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Compendium of **Good Practices** in Linking **Civil Registration and Vital Statistics** (CRVS) and **Identity Management Systems**

Photo: UNICEF / Tadesse

Global Partnership for Sustainable Development Data

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Foreword

The *Compendium of Good Practices in Linking Civil Registration and Vital Statistics (CRVS) and Identity Management Systems* comes at a critical moment in the global community's journey toward inclusive sustainable development. With nearly five years gone and still limited progress in realizing the Sustainable Development Goals, we need to intensify our efforts to strengthen the foundational systems that will unlock progress for all. This is particularly important if we are to meet the needs of women and children who are often the most marginalized. Without reliable, universal, permanent civil registration systems, governments cannot have an accurate count of their population. This fosters further exclusion and invisibility, limits governments' ability to protect the most vulnerable and makes it increasingly difficult to achieve the 2030 Agenda to leave no one behind.

Civil registration systems provide the foundation of an individual's legal identity and a pathway for realizing their rights and full potential. Vital statistics generated from civil registration provide crucial data for policy, planning and service delivery. CRVS systems are essential for measuring progress towards 67 sustainable development indicators, covering 12 of the 17 SDGs. It is this data that will help us to know who is being left behind, where and why, and as such provide the essential foundation for achieving the SDGs. It is often the most marginalized in society, particularly women and children, who are invisible in the eyes of the state and suffer from multiple overlapping deprivations. Making the invisible visible through registration of vital life events that is robust, inclusive, secure and privacy-protecting, and compulsory will provide data that is timely and accurate ensuring governments can deliver services where they are needed most.

Linking CRVS and identity management systems can transform how governments empower and provide for their populations. This compendium brings together good practices from select countries that have made great effort in linking these systems and highlights the resulting benefits. The case studies show how these countries have developed their systems from very different starting points and taking diverse paths. The synthesis chapter highlights that designing efficient systems in itelf is not sufficient. Building a cultural understanding of the value of registering vital events, understanding and changing social norms and driving demand for high quality, robust population data is essential to realize the full promise of CRVS and identity management systems. The compendium also highlights the need for further research and gathering good practices from countries that are working to address these challenges. We hope this Compendium's message will inspire governments and other stakeholders to make the necessary investments in strengthening these foundational systems.

The Centre of Excellence for CRVS Systems at the International Development Research Centre (IDRC) and the Global Partnership for Sustainable Development Data were both announced in 2015 when world leaders united around the urgent need to advance sustainable development and promote a life of dignity for all. Both institutions believe strongly in the right of all people to be legally recognized, to have their birth, death and other vital events registered in order to protect their fundamental rights, to facilitate accesses to social services, and to participate fully in economic and political life.

We both share a common commitment to the SDGs and particularly to meeting target 16.9 to "provide legal identity for all, including birth registration."

We have no doubt that this compendium will serve as a valuable resource, now and in the years to come, for all stakeholders working to improve people's lives. We urge you to make use of this resource and welcome your collaboration as we strive to ensure that the SDGs deliver on the aspiration to leave no one behind.

