffer from some challenges, which as we explained above are the lingering consequences of prolonged periods of conflict. Nevertheless, currently in circulation there are several identity documents that are used for identification, some of them are backed by registers (on paper) and some are backed by electronic registers. In both cases the coverage is limited.

Next we give an overview of each along with our ISA assessment where applicable.

The civil register

- Birth and death declarations in Côte d'Ivoire have been mandatory by law since 1964,¹ however generally speaking the population does not have the reflex to declare, so compliance has been less than ideal.
- The institution tasked with civil registration (DGAT) lacks the capacity and the capillarity of the points of contact with the population. It only has 427 civil registration bureaus. This amounts to a coverage ratio of 60,000:1, which means each center serves a community of about 60,000 people. International experience shows that this is an unacceptable ratio. Compare that with 5000:1 in Rwanda, 15000:1 in Morocco, and 8000:1 in Peru.

Evidence of weak coverage from a recent campaign

In a campaign that ended March 31, 2015, ONI promoted the adoption of the national identity card through mobile enrollment. The campaign ended up attracting 150,000 individuals. Within that population:

35% were not known anywhere in any civil register;

3% came from areas where the civil register was totally destroyed;

43.5% had only a copy of their birth registration but no other supporting documentation to prove authenticity of their claimed identity; and

18% only had the copy of their birth registration along with all the necessary supporting documentations required to prove they are who they claim to be.

These statistics were also reported to the media in a recent press conference and can be retrieved in raw form at <http://infosnews.net/?p=711>.

1 The civil registration is governed by law no 64-374 of 7 October 1964 which was modified by law 83-799 of 2 August 1983.

- As a consequence, registration of new birth continues to be relatively low. It is our understanding that it is around 55% nationally (with 79% in urban and 41% in rural areas). This is according to UNICEF data, which was presented to the DGAT officials during the Mission and was not disputed. No specific data was discussed relative to death registration but it was agreed that it was significantly lower.
- Data continues to be recorded manually on paper, which makes the register not portable.
- Data is not centralized and aggregated, as it remains where it was recorded. Registration takes place in two copies, one stays in the local civil registration bureau and the other is given to the local court.

Reconstituting the civil register

As a result of conflict, bad conservation (paper based system in a highly humid and hot environment), heavy use, and fire, the Mission was told that a number of civil register volumes were destroyed. As part of the Peace Accord of Ouagadougou (see Annex 3), the country made a certain commitment to reconstitute the civil register. The plan was to resort to two approaches:

1. In some places, where only one copy of the civil register volume was destroyed, the other copy typically kept at the local court could be retrieved and used.
2. If both copies were destroyed, the plan was to call upon the population to bring forth old copies of their registration act or birth certificates that they may have in their possession, which could be used to rebuild missing portions of the civil register.

Both of these measures were used first in order to try to reconstitute the civil register. But when both measures failed, the last resort was to pass through the mobile courts, which were set up throughout the country, in order to issue court declarations (supplementary judgments) to replace birth certificates (i.e. substitute birth certificates issued per court judgment) for those who were never registered in the civil registry or whose records were destroyed. This mechanism is considered a last resort for the last category because of the cost and effort involved. For example, the cost of substitute birth certificates was estimated to be as much as \$15 per person and that in one campaign the process was used to create 700,000 replacement certificates through mobile courts set up right after the Ouagadougou Accord. It is not clear how many registrations were affected through this mechanism but the net result is that about 40% of adults today (16 and over) do not exist in any volume of the civil register either because they were never registered in the first place or their records were destroyed. This data comes from the 150,000 person sample that ONI had disclosed (see earlier box).

- Prior to the 2010 elections, the country embarked on a project called MECCI (Modernisation de l'Etat Civil de Côte d'Ivoire) intended to migrate the civil register to electronic registration and to digitize the paper records. For all practical intents and purposes, the project was put on hold during the post-electoral conflict in 2011 and while it has not been officially terminated, it has not advanced in any of its objectives due to lack of resources, financial and capacity.
- Currently there is no credible plan to migrate from paper to electronic form.
- It is important to point out that ONI has a department called *Le Département de l'Etat Civil et de l'Identification* (DECI). It is not the body tasked with the actual registration, since that is kept with the municipal authorities working with DGAT. The DECI is supposed to be the organization that would develop a centralized register based on the decentralized paper registers scattered throughout the country. It is our understanding that DECI does not have the funds to affect this task.
- No statistics seem to exist relative to the cumulative total number of birth registration records in the country or the total number of paper volumes of the civil register. We understood that DGAT was in the process of conducting a survey, as part of its efforts to assess the size of the task required

in the reconstitution of the civil register. At best this is a work in progress with no available data to share yet.

- The law for birth registration used to require registration within 2 weeks. That was deemed too short. It was later amended and now it stands at 3 months. But according to the DGAT officials we interviewed, the extension to 3 months has not made a significant difference in rate of declarations.
- While the registration of birth is free if done within the legal delay period (3 months), getting a copy of the birth registration act requires an administrative stamp that costs 500 FCFA (about 80 US cents). This is insignificant compared to the cost required to get a court judgment in order to affect delayed registration and obtain a birth certificate.

Based on the fact pattern above we can provide the following for the three main ISA indicators (Table 3):

Table 3. Performance of the Civil Register in the Three Main Indicators of ISA (color coded from red with major concern, to orange, to yellow and finally green representing a system that meets or exceeds best practices in all aspects)

As can be seen there are two areas of major concern and one area where integration is promising but there is still significant room for improvement.

Indicator	Score	Main Justification
Accessibility	Red	Contains significant gaps, not portable (requires people to go to the office where they were first registered which creates barriers to accessibility), overall relatively low registration rates, estimated 40% of adults are not anywhere in any register.
Robustness	Red	Paper based, not a secure document, no authentication or verification mechanisms in operation. Too many manual steps with humans in the loop and no robust accountability which could make it susceptible to petty corruption.
Integration	Yellow	Almost every application requires a copy of the birth registration act. Unfortunately since it does not have mechanisms for electronic verification, the integration is the old fashioned way, where an individual has to present their paper copy.

The certificate of nationality

- This is an important judicial foundational document (Figure 1) without which, very little administrative files could be constituted. It is applied for at the Court of First Instance and is signed by a judge. It requires the submission of a copy of a birth registration act and the identity card or a copy of a birth registration act of the father and/or the mother.
- The process costs 3150 FCFA in fees (2500 FCFA for printing, 500 FCFA for an administrative stamp, and 150 FCFA for an application form; this does not include the scribes that charge for their services). This is a significant cost for the poor, as it is equivalent to a full week (7 day) earnings of a poor person.
- This is a paper document that is supposed to be secured through official stamps, seals and watermarks. The Mission was not able to assess the security features of the document.
- No centralized database of these documents is kept. Each court keeps records of their own issued certificates. Hence there is no electronic register that can be used to verify information.

This document scores very similarly to that of the birth certificate and the civil register (Table 4). In fact it may be worse in terms of accessibility since it is costly.

Figure 1: Example of Certificate of Nationality Issued by a Court in Côte d'Ivoire



Table 4. Performance of the Certificate of Nationality under the ISA Main Indicators

Indicator	Score	Main Justification
Accessibility	Red	Costly, administratively difficult to get.
Robustness	Red	Paper based, not a secure document, no authentication or verification mechanisms in operation. Too many manual steps with humans in the loop and no robust accountability which could make it susceptible to petty corruption.
Integration	Yellow	No electronic register. The document is used as an alternative to birth certificates

The National Identity Card (NIC) and the Attestation of Identity Document

- The national identity card in Côte d'Ivoire (Figure 2) is the main form of identification relied upon by the population for their daily identification needs. It was put in place as part of the Ouagadougou Peace Accord (See Annex 3). At the time a mass biometric enrollment of the population was conducted which resulted in about 6 million registered identities of adults of 16 years and older.
- The production of the ID card was halted in 2010 and did not resume until July 2014. During this period ONI issued what is called *Attestation of Identity Document*, a simple letter on paper (see

Figure 3), which was used to address the identification needs in the interim. This document is still accepted as a base document in several programs (including that of the CNAM).

- Since resumption of NIC production about a year ago, 380,000 cards were produced for people who had not had any before, and about 120,000 replacements for lost and damaged cards were issued.
- Today the National Identity Card Register stands at 6.38 million unique records. But there is no guarantee that all these individuals continue to be alive. It is natural to expect that over a period of 5 years a significant number of deaths have occurred.

Figure 2: The National Identity Card in Côte d'Ivoire (front and back)

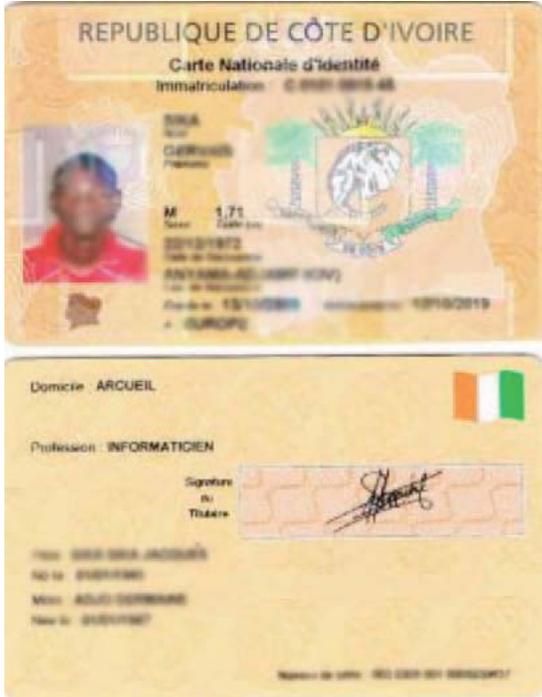


Figure 3: The Attestation of Identity Document That Was Used during the Period Where the ID Card Production Was Halted



- The coverage of NIC is not high. Within the segment of the population entitled to have it (age 16 and older) the total potential target population, according to INS (Institut National de la Statistique) (which the Mission interviewed as well), is about 10 million living individuals. This means, at best, coverage of the NIC is about 64% today within its targeted segment and as a universal identifier (out of the total population of all age groups 22,671,331 according to INS 2014 census) it has a 28% coverage.
- Cost of National ID card: Today NIC is not free, unlike before 2010. The card itself costs 5000 FCFA to the applicant. But that is not the entire cost. It is estimated that it takes 10,000–13,000 FCFA in out-of-pocket expenses to get it, counting the cost of obtaining the supporting documents and transportation. This is equivalent to about \$17–\$20, which is a huge barrier for poor people (equivalent of one month income for a poor person).
- Information printed on front of the card includes: identity card number, name, family name, frontal photo, date of birth, place of birth, gender, height, date of issuance, date of last validity (10 year expiration).
- Information printed on back of the card includes: residence address, profession, signature, name of father and mother and their dates of birth. Serial number of card stock.
- Base breeder documents: There are two documents required to obtain a National Identity Card
 - a. Copy of the birth registration act (or court judgment for those not registered) and
 - b. The certificate of nationality.
- While no official statistics were shared with the Mission, we were informed that the coverage is biased towards urban and that rural coverage is worse.
- There are 150 enrollment centers around the country. In addition ONI has started conducting mobile enrollment campaigns to help increase uptake of the card.
- Biometric enrollment: The enrollment process captures 10 fingerprints (done one at a time, and not using the 4-4-2 standard now commonly used internationally) and a face photograph. Uniqueness is assured through a biometric de-duplication process using a state of the art AFIS which is owned by ONI (supplied by Safran Morpho).
- Security Features: The card is a contactless 8K smart card, on which two fingers are stored in memory along with other biographic information. The data is signed with a proprietary vendor provided encryption mechanism (not a national certificate authority).
- No electronic authentication has ever been done using this card, nor is there any web service run by ONI to allow others to authenticate the information online or the identity information by consulting directly the ONI database.
- Fraud: While we believe the card is reasonably secure as a document there is an after market for lost and stolen cards. This is because there is no way to deactivate these cards. They remain in circulation and make their way to an illegal market. The seller simply finds a card with the closest facial resemblance to a buyer.
- Delay in issuance: Officially it takes 1 month from application to issuance. But in reality and according to the statistics of ONI the delay is between 2–3 months. It takes this long because the basic documents used are checked manually against the records of the court and of the local civil registration bureau (a person is sent to consult the records).
- Update of information: It is important to emphasize that the Register of the National Identity Card does not have mechanisms to allow people to update their information. In fact, there is no law that requires update of the information printed on the card. As a consequence residence, profession and name changes are not reflected on the card until it is reissued upon expiration and renewal. No cards have yet expired in the country (10 year validity).
- The National Identity Card Number is 10 digits which codes for the center where it was applied for and is sequential beyond that. It does not contain any hash or control digits to protect against errors

Table 5. Performance of the National Identity Card under the ISA Main Indicators

Indicator	Score	Main Justification
Accessibility		<p>Cost, complex base documentation. Low capillarity for enrollment centers.</p> <p>Result in low coverage (28% of total population and 64% of adults 16 years and older have it).</p> <p>Rural and poor significantly lower coverage.</p>
Robustness		<p>Enrollment is biometric-based.</p> <p>Validation of the base documents takes place manually against the court and civil register records to ensure that the documents are not falsified.</p> <p>Reasonable security features for the credential.</p> <p>No authentication of identity against the card.</p>
Integration		<p>Many interactions between the citizen and the government require the national identity card. It is also required for commercial transactions. Unfortunately there are no electronic services that access the identity card register. As a consequence integration is short from ideal.</p>

in data entry or to check if a number is actually valid. In general the NIC number does not play the role of the Unique Identification Number (UIN) that could be used for all administrative purposes to identify individuals uniquely and provide holistic views of them by linking different government databases. This number, while printed on the face of the card, is ignored by the citizens and is not used as the unique identifier.

- We should point out that the NIC is issued only to citizens. Resident aliens are issued a similar but distinct document by ONI. We understand that there have been about 500,000 resident cards issued thus far.

Based on the fact pattern above we can provide the following for the three main ISA indicators (Table 5).

The electoral register and voter identity cards

- Côte d'Ivoire does not have a long history with computerized electoral registers. The first time it had one was in 2010 when a mass biometric enrollment for the national identity card was performed. Back then the register for the NIC and the electoral register were one and the same (except the electoral register only kept those 18 years and older).
- While they started the same, currently they are becoming different and distinct. ONI has maintained its identity card register and has added to it another 500,000 entries (380,000 new ones). Those updates have not been communicated to CEI (the election commission). Nor is there any plan to do so.
- Back in 2010, 5.7 million voter cards (Figure 4) were personalized and printed on cardboard paper. These cards were not intended to be used as general identification documents. They were required to be presented at the polling station where an elections officer verified that the photo along with the identity information matched what was printed on the local voter roster, before someone was allowed to proceed to cast their vote.
- The country has gone through the process of updating its voter register in preparation for the October 2015 elections. This raises an interesting development. From what we could ascertain the update process is independent of the updates to the National Identity Card Register kept by ONI. It means that for the first time there will be two different registers of significantly overlapping

Figure 4: Voter Card from the 2010 Elections



populations. We view the decoupling of the two registers as a lost opportunity for trying to reinforce and keep up to date a national register from which the voter lists could be derived.

- In order to be added to the voter register a person needs to provide *either* the National Identity Card or their certificate of nationality.
- Temporary enrollment centers are being set up in variety of places around the country to deal with the update exercise. As mentioned earlier there are no plans to communicate information back to ONI.
- This identification system was not subjected to ISA since it is not considered an ID system used by the population, and the register will remain isolated and used for the purpose of the upcoming election only.

The identification system of the CNAM: Universal health coverage

- In 2014, Côte d'Ivoire adopted an obligatory universal health coverage scheme which is intended to provide coverage of every single person in the country in the long term.
- This is a contributory scheme, designed to be rolled out in phases. In the first phase the intent is to enroll the employees of the formal sector and their families, a population estimated at 4 million individuals. The intent was to complete the enrollment of this phase by the end of 2015. Today only a few thousand people have enrolled as the reception of the system has been less than enthusiastic; it obliges people to make mandatory contributions to be part of this national health coverage plan. It is unlikely 4 million individuals would be enrolled by end of 2015.
- The second phase was supposed to target the informal sector, while the third phase would attempt to cover the poor. For the latter category, the government is supposed to make contributions on their behalf. But this poses a fundamental problem since there is no register for the poor (social register) in existence today, so such phase of enrollment could not be started until there is a social register in existence.
- Combining the three phases, the plan is to enroll 11 million people over the next 7 years.
- The CNAM has already opened 54 enrollment centers throughout the country in order to capture identity data including biographic and biometric information filled in first by the applicant on a paper application form (Figure 6) and then entered electronically into the system by the operator along with biometric data.
- The biometric data consists of 10 fingers, enrolled two at a time. A face portrait is also captured for printing on the card. The fingers are used to deduplicate using an AFIS.