Jean Lebel, President, IDRC

Claire Melamed, CEO, GPSDD

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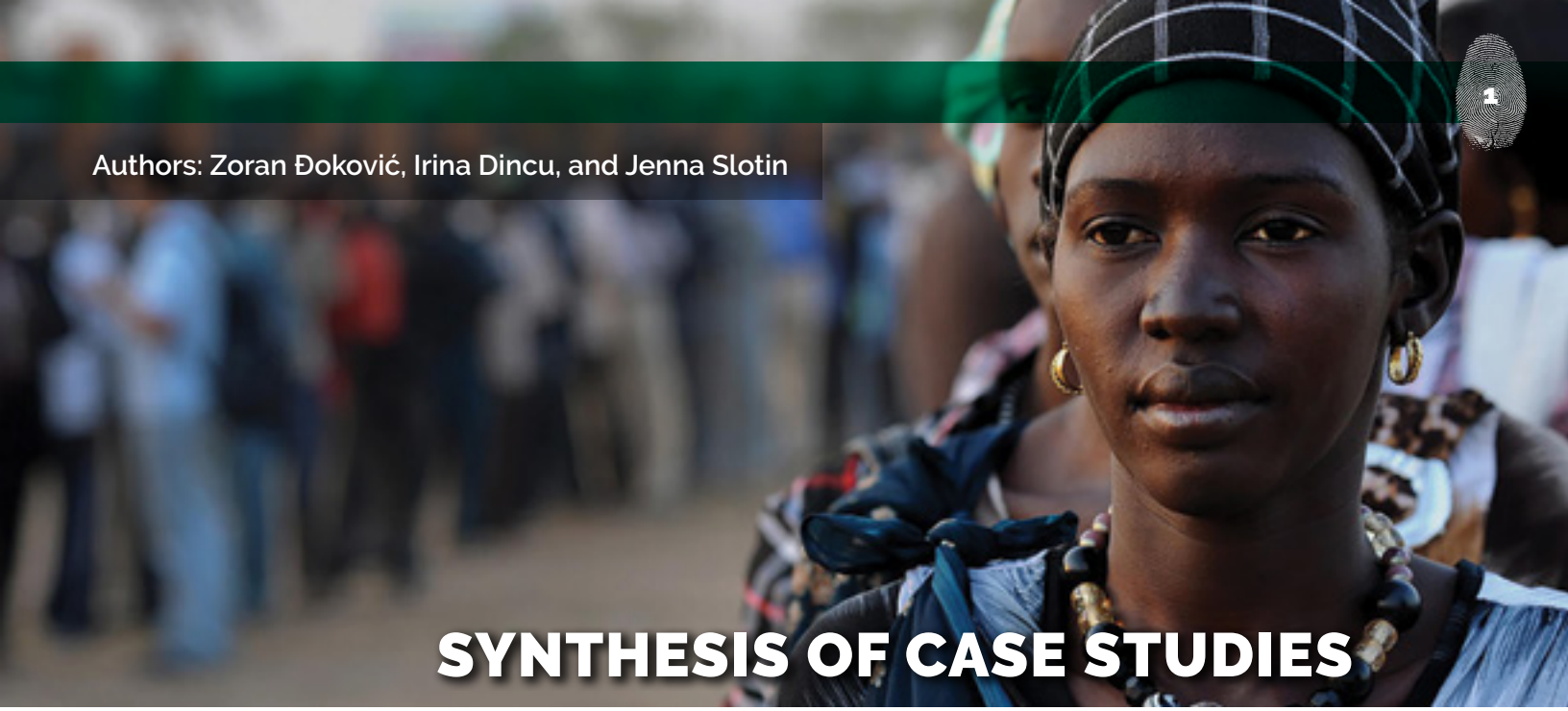

SYNTHESIS OF CASE STUDIES

UN Photo/Tim McKulka

Introduction

As the world strives to implement the Sustainable Development Goals (SDGs), meeting target 16.9 – "provide legal identity for all, including birth registration"[1] – is essential to fulfill the aspiration to leave no one behind. As enshrined in the Universal Declaration of Human Rights, everyone has the right to be recognized as a person before the law, and states have an obligation to create legislative and administrative frameworks that enable individuals to be recognized by the state. The SDG Agenda recognizes that civil registration and vital statistics systems are critical for monitoring the implementation of the SDG Agenda. Current birth registration coverage is not adequate to meet this target, even among countries with functioning civil registration systems. According to the UN's 2019 Sustainable Development Goals Report, the average birth registration rate globally is just 73 percent, and less than half of all children under 5 in sub-Saharan Africa (46 percent) have had their births registered.[2] Furthermore, only 25 percent of the world population lives in countries where more than 90 percent of the births and deaths are registered, and most of these countries are high-income countries. The latest data from the World Bank estimates that 1 billion people cannot legally prove who they are for lack of recognized identity documentation. These figures show how far behind we are in providing people with the fundamental pathway to accessing basic rights and opportunities.

Civil status includes a set of elements that individualize a natural person as a holder of rights and obligations, and help to establish the legal standing of a natural person in a family and in a society. Through the civil status elements, one is able to establish whether a person is married, single, or divorced, whether he or she was born in or out of wedlock, or whether he or she was adopted, as well as whether upon dying, his or her capacity as a holder of rights and obligations has ceased. Civil status rests upon relations resulting from parenthood, relationship, and/or marriage. The essential element of civil status is the legal standing of a natural person in relation to his or her family.