Figure 5: The Universal Health Care Card (front and back) Featuring High Security and Innovation for Authentication through Optical 2D Bar Code (image courtesy of vendor supplier Zetes)



- Enrollment of children: The plan is to enroll the fingerprints starting at 12 years old. For children below 12 they would be enrolled using the fingerprints of a parent or guardian. This enrollment would be repeated for each child. So for a parent with 5 children, their fingerprints would be enrolled 5 times.
- What is significant about the CNAM ID system is that it is the only one in the country that will be obligatory and would include everyone (all age groups). All other systems are voluntary and cover only a segment of the population. This means, if this scheme succeeds, the country will have a National Population Register and a Family Register, something it does not possess today. But the current CNAM register is far from achieving that. It has to first be embraced by the population that is yet to show enthusiasm for the scheme.
- Cost of participation is 1000 FCFA per month per person. So a family of 5 will pay 60,000 FCFA (about \$100) per year on this baseline health scheme. Since coverage is limited to those who can afford it, they would also have to have supplementary insurance.
- The identity system proposed is robust and innovative. The enrollment process is robust as it uses biometrics. The credential itself features a significant set of security features (Embossing, Guilloches, MicroText, Fluorescent UV ink). It also provides for a mechanism for authentication. While the card is not an electronic smart card (no chip in order to lower cost) it uses a Datamatrix 2D Barcode (Figure 7) containing biographic and biometric data (two index fingers).
- The scheme is supposed to attribute a social security number for life. This could be a candidate for the unique identifier that could be used for other administrative applications.

Based on the fact patterns examined, today we would give the CNAM the ISA scores shown in Table 6.

Figure 6: The Detailed Identity Enrollment Form for the CNAM (top). The President of the Republic Being Enrolled Using the 2-Finger at a Time Procedure (bottom).

**CAISSE NATIONALE D'ASSURANCE MALADIE
(C N A M)**

snedai-cmu FICHE D'IMMATRICULATION
OU DE RENOUELEMENT DE CARTE

A remplir en deux exemplaires. Tous les champs obligés sont indiqués.

ETAT CIVIL / IDENTITE

1. NATURE DE LA DEMANDE : 1^{er} demande Renouvellement
2. N° CNAM SI RENOUELEMENT : _____ *
3. CIVILITE : Monsieur Madame Mademoiselle *
4. NOM : _____ *
5. NOM DE JEUNE FILLE : _____ *
6. PRENOM(S) : _____ *
7. SEXE : 1. Masculin 2. Féminin *
8. DATE DE NAISSANCE : _____ *
9. LIEU DE NAISSANCE : _____ *
- Pays : _____ *
- Sous-préfecture ou Commune : _____ *
- Localité / Quartier : _____ *

10. N° DE L'EXTRAIT D'ACTE DE NAISSANCE OU DU JUGEMENT SUPPLÉMENTAIRE : _____ *
11. DATE DE DÉCLARATION DE NAISSANCE : _____ *
12. NATIONALITÉ : _____ *
13. NATURE DE LA PIÈCE D'IDENTITÉ : CN Passeport CS/CIC Attestation d'identité *
14. NUMÉRO DE LA PIÈCE D'IDENTITÉ : _____ *

15. PARENTS
- **Père** : Nom : _____ *
- Prénoms : _____ *
- Date de naissance : _____ *
- N° Récépissé ou N° Cnam : _____ *
- **Mère** : Nom : _____ *
- Prénoms : _____ *
- Date de naissance : _____ *
- N° Récépissé ou N° Cnam : _____ *

16. SITUATION MATRIMONIALE : Célibataire Marié(e) Divorcé(e) Veuf/Veuve Concubine(s) *
17. DATE DE MARIAGE : _____ N° de l'acte de mariage : _____ *
18. N° RÉCÉPISSE OU N° CNAM DU CONJOINT : _____ *
19. LIEU DE RÉSIDENCE :
- Sous-préfecture ou Commune : _____ *
- Localité / Quartier : _____ *
- Adresse géographique : _____ *

20. TELEPHONE FIXE : Bureau : _____ *



While the target performance in 7 years would be (assuming the accomplishment of all project objectives as stated in the project award contract) as shown in Table 7.

In our opinion the CNAM represents a very promising foundational identity system with good to very good scores in the ISA indicators in the long run. It can be improved even more if coverage of the population

Figure 7: Using Mobile Devices to Authenticate the Identity of the CNAM Card Holder through the Datamatrix 2D Bar Code



Table 6. Performance of the CNAM Identification System under the ISA Main Indicators Today

Indicator	Score	Main Justification
Accessibility	Red	Accessible, but currently does not have a large database so the coverage is very small.
Robustness	Green	Very robust. Uses biometric enrollment and innovative methods of authentication.
Integration	Yellow	Electronic register, will be accessible and intended to be integrated with other services and applications.

Table 7. TARGET Performance of the CNAM Identification System under the ISA Main Indicators, Projected in 7 Years

Indicator	Score	Main Justification
Accessibility	Yellow	Would cover 11-12 million people in 7 years. That would represent 45% of the population.
Robustness	Green	Very robust. Uses biometric enrollment and innovative methods of authentication.
Integration	Green	More applications are supposed to integrate into the CNAM register and hence over time the integration score will improve, especially as the CNAM card becomes recognized as an alternative to the national identity card.

could be increased. This is a major challenge that would have to be overcome. Potentially the CNAM could become a social security card upon which many other programs and applications would be based.

Other identification schemes

There are a few other identification systems in the country. These include the drivers' licenses and the passport. Both are run through a PPP with different commercial companies. They both represent robust identity systems as they produce credentials up to international standards of security. We do not consider these schemes as viable general purpose identification systems since they have very low coverage. To date only about 240,000 driver's licenses and about 600,000 passports were issued since 2008. Still these are interesting schemes to examine since they show how Private-Public-Partnerships can work successfully in Côte d'Ivoire and in one case (the driver's license) they highlight an important innovation through the use of NFC for authentication of the card (see section below).

Legal framework

The identification systems and the institutions responsible for them in Côte d'Ivoire are subject to a significant number of legal acts that define the obligations, administrative procedures and the mandates. These go back as early as 1962. Annex 2 gives a chronological listing of all the laws pertaining to identification up to the Peace Accord (Annex 3). High level review of these laws does not reveal anything unusual. For the most part the legal framework has adhered to what is commonly found in Francophone countries.

There is however one exception that we view as very positive and that is the Law No. 2013-450 Relative to the Protection of Personally Identifying Information, which was passed by the assembly on 19 June 2013 and was signed into law by the president of the republic a few months later. This is the adaptation and codification of the ECOWAS treaty of 2008 and the Supplementary Act of 2010 on privacy which commit member states to adopt data protection laws and provide the broad framework for them. A detailed analysis of Law No 2013-450 is given in Annex 4.

As can be seen from Annex 4, this is a highly developed law and represents a very positive step for the protection of individual rights against abuse of identification systems by anyone that has legal access to the data contained in them.

The Mission was also pleased to see the level of commitment the country has to enforcing this law. The role of the Data Protection Authority was entrusted in 2014 to the powerful telecommunication regulatory body (ARTCI) that we believe has the competence, capacity and the political backing and will to bring forth effective enforcement of this important legal framework.

We believe this type of legal structure is highly unusual in developing countries. To illustrate, we show the result of our analysis of the legal framework in Africa in Table 8. Based on the analyzed fact pattern we give Côte d'Ivoire the highest score (Green) in the legal framework which is applicable to all identity schemes.

Table 8. Data Protection and Data Authorities in African Countries

The majority still has neither. Côte d'Ivoire stands out further because analysis reveals a very strong law and a powerful authority enforcing it.

Country	DP Laws	DP Authority
Benin, Burkina Faso, Côte d'Ivoire, Senegal, Gabon, Ghana, Mauritius, Morocco, South Africa, Tunisia	Yes	Yes
Angola, Cape Verde, Mali	Yes	No
Kenya, Tanzania, Uganda	(Draft Only)	No
Rest of Africa (35 countries)	No	No

4. Analysis and recommendations

Overall assessment

Looking at all the detailed data concerning the available identity schemes currently in the country, as we have summarized above within the ISA framework, we readily conclude that the identity ecosystem of Côte d'Ivoire suffers from significant structural issues that make it difficult to find a single identifier that can be used to support the identification needs for delivery of public services.

In fact the current Mission was motivated by the need to find an identifier that can be used for the WB Project mentioned in the introduction. Based on our ISA assessment we can say that there is no such identifier in existence. In other words there is no identifier with high coverage of the poor and vulnerable population that is robust and that is easy to integrate into the project. By and large the poor remain without any form of identification that can be relied on.

As a consequence we recommend developing a custom, low cost functional scheme (social identification scheme) to meet the needs of the WB Project. But, as we discuss further below, the proposed approach would be designed to allow this social identifier to interoperate with broad foundational schemes when they arise in the country (expansion of the ONI, the CNAM or an NPR initiative).

In this section we present a series of recommendations for opportunities to improve and reinforce the identity ecosystem in general and to help meet the needs of the WB Project in particular.