1 https://unstats.un.org/sdgs/metadata/?Text=&Goal=16&Target=16.9.

2 https://unstats.un.org/sdgs/report/2019/The-Sustainable-Development-Goals-Report-2019.pdf

At present, approximately 50 percent of the world's deaths are not registered. Of the deaths that are registered, cause of death is often not recorded or properly codified. Registration of other vital events, such as marriage or divorce, is equally unsatisfactory, affecting the ability of individuals to exercise a range of human rights – with particularly negative consequences for women and their rights emerging from registered marital status.

A number of international conventions related to fundamental human rights call for regulation of the registration of civil status acts and facts for all natural persons, regardless of their nationality or statelessness. Thus, the Universal Declaration of Human Rights provides the fundamental right of persons to marriage, the right to health, the right to education, the right to work, and the right of ownership. These are rights that cannot be safeguarded if a person is denied the right to register civil status acts and facts.

The International Covenant on Civil and Political Rights (1966) provides the right of any child, without any discrimination as to, among others, race, colour, sex, national or social origin, to be registered immediately after birth and to have a name (Article 24). The Covenant also safeguards the right of any person "of marriageable age, without any discrimination, to marry and to found a family" (Article 23). This right presupposes the conclusion of the legal act of marriage before a civil registration official under the law, the drawing up of the marriage record in the civil registration book, and the issuance of a marriage certificate.

UN Photo/Kibae Park

The Convention on the Rights of the Child, adopted by the General Assembly of the United Nations on 20 November 1989, provides the fundamental right of any child, "without discrimination of any kind, irrespective of the child's or his/her parent's or legal guardian's race, colour, sex, language, religion, political or other opinion, national, ethnic or social origin, disability, or other status," to be registered immediately after birth, to have a name, the right to acquire a nationality, and to the extent possible, to know his or her parents and to be brought up by them (Article 7, paragraph 1 corroborated with Article 2, paragraph 1). The States Parties to this Convention assumed the obligation to implement these rights, giving particular attention to cases where children may be, in the absence of such rights, in a situation of statelessness (Article 7, paragraph 2), hence the fundamental right of every child to be registered immediately after birth, without discrimination. The birth certificate represents a vital prerequisite for the child to be able to enjoy the rights set forth in the Convention. This is why the registration of births, in particular, and of the other civil status acts and facts in general, need to be recognized and safeguarded by the law regardless of nationality, ethnic origin, race, sex, or other criteria. To this end, the special importance of registering the birth of children, including children of foreign nationals, of refugees, or of asylum seekers has also been emphasized by the Committee on the Rights of the Child as the monitoring body of the Convention.

Also, the Convention Relating to the Status of Stateless Persons (1954) provides the right of stateless persons to enjoy fundamental rights and freedoms, including the right to identity. The Convention and Protocol Relating to the Status of

Refugees (1951) sets forth the right of such persons to the recognition of their personal status and of the rights that emerge from their personal status, such as those resulting from marriage, hence the observance of the right to register the birth of children or to have their death registered.

The expansion of digital identity, e-governance, and biometrics technology has rapidly increased interest and investment in identity systems by governments, development partners, and private sector actors. This rising interest offers opportunities to address the problem of lack of legal identity among people who do not possess any state-recognized identity credentials that help them prove who they are. However, the rollout of new identification systems, or reforms to existing identification systems, has sometimes taken place at the expense of strengthening civil registration. Instead, the civil registration system should stand as a foundation for a broader identity ecosystem upon which information other identification credentials are issued. This can perpetuate the exclusion of certain population groups and produce incomplete and unreliable population registers, as these are not continuously updated based on vital events, including birth, marriage, and death. Moreover, a weak civil registration system limits governments' ability to use the data for planning and service delivery, and results in wasting public resources on investments in systems that are not well-used beyond a single event, such as an election cycle. This exclusion particularly affects the population that is below the eligible age for getting a national ID card. A weak civil registration system places this category of the population at the highest risk of lacking state recognized identity.