Developing an identification scheme for the WB project

Given that no appropriate identifier exists in the country, it is our recommendation to develop one specific to the project. This can be done by following a 3-step process as follows:

- 1. Survey:** Perform house-to-house surveys to collect socioeconomic data in targeted regions using the appropriate socioeconomic questionnaire. Here it is highly recommended that the survey be run on tablets using open source software such as ODK (Open Data Kit), which has shown itself to be very effective in similar environments (see Figure 8). The survey data is automatically consolidated using the ODK Server software (open source as well) whenever the tablets have Wi-Fi connectivity to synchronize with the server. Here there are two options, depending on whether the server is housed in the country (most probably for compliance with data privacy regulations) or on the cloud at Google (can be used during testing and customization of the questionnaire). In either case the software is free and the World Bank has technical expertise that could assist in making the right choice.
- 2. PMT:** Proxy Means Test algorithm could be run on the collected data once aggregated. Individuals that fall within the category of eligibility would be then subsequently invited to enroll their identity and enter the program as a beneficiary. It is important that the enrollment that includes biometrics be done after the PMT.
- 3. Enrollment:** At the stage of targeted enrollment, we recommend taking only two fingerprints (the two index fingers) and a face photo. This will be enough data for anyone above the age of 12. For anyone below 12, a portrait photo will be sufficient.

Figure 8: Social Survey Conducted on Low Cost Tablets Using ODK Software in a Recent Survey in Djibouti



The biometric data specified above, is sufficient to achieve the following objectives:

1. De-duplication of enrollment to achieve uniqueness and prevent leakage and fraud (not a big issue in this program and could be skipped, but will become important for the tasks described below).
2. Respond to the authentication needs at the time of service delivery, if applicable, in order to know that the entitled person is who is receiving the benefits and to confirm that he or she has received them.
3. Establish a potential link in the future between the identity as enrolled in the beneficiary database and the national identity scheme that could one day give robust identity to everyone in the country (here we imagine a link with CNAM, NIC or a future National Population Register). By having two fingerprints on file, it is easy to link the record down across databases using biometric matching (biometrics here play the role of what we call *link tags*).

This proposed functional enrollment is very cost effective and can be performed on a laptop or on a tablet equipped with a fingerprint sensor. A unique number would be attributed to each beneficiary and can be printed on a low cost ID card that can be used for identification of beneficiaries in certain cases where needed at the time of service delivery. Of course it is important to also capture information about identity documents that the individual may have, for example, reference to their identity card, or birth certificate or the CNAM card. While such information is not required (since many may not have it), it is helpful to validate along with the biometrics the links with the foundational identity systems in the country in the future.

Developing a Social Register

The outcome of the above activity is more general than just an identifier for the WB Project. In fact it leads to the foundation of a Social Register (SR). In the context of the WB project this SR would be initially populated with the results of the survey specific to the project, but there is no reason why this register could not house data from other programs. During the Mission, several entities have expressed interest in

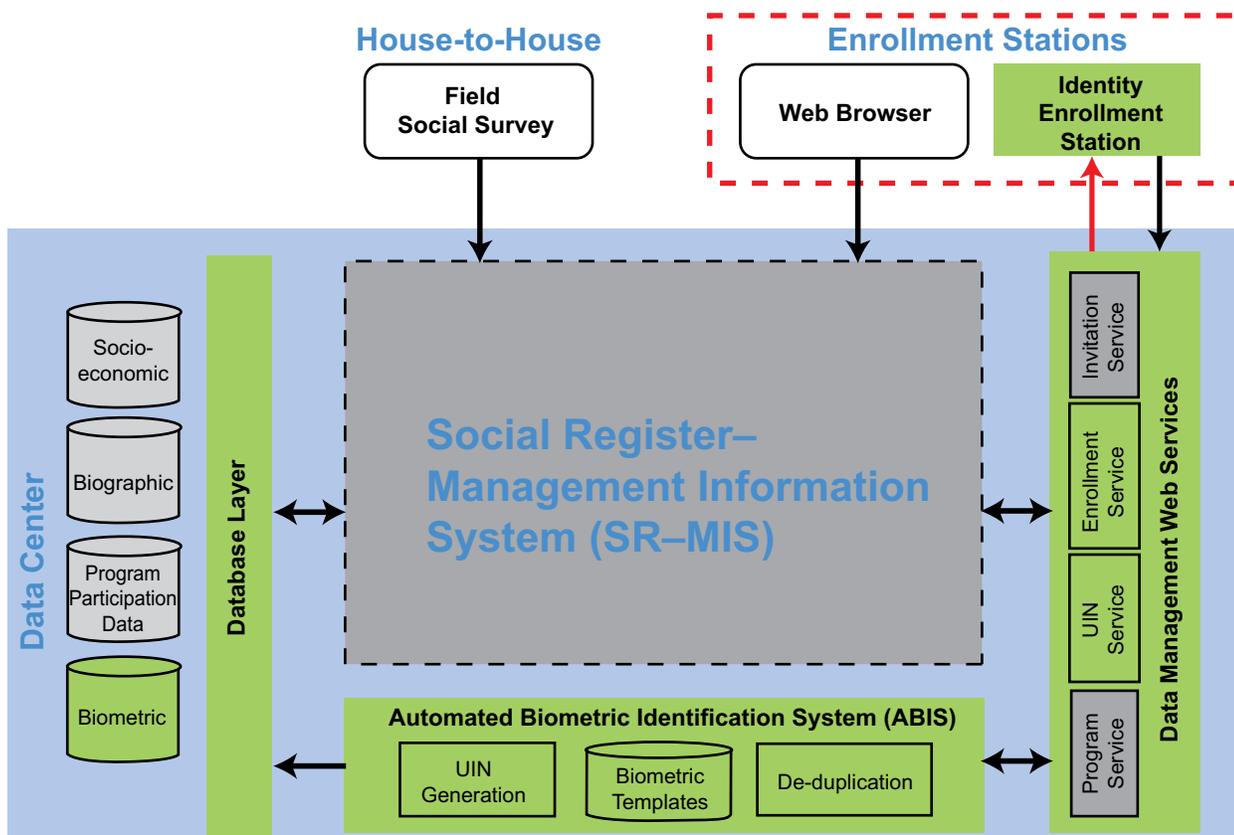
having access to a social register in order to improve their targeting. Among those that would be users of such a register outside the social protection and safety net programs are:

1. The CNAM and the Ministry of Health: Because in later phases of the CNAM rollout, the notion of who is poor becomes very important since the obligatory universal health coverage scheme requires the government to pay the subscription charges for those individuals. There is significant interest in collaborating with the organization that would be responsible for putting in place a social register (presumably the Ministry of Employment, Social Affairs and Vocational Training ME-MEASFP).
2. Ministry of Education: There is strong interest on the part of MoE because of current programs that target the poor. Those include the annual scholastic kits and the food programs. We understand those are on the order of tens of millions of dollars. The MoE has a clear need to determine who is entitled to be a beneficiary of these programs. The Social Register would be key to answering that question.
3. Ministry of National Solidarity, of Women and Children: Once again several of their programs could benefit from having access to the Social Register in order to improve their targeting.

We believe the case for putting together the foundation of a Social Register and for populating it can be strongly made in Côte d'Ivoire. World Bank analysis of the 2015 government budget shows that the country is spending about 1716.4 billion FCFA (about \$3 billion) on programs that are pro-poor. This will increase when the Universal Health Coverage reaches the phase of enrolling that population. Without a robust Social Register in place, the government pro-poor expenditure would be undermined by the lack of mechanisms for targeting.

The WB Project is the ideal opportunity to lay the foundation for the SR. From a technology point of view the system needs a few components as described in the high level architecture shown in Figure 9. According to the schematic, the Social Register would consist of two major components:

Figure 9: High Level Architecture for a Social Register Consisting of Two Main Components (i) Identity Management (shaded green) and (ii) Management Information System (MIS) (shaded gray)

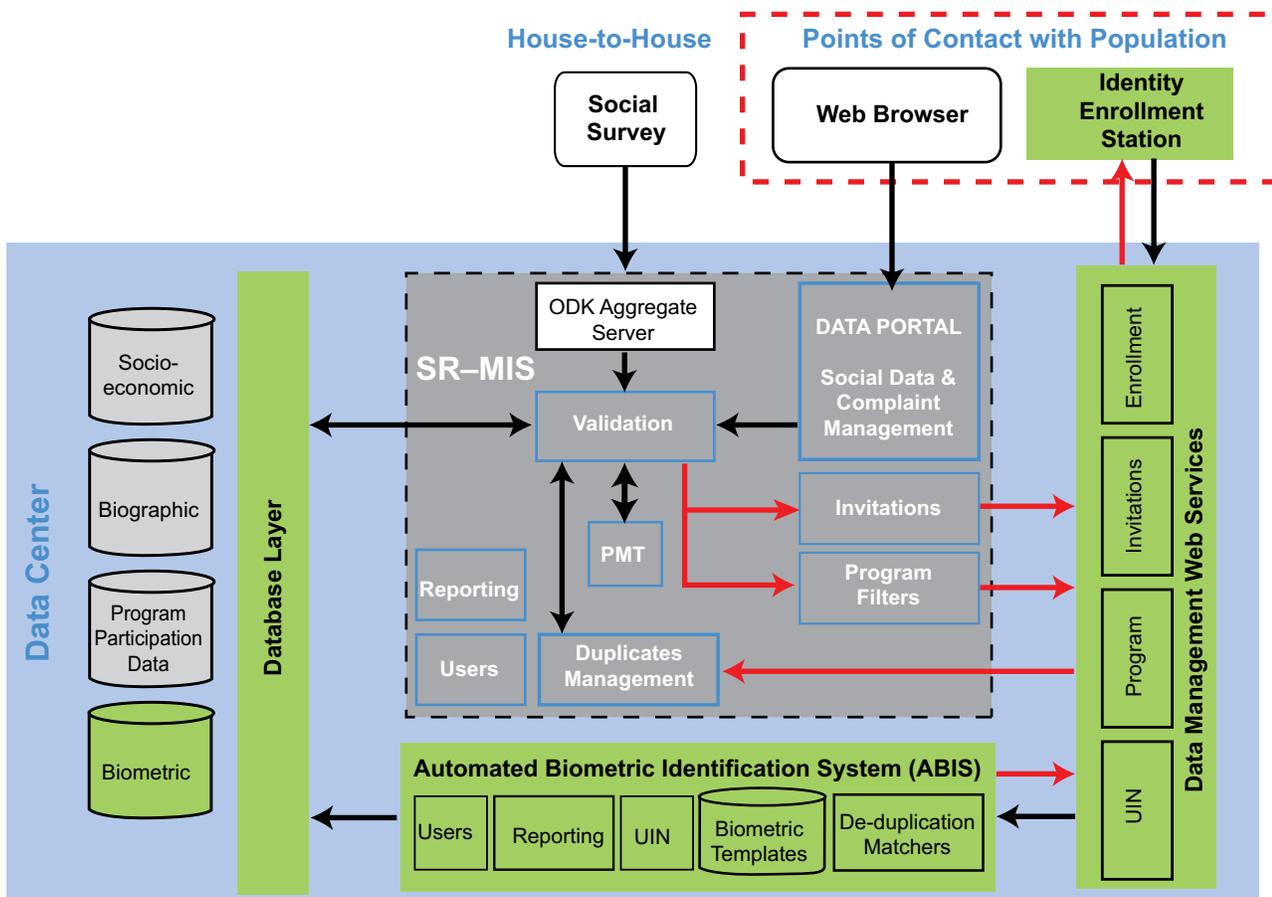


1. Identity management (shaded orange): where enrollment, de-duplication and Unique Identity Number for the social sector is generated and attributed. This is a COTS or *commercial-off-the-shelf* type module and is independent of the details of the programs. This module would have been unnecessary had there been in place a robust identifier issued by another organization, upon which the SR could rely.
2. Management Information System (MIS) (shaded gray): This system performs the identity management and makes potential beneficiaries lists available to various programs that need them. It can perform tasks such as updates, changes in status, complaints and data exchange with programs that require identification data of beneficiaries. A more detailed yet basic architecture for the MIS is given in Figure 10. One structure that we highly recommend using is a Data Management Web Services module, which serves as the portal through which access to the SR would be performed. This simplifies the design of the SR and shields it from having to know the details of the programs, present and in the future.

It is important to note that while the WB Project could be done on an excel spreadsheet without an MIS, that approach would miss an opportunity to build something more lasting to support social protection programs. For that reason we recommend the development of an extensible MIS that can support the needs of more than just one limited program. Data about the poor is very valuable and needs to be housed, maintained and analyzed within an appropriate information system.

As for the other component, the identity management system, given the small size of the population targeted by the program, this should not be a major burden to the WB project. It should be possible to perform the enrollment of the entire population of beneficiaries of the program (around 200,000) with a single laptop for the database and for the ABIS (which is a COTS de-duplication engine that uses finger and face matching technology as opposed to AFIS which uses only finger matching).

Figure 10: Detailed Architecture Schematic for a Social Register Including the MIS and the Identity Management Subcomponents



The MIS would contain all the standard functionalities of a management information system, such as role based user management (controlling access to data to comply with data protection laws and data security requirement) and reporting (for audit as well as for decision support). It would be web-based and accessible remotely via a standard web browser from anywhere where connectivity permits access to the internet. It could be from any point of contact with the population, such as a fixed community social program office, a cyber-community office, a mobile enrollment and update kit, etc.

The MIS also would manage the invitation for enrollment. This module could be as simple as exporting to an excel spreadsheet the list of individuals and their contact information that need to receive an invitation to enroll. The method of invitation after that would be determined by how communication is done within the local communities. In some cases it could be interfacing with a list service that sends text messages for those who have registered a phone as their method of contact.

Populating the Social Register

The value of a Social Register increases significantly with the size of the population it covers. While the WB Project could lay the foundation for a register and would seed it with a small population, in the long run there needs to be other mechanisms in place to significantly increase its coverage. Estimates, shared with us by INS, indicate that the Social Register in Côte d'Ivoire at this given time could potentially contain 4-5 million identities, namely those considered poor today (earning less than 450 FCFA per day). Given the framework (technical and operational) for a SR, which will be produced by the WB Project, there are two supplementary approaches to grow the social database:

1. Ensuring that all social programs use it and not just WB Project: This is the concept of the *unified register*, where all social programs pool data on their beneficiaries, and use a unique social number to identify them across programs. Data is kept up-to-date through beneficiary engagement within programs over time.
2. Periodic social census: Where house-to-house surveys are conducted in targeted areas covering the bottom, for example 40%, of the population. These could be conducted with the engagement of INS as the methodology is very similar to the national census (conducted once every 10 years), but here the focus is not on aggregate data. Instead the objective is to identify individuals and attribute to them socioeconomic scores in order to target them for social benefits. The experience in this area is extensive. For example Indonesia conducts a social survey once every three years, so does Rwanda (Ubudehe register), Colombia (SISBEN), Brazil (Cad Unico). Such surveys once every three years could be justified in places where billions are spent on poverty alleviating programs as they help make these programs more effective. This is the case for Côte d'Ivoire, hence it is pertinent to promote the development of a national policy for putting in place a Unified Social Register.

The international experience shows that a Social Register could be populated rather rapidly if there was a clear incentive for the population to come and declare in order to be considered for eligibility of specific programs. For example, in early 2014 Jordan put a fuel subsidy program in place (*Fuel Subsidy Cash Compensation Scheme*) and invited the population to apply via the web. In a period of 3 months, 80% of households did apply by filling online a detailed socioeconomic questionnaire. As a consequence the country now has a social register containing a wealth of socioeconomic data about its population that it uses for targeting for social protection programs (even though the original program that incited people to participate is no longer in place because of a drop in oil prices).

It is important to also emphasize that the Social Register is necessarily a household register because it is important for social targeting to know who shares roof and table. The World Bank has significant experience around the world in helping countries develop household registers that are used in support of social programs. That experience could be put to use in designing the approach and technical components that go into a social household register.

Consider using the Universal Health Coverage program to populate the SR

In the case of Côte d'Ivoire we see the Universal Health Coverage program of the CNAM as an ideal opportunity to try to populate the SR. If the population believes they have a chance to have the government pay for their coverage because of their status as poor, it is very likely that they will come forward and participate in the questionnaires of the Social Register.

In fact a development that we learned about at the Ministry of Telecommunication makes this even more feasible. The ministry is in the process of putting together 5000 community cyber centers to help bring more people in the country online. These centers could be ideal places to help people fill in the social surveys that enrich the Social Register data without having to perform the house-to-house surveys. Ultimately a hybrid mechanism may be the optimal choice. The design of such a strategy can only be done through a detailed study of the demographic fact patterns in the country.

Consider engaging with ONI and/or CNAM for enrollment

While the proposed workflow will continue to be

Survey→PMT→Enroll,

how enrollment is done could be flexible. For the WB Project it can be proprietary to the project itself since it covers a very small population. However, for scalability it may make sense to adopt a process where the Survey in the field is used to determine where there are gaps in the identity credentials (those who do not have an ID or a CNAM card). The way this could work is to use the concept of Registrar, where an agent of the social protection project could be trained by CNAM or ONI to perform the enrollment on their behalf, or could actually be accompanied within the context of campaigns by agents of ONI and CNAM in order to achieve two objectives.

- i. Enroll people for the social protection program (while at the same time);
- ii. Enroll them into a more foundational identity database such as ONI or CNAM.

Based on the interest we have seen, during the Mission, from ONI and CNAM in trying to increase their enrollments, we believe engaging with these two organizations early on and making them stakeholders in the development of the Social Register could be a very fruitful collaboration.

Modernizing the civil register: What priorities?

The task of modernizing the civil register in Côte d'Ivoire is a monumental one given its current state. The list of to-do is very long. This calls for establishing priorities as it would be unrealistic to embark on the full scope of the project. Some of the actions that should be considered as priority include:

- i. Amend the civil registration law to include an electronic civil register. Current law covers only paper based registers. Without this step, the electronic civil register cannot gain its legal weight and all actions will remain administrative only.
- ii. Modernize the registration offices by giving them connectivity and computers that can run Civil Registration and Vital Statistics (CRVS) software.