The lack of civil registration records for large proportions of the population creates additional challenges for governments that have yet to decide how to reform and strengthen their CRVS and identity management systems. There is also a lack of understanding and guidance on how civil registration and identity management systems should be linked. In many countries, this is a consequence of weak civil registration systems lacking both in terms of supply of registration services and demand for registration from the population. In addition, traditional paper-based processes are moving into the digital realm, forcing authorities to rethink and redesign registration business processes linked with the registration of identity information and the issuance of identification credentials.

A holistic approach to civil registration and vital statistics (CRVS) and identity management either integrates or strengthens cooperation between these elements through a conducive legal framework and effective institutional arrangements, ensuring the universal registration of identity from birth until death. Technical interoperability has provided a range of benefits in ensuring that all categories of population from birth to death reflect their identity information in the system. It has also proven to be successful in ensuring a sustainable and reliable identity ecosystem. Such a system can effectively verify people's identity in a foolproof manner or with ironclad certainty, maintain an up-to-date repository of identity information, and produce timely and accurate population data.

This compendium documents the experiences of six countries – Armenia, Ecuador, Kyrgyzstan, Namibia, the Netherlands, and Peru – that have pursued a holistic approach. The mix of countries reflects diverse experiences in building identity ecosystems in different parts of the world with different constitutional and legal systems, administrative traditions, and institutional arrangements. It draws out the good practices employed by the different countries and highlights how their very different starting points were not an obstacle to building their identity system around a holistic approach. It also highlights that there are many ways to adopt a holistic approach, all of which can achieve positive outcomes for people in terms of rights and benefits.

Photo: Arne Hoel / World Bank

The overall aim of the compendium is twofold: to offer good practices and lessons that other countries can learn from as they build a robust, trustworthy, and inclusive identity system, and to contribute to the global discourse on advancing legal identity through a holistic and integrated approach.

More specifically, the compendium seeks to:

- Provide evidence of the benefits of a holistic approach to CRVS and identity management, where civil registration and identity management systems mutually support each other and work hand-in-hand to ensure the credibility and integrity of both systems.
- Raise awareness among identity management authorities and custodians of functional registers of the critical importance of civil registration as a provider of legally valid evidence of identity (where this is the case) and changes in identity data between birth and death.
- Raise awareness among civil registration authorities of the opportunities for advancing civil registration systems and increasing registration coverage that come as a result of tighter cooperation or integration with identity management systems and other identity ecosystem actors.
- Raise awareness among national stakeholders, including development partners and governments, of the importance of investing in the identity ecosystem in a holistic manner.

Across the six case studies, there were five recurring messages:

1. **A strong civil registration and vital statistics (CRVS) system that registers all vital events from birth until death for the whole population is an essential precondition for the implementation of a holistic identity system.** It is also essential to ensuring the benefits that come with it. A strong CRVS system is uniquely positioned to continuously provide cost-effective and up-to-date identity information for the population.
2. **Other components of an identity ecosystem, including the issuance of identification credentials and functional government systems, rely on civil registration records as the only source of up-to-date identity data.** This ensures that identity information is registered once, and then used across other government systems as long as that processing is regulated by law.
3. **The digitization of CRVS and identity management systems, together with other government functional systems, enables more efficient ways for processing identity information.** In other words, it allows for the creation of digitized civil registers or population registers, as well as the higher technical integration of CRVS and identity management systems, either as a single system or as several interoperable systems.
4. **The benefits of a holistic approach span several aspects of governance, including ensuring people's rights, improving service delivery, reducing corruption, and leaving no one behind.** A holistic approach can also help drive better decisions and track progress against the SDGs by strengthening vital statistics and ensuring more accurate population data.

5. **There are four key elements essential to a conducive enabling environment for pursuing a holistic identity system.** First and foremost is the political commitment from key government stakeholders to ensuring that all vital events from birth until death for the entire population are registered in a timely manner. Once this essential precondition is achieved, the efficient sharing of up-to date identity data requires a legal framework that enables data sharing. It also requires other changes to support the holistic approach: a data privacy and protection framework, as well as technology ownership from the outset to mitigate possible vendor lock-in and ultimately create a system that citizens can trust.

This synthesis brings together good practices from across the six case studies, along with the common messages and learnings gained from exploring the different country experiences. It begins with basic definitions and a discussion of what is meant by the holistic approach to civil registration, vital statistics, and identity management. It includes a discussion about why it is important and the role of digitization in advancing a holistic approach. The synthesis highlights different strategies employed by countries to drive integration across civil registration and identity systems, including how the transition from paper to a digital system has varied across countries.

Next, it describes the benefits of a holistic approach to vital statistics and how sharing identity information with other functional registers leads to benefits in terms of governance and cost savings. It provides examples from the six countries. Finally, it describes the key elements of a conducive, enabling environment for integrating civil registration and identity systems.

Definitions

Civil registration "is defined as the continuous, permanent, compulsory and universal recording of the occurrence and characteristics of vital events pertaining to the population, as provided through a decree or regulation in accordance with the legal requirements in each country. Civil registration is carried out primarily for the purpose of establishing the documents provided by the law."[3]

Vital statistics "constitute the collection of statistics on vital events in the lifetime of a person as well as relevant characteristics of the events themselves and of the person and persons concerned. Vital statistics provide crucial information on the population in a country."[4]

While there is no internationally agreed definition of **identity management**, the term refers to the issuance of proof of legal identity to each individual by a government authorized entity and the maintenance of systems for managing information and documents associated with such identity.

A **population register** is an individualized data system – a mechanism of continuous recording, and/or of coordinated linkage, of selected information pertaining to each member of the resident population of a country in such a way to provide the possibility of determining up-to-date information concerning the size and characteristics of that population at selected time intervals. The method and sources of updating should cover all changes so that the characteristics of individuals in the register remain current.[5]

3 United Nations. 2014. Principles and Recommendations for a Vital Statistics System. New York. Paragraph 279.
4 United Nations. 2014. Principles and Recommendations for a Vital Statistics System. New York. Paragraph 1.
5 United Nations. 2014. Principles and Recommendations for a Vital Statistics System. New York. Paragraph 454.

The term **identity (eco)system** used in this document comprises verification, registration, management, and conservation of personal data of citizens as well as non-citizens on the state territory with the goal of establishing a unique legal identity within the jurisdiction. Identity ecosystem includes all the data from the civil registration of a particular person, as well as other attributes, such as a unique number and/or biometric data, including identification credentials issued by an identity management agency. These serve as the basis for the verification of identity (for example, passport or national ID cards).