- iii. Develop a phased plan for digital transformation of the civil register which includes consolidation of the register centrally, electronic registration of new births, and a plan to digitize a portion of the historical paper based records focusing on the population segments underserved by other registers (notably the children). The DGAT and the Ministry of Interior recognize the need to digitize the historical civil register, but this is a time consuming and costly exercise. We are not convinced that it is the highest priority for the full register. What is more important is to ensure that as soon as possible all civil registration bureaus are modernized with electronic systems with CRVS software connected to a centralized database. At the limit, digitizing a smaller segment of the register could be included on the list of priorities. Full digitizing could wait and be done on a longer time scale and when capacity is available.
- iv. Launch a campaign to sensitize people to the importance of civil registration for children. The population does not seem to have the reflex of declaration of births. A fundamental shift in attitude has to occur before a viable civil registration system can be put in place. The passage to electronic registration could be the ideal opportunity.
- v. Empower health workers to perform the birth declarations more effectively. For example at the time of first vaccination, any child that does not have a birth certificate could be declared and registered through the system. Use of CRVS application on a mobile phone could be very helpful in that regard.

In addition it is important to invest in capacity and in training of the civil registration officers. During the Mission it was clear that, in many places around the country, the officers are performing this task in addition to their other daily responsibilities. It appears that they may not have been trained to deal with the challenges posed by the stream of exceptional cases that present themselves and that challenge the civil register. A standard operating procedure manual and a help desk available to registration officers seeking guidance may be essential in ensuring consistency of the process, improving quality of declaration, and in simplifying the administrative steps for the public. All will result in positive changes in the population attitude towards registration and their participation in the process.

Leverage mobile innovations

During our Mission we saw two innovative applications where mobile technology was used to add robustness to an identity scheme while reducing cost. These are:

- Driver's licenses: The Côte d'Ivoire driver's license is actually not a smart card in the traditional sense (the previous generation in the middle of the 2000s was). It is a card that does not stock identity information inside a chip, except it has an NFC tag (very low cost) with a unique number. The code can be read by a standard mobile phone (Samsung, Apple, etc.) through the NFC interface, by simply tapping the card on the phone. An application available to police officers allows them to ping the central server using standard wireless networks. The purpose of this query is to check the validity of the card and the information printed on it. It is a mechanism of online authentication. The database has queries to see if the card number is valid and it retrieves the identity of the person affiliated with that card along with the driving privileges active. So even if the card is fake or altered, the central records cannot be faked and hence the card will fail to be authenticated. In this way, the country has managed to move away from expensive smart cards, thus lowering cost, but at the same time enhancing security since authentication against the unalterable central database is the highest form of authentication.
- CNAM Card: Once again the card is NOT an electronic smart card. Instead it contains a mechanism that allows for verification of the identity of its holder. This is in the form of the Datamatrix 2D barcode which contains the mathematical templates for the two index fingers (see Figure 5, bottom). The 2D barcode is read through a standard camera on a mobile android device (see Figure 7) the templates encrypted in the 2D pattern are read, decrypted and then are matched against the live fingerprints presented on the sensor of the special mobile device. This provides for authentication in

an offline modality. In other words it allows the authentication of identity without having to access the centralized database.

Both examples point to very interesting models of authentication, which will be required for service delivery in some cases. We see the role of mobile to be critical in enrolling identity (use of mobile fingerprint equipped tablets) as well as for authentication (through schemes like the two just discussed and that are already in use in Côte d'Ivoire). Given the information infrastructure of the country, we expect that a mobile strategy for all identification schemes to be more effective and should be seriously considered. This includes migrating civil registration processes, ONI, CNAM and Social Register enrollments to mobile platforms.

Establishing the Unique Identity Number (UIN) and the National Population Register

It is clear that the identity landscape in the country is fragmented. Currently and under development, there are multiple identification schemes covering different segments of the population without any one of them achieving the privileged status of being a complete foundational system or a national population register. The CNAM system has the ambition to cover every single person (children included), but even according to their optimistic plans one can expect only 11 million people in 7 years in that database. The National Identity Card on the other hand is not mandated to cover people younger than 16 years. Furthermore, we suspect some registers for school children will emerge or are currently in place (the Mission was unable to verify because of limited time). Add to that the driver's licenses, the passports, the voter registers, the certificate of nationality, the birth certificate, and we have a patchwork of identification schemes to cover the total population. We should point out that each scheme attributes a number or an identifier to the enrolled individual.

This fragmentation in the identity landscape will continue as long as there is no robust and simple mechanism for linking the same identities across the different repositories. The mechanism for doing so is known as the Unique Identifying Number (UIN), which many countries around the world (even ones with robust identification systems) are now resorting to in order to link identity across government databases. This is the mechanism which enables the interoperability and portability of identity. It links disparate databases and hence unifies the interaction of the individual across multiple agencies, thus presenting a unique and coherent view of the individual to the public facing governmental agencies.

The objective of having a robust UIN is to improve the administrative efficiency and to eliminate leakages and losses due to identity fraud that invariably results when the multitude of identity programs in operation do not dispose of the means to cross-check and link identities. This is particularly true for social protection programs which need to go beyond the individual and establish unique households which can be targeted for social assistance. In addition the UIN is helpful in easing the burden of declaration of identity on people. For example in countries like Belgium, with the UIN in place, an individual is not obliged to declare his or her information more than once (for example change of address). Once declared, that information is propagated through the UIN to all agencies that need it. Finally, the UIN is recognized as an important tool to accelerate the country's entry into the era of electronic service delivery, as one of the elements of a national electronic government strategy.

All of these factors were raised with high level representatives of the Ministry of Information Technology and Telecommunication. The interest and agreement on the need to put in place a UIN suggests that there is consensus in the country for the desire to have such a tool. The issue is really how to go about achieving it in a cost effective way.

The proposal is one of *federation of all the registers*. Within this framework the identity exists within an ecosystem with multiple points of entry. A point of entry is a database where the individual has been robustly enrolled. This could be the Civil Register, the ONI database, the CNAM database, etc. In order to harmonize between them, each database is required to attribute a UIN to each record. The UIN could be generated using a common logic or it could be generated by a common engine kept by a number-generating service (housed at ONI or the Civil Register). In the latter, it means that the different databases request numbers for each entry in their records. The World Bank has experience with both mechanisms. Either way, the end result is:

- i.** The attribution of a UIN to each record that exists in various attestation databases (batch attribution for existing records);
- ii.** The attribution of such a number at birth for all new births;
- iii.** The harmonization across the databases (linkage of identity);
- iv.** The emergence of a national population register (the list of names and UINs).

For someone to enter the National Population Register they need to have been enrolled somewhere in some database. These are the databases that attest for people's existence and their uniqueness (through the use of biometrics, or birth registration formalities, or administrative procedures).

There are several architectures for achieving this that could be elaborated if the country has an interest in pursuing this development.

Paying attention to data protection and privacy

Developing identification schemes is a very sensitive subject. They involve the collection of and consolidation of information that could be privacy invading, and in general they are susceptible to abuse since registers of population that show where everyone in the country lives and who they live with could be used for control. As a consequence they should only be done within well-defined and strong legal protection frameworks.

Practically speaking Côte d'Ivoire has already a law (Law No. 2013-450) that covers the protection of Personally Identifying Information (PII). This was adopted late in 2013. The role of the data protection authority was entrusted to the Telecommunications Regulatory Authority of Côte d'Ivoire (ARTCI), which reports into the Ministry of the Post, Information Technology and Communication (MPTIC). While ARTCI has had about a year in this new mission, they are already active in their role to try to enforce the law. In Annex 4 we present a detailed analysis of what the provisions of this law are and what they mean for identity projects. From an operational point of view it requires that the project connect as soon as possible with ARTCI in order to register the intent to collect PII, get their approval, and ensure their continued participation as the project expands through its various phases of data collection. It requires the development of privacy, data access and retention policies. We refer the reader to the annex for further details.