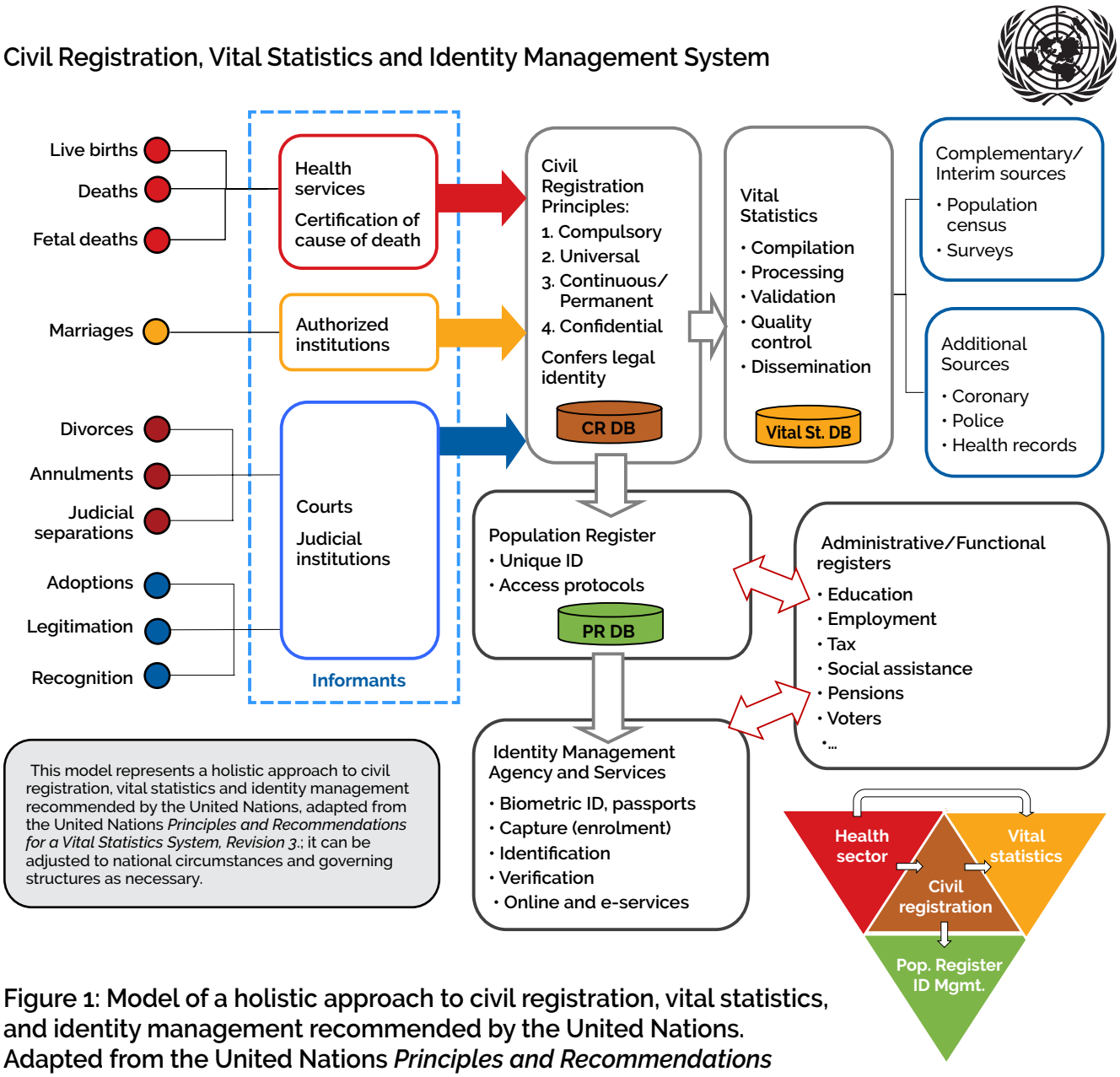

Figure 1: Model of a holistic approach to civil registration, vital statistics, and identity management recommended by the United Nations. Adapted from the United Nations *Principles and Recommendations for a Vital Statistics System, Revision 3*.

Holistic approach to civil registration, vital statistics, and identity management

In most countries, the administrative framework for the registration, management, and authentication of identity information is a complex system. These systems are operated by government or regional authorities (in cases of decentralized state organizations). These identity systems comprise three main components. The first is a CRVS system, which caters for the registration of vital life events for the population on state territory, based on notifications from other authorities, such as the ministry of health, police, magistrates, and courts (including parents or family members, if the birth or death occurs at home). The second is the identity management system that caters for the issuance of government recognized identification credentials (national ID, travel document, etc.). Other than providing the important function of conferring legal identity to individuals, countries' identity systems have acquired the important function of sharing identity data with government users, as provided by law, who store this information in functional registers, to enable them to fulfill the basic rights of people through the efficient delivery of government services. These functional registers operated by government represent the third important element of an identity ecosystem. Some examples of such functional registers are voters' lists, social benefits registers, tax registers, driver's license registers, cadastral systems, and property registers.

Before a single source of up-to-date identity information was introduced, governments experienced a range of problems resulting from proprietary ICT systems of different governance components which were operating in isolation from one another, often entirely dependent on support from external vendors, and unable to share and make use of data from other systems. This resulted in a duplication of efforts across government

Photo: Simone D. McCourtie / World Bank

systems, especially in the context of enrollment and updating of identity data across various systems. Overcoming these problems was the main motivation behind significant investments in the implementation of a holistic approach to CRVS and identity management. The goal was to build a coherent system that stands as a single source of up-to-date identity data for all other government functional systems.