Annex 1: Color coded scoring of the four indicators used by ISA

Indicator				
Accessibility <ul style="list-style-type: none"> ▪ Coverage ▪ Access and timeliness ▪ Updating and link with civil registries 	<p>Minority of population has an accepted ID; poor generally excluded; acquiring ID costly in relative terms. Civil registry unreliable or inaccessible with very low rates of birth and death certification.</p>	<p>Majority of population covered; acquiring ID less costly but government policy can be onerous; civil registry functional but coverage is low, records decentralized and with significant delays after birth; passive enrollment approach for ID.</p>	<p>Almost universal coverage with isolated pockets not covered; civil registry captures majority of births in central registries with minimal delays; obtaining ID not costly and proactive efforts to enroll in progress.</p>	<p>Universal coverage (including noncitizens); cost of acquiring ID minimal in relative terms. Good links with centralized civil registry for updates; children issued unique numbers in timely fashion in full coordination between ID agency and civil registry.</p>
Robustness <ul style="list-style-type: none"> ▪ Uniqueness ▪ Security ▪ Authentication 	<p>Official IDs are easily falsified and weak enforcement; government and donor programs use proprietary ID to fill gap; no institutional capacity to monitor ID database.</p>	<p>Some control of ID issuance, quality control and database maintenance; mostly paper based recordkeeping.</p>	<p>Modern technologies employed for ID security features; basic authentication processes.</p>	<p>All IDs de-duplicated and in electronic format; very difficult to produce fraudulent IDs. Good authentication standards applied.</p>
Integration <ul style="list-style-type: none"> ▪ Ubiquity ▪ Interoperability ▪ Common transaction standards 	<p>Little or no database linkages across programs; high dependence on local knowledge (e.g., community) and references for verifying identity.</p>	<p>A few major programs use a common identification platform; benefits tied to particular locale and not portable.</p>	<p>Some private and public transactions can be done with single ID; most program MIS linked; authentication standards exist but are weak and vary across programs.</p>	<p>Most private and public transactions can be done with single ID at national level; same advanced authentication standards used across programs. Vast majority of government MIS can be linked by unique ID or through other mechanism.</p>

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Indicator				
Legal Framework/ Personal Data Protection	Ad hoc or non- existent mechanisms for privacy and data access.	Minimal protocols in place for personal data protection and privacy. Government agency designated as responsible.	Government agency designated as responsible but lacking resources for implementation and limited capacity; most of the internationally accepted personal data protection standards and protocols are followed; mostly digital information on individual records.	Government agency designated as responsible and well resourced, good capacity; full compliance with internationally accepted personal data protection guidelines.

Annex 2: Brief chronology of identification regulations in Côte d'Ivoire

The identification of people living in Côte d'Ivoire has always been a major concern for all governments since independence even well before the Peace Accord. Over the years, Côte d'Ivoire has expressed its desire to manage its population through various laws and structures for the implementation of projects for the identification of individuals. Here is a brief chronology of these laws leading up to the Peace Accord.

- The first measure was the promulgation of Law No. 62-64 of 20 February 1962 on the establishment of the National Identity Card. On 13 June 1962, Circular No 1138 established an Identity Card for Foreigners, replacing the Identity Booklet for foreigners which was put in place by the Legislative Decree of 12 January 1932 concerning the conditions for admission and residence of French and other foreign nationals in French West Africa (AOF).
- On October 7, 1964, Law No 64-374 was passed relative to civil registration. It was modified by Law No 83-799 of 2 August 1983.
- In 1990, Circular No 1138 of 13 June 1962 was replaced by Law No. 90-437 of 29 May 1990 on the entry and residence of foreigners in Côte d'Ivoire which provides in Article 6: “. . . any foreigner over 16 years of age, if he stays in country and after the expiration of a period of three months since entering the Ivorian territory, must have a residence permit.”
- Decree No. 90-370 of 23 May 1990 amended the decree implementing Law No. 62-64 of 20 February 1962 establishing the National Identity Card. The “Security Project (SP)” was created which included a computerized system of identification and control of national and foreign population by the production of highly secure identity documents. This structure began operations in October 1991 by issuing of residence cards.
- In September 1993, the SP produced the first National Identity Cards (the green cards).
- In 1998, Law No. 98-448 of August 4 on the identification of persons and residence of foreigners in Côte d'Ivoire was promulgated. The decree implementing this law allowed for the creation of the Central Identification Repository (CIS) and the production of the National Identity Card (for Ivorian) and Residence Card (for foreigners).
- In 1999, Law No. 99-690 of December 14, amending the Law No. 98-448 of August 4, 1998, was enacted. The production of all identity documents was interrupted during the coup of 24 December 1999.
- In February 2000, the National Center for Secure Identification (CNIS) was created to replace the CIS. This structure did not produce identity cards, but established administrative certificates for Ivorian identity and issued residence permits to foreigners.
- In 2001, the National Identification Office (ONI) was established by Decree No. 2001-103 of February 15 as a successor of the National Center for Secure Identification (CNIS).
- The objectives assigned to the ONI were: the implementation of the civil registration policy covering officers, civil officials and judicial authorities concerned with population identification, immigration and the emigration of residents of Côte d'Ivoire.

- In 2002, Law No. 2002-03 of January 3 on the identification of persons and residence of foreigners in Côte d'Ivoire repealed Act No. 98-448 of 4 August 1998.
- In 2004, Law No. 2002-03 of January 3, 2002, is amended by Law No. 2004-303 of 3 May 2004.
- In 2005, Decision No. 2005-05/PR of 15 July 2005 defines the new framework for the identification of people and stay of foreigners in Côte d'Ivoire.
- Ordinance No. 2007-06 of January 17, 2007, provided uniform conditions for obtaining the national identity card.
- In 2007 the Peace Accord of Ouagadougou of March 4, 2007, calls for robust identification practices in support of lasting peace and bases the population register on the electoral register of 2000 as amended through a biometric census.

Annex 3: Identification measures dictated by the Peace Accord of Ouagadougou

The need for more robust identification in Côte d'Ivoire was recognized as an important element for exiting the crisis and for achieving lasting peace by the Accord of Ouagadougou, signed March 4, 2007. The signatories to the Agreement recognized that the identification of Ivorian and foreign populations living in Côte d'Ivoire was a major concern. The absence of clear and coherent identification mechanisms, as well as the lack of unique administrative documents certifying the identity and nationality of individuals, were a source of conflict. The Agreement indicated that the problem of identity had to be addressed first before fair and open elections could be conducted in a manner acceptable to all parties. As a consequence they called for a set of specific measures. These included the following elements which formed the foundation for the identification practices in the country for many years post-crisis:

1. The launch of mobile courts in order to issue court declarations (supplementary judgments) to replace birth certificates (i.e. substitute birth certificate issued per court judgment) for those who were never registered in the civil registry.
2. The reconstitution, on a priority basis, of lost or destroyed birth records in some registration centers in parallel with the work on court declarations.
3. Establishment of new identity credentials (national identity and resident cards).
4. For the sake of accelerating the development of an identification system and given the prevailing status of administration in the country and the necessities subsequent to the crisis, the parties agreed to base the identity register on the electoral list of the year 2000.
5. The conduct, by the Election Commission, of a census including the collection of biometric data from each Ivorian 18 years and older in order to update the 2000 electoral list. All those enrolled during the campaign were issued a receipt with a unique identifying number which was required for collecting the voter card and the new national identity card after personalization and production.
6. After the validation process of the electoral list by the Election Commission, the register would be considered as the common foundational database for the issuance of the new national identity and voter cards and for identification needs going forward.

The national enrollment campaign

- Mass population registration with biometrics began in August 2008 and continued until April 2009.
- > 6000 mobile biometric registration kits capable of capturing 10 fingerprints (captured 1 finger at a time) and a face photograph in addition to biographic data were shared among 11,000 registration centers spread across the country and in consulates and embassies in 22 countries overseas.
- The data was collected into 70 coordination centers before being sent to a central facility in Abidjan to be consolidated nationally.

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- The records were de-duplicated using a state of the art Automated Fingerprint Identification System (AFIS) to establish their uniqueness.
- At that time 11 million secure blank ID cards (featuring contactless smart chips) were produced; 5.7 million were personalized (personalization took place in batch mode in France and the completed cards were delivered to Abidjan for distribution); 9 million voter cards were printed, and 5.7 million were personalized (see figure below) in addition to 500,000 resident permits.
- Enrollments continued for the national ID and included those 16 years and older. It is our understanding before the process was halted 6 million ID cards were issued.



In addition, the Peace Accord provided, at a high level, specifications for the national identity card. It required the new cards to be tamper-proof, highly secure and including a UIN for each holder. It gave the responsibility for this new document to the *National Identification Office* (ONI). It also called for the selection of a technical operator that would help the government establish the desired robust national identification system.

Implementation of the required identity measures included:

1. The partner that was selected, in November 2007, to carry out the tasks identified in the Peace Accord, was the French company Sagem (which is today called Safran Morpho). An operator with long experience and expertise in mass population registration and identity management projects throughout the world, particularly in francophone countries in Africa.
2. The company implemented a new system of national identification and elections as called for by the Ouagadougou Agreement. This included the mass biometric registration of the adult population, the creation of the national population database (covering adults only) and the production of personalized national identity cards, voters lists and voter cards that were used to identify voters in the 2010 elections.

The original contract value was estimated at nearly USD 300 million. In early 2015, Morpho received another award of more than USD 40 million and was tasked with updating the electoral register and to operationalize it for the October 2015 elections.

Annex 4: Law no. 2013-450 relative to the protection of personally identifying information

PII and the challenge of its protection

Côte d'Ivoire uses the same international definition for personally identifying information (PII). PII is information of any kind that can identify an individual, either directly or indirectly, fully or partially. This includes name, telephone number, address, email address, any identity numbers (ID cards, passports) or beneficiary numbers (social programs), bank account information, biometric data and other information related to health, religion, or ideology. The definition is ever expanding and is subject to variations in interpretation and local nuances.

PII is generated in the normal course of administrative or commercial transactions, where they are given voluntarily upon request or retrieved without knowledge of the person concerned. The protection of this type of data is a challenge technologically as more aspects of human lives are conducted electronically. Information systems generate and consume PII which can accumulate in databases that can be analyzed and exploited without knowledge of the individual identified.

This is of particular concern for electronic ID systems, which are the subject of our current report. Identity systems rely heavily on PII. During registration, enrollment data is collected, transmitted, stored and archived; but that is not all. Every time an identity is asserted by its bearer to an information system, it generates usage and transaction records which can accumulate in audit trail databases, controlled commercially or by government institutions. As a consequence massive amounts of PII data can become digitally available about people, their actions and their reputation, all linked through identity numbers and searchable through big data analytics engines.

This situation could raise major concerns, the severity of which may depend on country, policy and laws, and regional differences. There are significant discussions around the world related to how to address this potential mega-data problem. There are two approaches that have to work together to achieve the objective. The first is technological, where Privacy Enhancing Technologies (PET), distributed databases, and frameworks of trust that manage identity alongside with anonymity are deployed. As has been clear from the international experience thus far, technical measures are helpful in reducing the scale of the problem but are not sufficient. That is why countries are resorting to another approach to dealing with the problem and that is through establishing a pro-privacy legal framework, that defines what can and cannot be done with PII, empowers a Data Protection (DP) Authority to ensure compliance, and fixes sanctions for noncompliance. This is the subject of this short summary in this annex.

The situation in Côte d'Ivoire

Cote d'Ivoire has adopted a significant legal framework for dealing with data protection. This includes the adoption of a text of law as well as the establishment of a DP authority to implement the law. In this annex we give an overview of the law and the body that is tasked with implementing it. The role of Data

Protection (DP) authority has been entrusted to the Telecommunications Regulatory Authority of Côte d'Ivoire (ARTCI).

This is a summary based on interviews of the ARTCI as well as supporting documents provided to the Mission.

Legal framework for protection of PII in Côte d'Ivoire

The National Assembly passed Act No. 2013-450 of 19 June 2013 on the protection of personal data. The act was subsequently promulgated by the President of the Republic, published in the Official Journal August 8, 2013, and entered into force on 13 August 2013. This law is intended to adapt to the national context of the ECOWAS law on data protection. This is the so called ECOWAS Treaty of 2008, which commits all member countries to adopt data protection laws. The treaty was expanded later in the so called Supplementary Act A (ECOWAS SA.1/01/10 of 16 February 2010). The Côte d'Ivoire law goes beyond what ECOWAS had established as the minimum in the Supplementary Act; it incorporates some relevant provisions not covered by the ECOWAS text, but that are often contained in other international legal instruments. It also goes further in its codification of the ECOWAS law and it even details the sanctions for violations to make enforcement of the Act easier and more transparent.

Overall assessment

We see the law of 19 June 2013 as an effective and a powerful tool for the protection of personal data of the population. We applaud the country for having defined the period of compliance with all its provisions (six months after entry into effect) and for putting in place an authority to regulate the collection of PII and to enforce the provisions of the law. During our interviews, the intention of the ARTCI, its capacity and political will to enforce this law were very apparent.

Legal innovations

This law contains many innovations, not often seen in Africa. Among them we cite:

1. The establishment of a comprehensive legal system for processing and circulation of PII that is uniform across all entities whether private, commercial, local or central government. The responsibility is placed on anyone that receives and processes PII irrespective of their context.
2. The law prohibits the transfer of personal data to third countries that do not offer adequate protection.
3. The recognition of the right to be forgotten, the right to personal data portability and the right to refuse personal profiling.

Scope of the law

Law No. 2013-450 is applicable to a wide range of applications. It covers the collection, processing (automated or otherwise), transmission, storage and use of personal data in the country by natural persons, the State, local governments, and any legal entities. It contains provisions that cover the following matters:

Prior notification and authorization

This law imposes formalities prior to collection and processing of PII:

- It identifies a key role, called the *Data Controller* (DC), which is a natural or legal person or entity, public or private, which alone or jointly with others, decides to collect and process personal data and determines the purpose.
- The law requires that the processing of personal data be subject to prior reporting and authorization as appropriate. The filing of a declaration and submission of an application for authorization is made by the Data Controller or his legal representative.
- Processing of data collected in strictly personal and private setting or where required by law are exempted from prior declaration formalities.
- This is a significant provision which requires the questionnaire for the household survey that will be used during the World Bank Social Protection project to undergo review and prior approval.

Guiding principles for data collection

The law also provides a set of principles that govern data collection and processing. Many of those are in alignment with the OECD,² for example:

- **Legitimacy:** The treatment should be legitimate and fair.
- **Purpose and Notification:** The principle of transparency creates an obligation on the part of the DC to provide clear disclosure and notice related to the PII and its collection and processing.
- **Consent:** Prior consent of the person concerned is required. In addition consent of people whose details were collected before the publication of the law, must be requested again before using them after its entry is in force.
- **Collection Limitation:** Data must be collected for specified, explicit and legitimate purposes and cannot be subjected later to further processing or use in a way incompatible with those purposes.
- **Data Aggregation:** The collection, recording, processing, storage, transmission and linkage of files of personal data must be done in a lawful and fair manner. The linkage of files is allowed only if it achieves legal or statutory objectives of legitimate interest for the DC.
- **Proportionality:** The data must be adequate, relevant and not excessive relative to the purposes for which it is collected and further processed.
- **Data Quality:** Data collected must be accurate and, where necessary, kept up to date.
- **Security and Confidentiality:** It must be kept confidential and protected.
- **Duration Limitation:** The data should not be kept beyond the allowed retention period necessary for the purposes for which they were collected or processed.

Individual rights

Individuals subject to the data collection enjoy certain rights under the law. For example the right to information and access to their file; the right to correct their data, including updating it; the right to erase data and the right to be forgotten; the right to refuse being profiled; the right of portability and the copying of their personal data.

2 Org. for Econ. Cooperation and Dev., *OECD Guidelines on the Protection of Privacy and Transborder Flows of Personal Data* (1980), http://www.oecd.org/document/18/0,2340,en_2649_34255_1815186_1_1_1_1,00.html.

The obligations of the data controller

The law is clear about the responsibilities attributed to the DC. When using subcontractors, they need to meet certain legal requirements to be deemed acceptable and they need to operate under the clear authority of the controlling entity and its instructions. Even then the DC does not escape the weight of their responsibility. The DC is also held responsible for the disposition of data beyond its retention period.

Sanctions

The law establishes a variety of sanctions that give it power over those who do not comply. The ARTCI after a warning and unsuccessful notice, and after hearing the DC, may impose any of the following sanctions:

- A temporary withdrawal of the authorization;
- A permanent withdrawal of the authorization;
- A financial penalty.

ARTCI could also bring lawsuits for criminal offenses against violators since there are provisions for criminal penalties in the law. For example the law makes it a criminal offense to collect and process data revealing racial, ethnic or regional affiliation, political opinions, religious or philosophical beliefs, trade union membership, sexual orientation, genetic data, or data on the health condition of the person concerned, except when allowed by law.

Furthermore, it prohibits and makes it a criminal offense, for all direct marketing activities, through any medium, that use the PII of an individual that has not given prior consent to be targeted.

Finally, anyone who interferes or hinders the action of the National Data Protection Authority can be subjected to imprisonment.

The correspondent responsible for compliance

The law requires data controllers to designate a correspondent (e.g., privacy officer) which could be a natural person or a legal entity, as a single point of contact to ensure compliance and accountability. Whether a natural or legal person, the correspondent profile must meet certain eligibility conditions before deemed acceptable to perform that role. In exercising this function, the correspondent is required to maintain a list of treatments performed that are immediately available to anyone upon request: provides access to its data for auditing, ensures compliance with the legislation, signals any violation to the data controller and notifies the ARTCI as required (including reporting difficulties encountered in the course of performance of its mission).

The correspondent cannot be subject to any sanction by the data controller or employer due to the performance of its mission. But its mission can be terminated for breach of its fiduciary responsibilities, or upon resignation, death, bankruptcy, etc.

The National Data Protection Authority

As mentioned earlier, the mission of this authority in Côte d'Ivoire is carried out by the Regulatory Authority for Telecommunications/ICT (ARTCI). In this capacity, ARTCI has three functions:

1. Educating the population and data controllers about their rights and obligations;
2. Receiving applications and issuing licenses for the processing of PII;
3. Proactive monitoring of compliance with legal provisions of the Law, receiving redress requests and complaints, bringing lawsuits, and imposing penalties for noncompliance.

ARTCI has regulatory power whose extent and mode of exercise are specified in the text of the law. In the exercise of their duties, the members of ARTCI do not receive instructions from any other authority. Each year, the Authority presents to the President of the Republic a report detailing the performance of its mission.

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