As each case study demonstrates, a civil registration and vital statistics system with near universal coverage that operates as a compulsory and permanent process is a precondition for the implementation of a holistic identity ecosystem. This fundamental premise of a holistic approach reflects the understanding that identity is not static and that it is updated with new layers of information as vital life events occur. A CRVS system is designed as an administrative framework that, when implemented properly, reflects all new identity information in a timely manner as vital events occur. For instance, registration of birth is captured as the earliest moment in a person's life when her/his identity information is recorded by the state. From that point onwards, the state recognizes the person before the law. Later in life, a person can change their name, surname, or sex, and marry and divorce several times. This affects the identity data of that person and equally affects the position of the person in terms of legal protection of specific rights linked to property, family law, etc. Finally, death registration will

UN Photo/Ky Chung

end the person's civil status and retire their legal identity, ending their capacity as a holder of rights and obligations upon death. Death registration will also influence a range of services and benefits that the person was enrolled in while still alive. Issuance of identification credentials represents a snapshot of a person's identity information at the point of requesting the credential, such as national ID. These documents are issued periodically, and while government can enroll users in specific services using information from identification credentials, it is understood that the information on these documents might not always be up to date. (For details, see the Netherlands case study – Figure 5.6).

As reflected in all six case studies, the contemporary approach to civil registration and civil identification is converging towards introducing interoperability between CRVS and identity management systems. This is paving the way for the implementation of a holistic approach to civil registration and vital statistics and identity management systems. The contemporary understanding of identity management systems underlines the importance of interdependence of civil registration and identity management for ensuring the integrity of the whole system.

The strengthening of identity management systems and country-wide enrolment in national ID card programs are often recognized as critical for ensuring the implementation of SDG Target 16.9 – legal identity for all. However, in practice, many countries, including all six countries in the case studies, demonstrate that country-wide enrollment in national ID card programs can only become credible and sustainable over a long period of time if they are founded on reliable, permanent, continuous, and universal civil registration systems.

The practices of all six countries also demonstrate that civil registration and identity management systems mutually reinforce one another, and, that legal, administrative, and technological interoperability between fully developed CRVS and identity management systems are crucial for ensuring the accuracy of identity records in all systems.

In all six countries, CRVS systems represent the foundational administrative framework for registration of identity information, and for collecting and generating vital statistics. The value of a CRVS system derives from the fact that it is designed as a compulsory, universal, and permanent process of recording the vital life events of every individual. Their systems are designed to ensure the registration of identity information right after birth, the timely registration of other layers of identity information, the registration of other vital events later in life, and finally, to end legal identity in government systems upon registration of death. Only then is the civil registration system in a position to provide up-to-date identity information to a country's identity management system in order to support the issuance of identification credentials based on state recognized identity information.

The mutually reinforcing role of identity management and civil registration systems is further demonstrated at the point when a person approaches a civil registration authority to register

vital events. All case studies demonstrate that the registration of a vital event is conditional on the presentation of an identification document, which is further verified for authenticity in the database of issued identification credentials.

Case studies offer good practices in the context of global trends

As much as it is the case in the six countries in this compendium, in many countries around the world, identity systems have traditionally reflected the idea of a holistic approach to CRVS and identity management. This approach has been part of an administrative tradition to issue national identity cards in most European countries, post-Soviet states, Latin America, and some parts of South Asia. When these systems were originally developed, they functioned as paper-based processes built around detailed procedures for the registration of vital events and the keeping of paper-based registration records. These procedures also extended to cover the paper-based communication of registered vital events to generate vital statistics, and provide paper-based certificates as proof of identity later in life when applying for identification credentials. These identification credentials were then used to enroll in other government operated functional registers.

Over the last two decades, the digitization of CRVS and identity management has created new opportunities and an enabling environment to collect registered identity data in a digital format and in a coherent database architecture. These new opportunities came with the possibility of dramatically increasing data sharing efficiency. The digitization of identity systems that followed took advantage of these new opportunities, and has resulted in significant changes in which the registration business processes can be designed, including how registered vital events can be defined, configured, created, stored, shared, and processed. Nevertheless, digitization also resulted in new types of risks to personal privacy, among others, underscoring the importance of a strong framework for the protection of personal data, and ensuring that data collection, storage, and sharing take place in a regulated environment.

As a general rule, even under legacy paper-based systems operated by countries that applied a holistic approach, identity information of legal value could only be registered through the registration of vital events. Certified information from civil registration records was recognized as proof of identity upon which other identification documents were issued, or used for enrolling identity information in other registers linked with specific services. The introduction of technology has helped increase the efficiency of data sharing and processing. Digital processing of identity data further enabled the creation of systems that increase the efficiency of data processing and sharing between different components of the systems. These newly introduced systems are commonly referred to as digital national population registers. Digitization, as well as new tools, such as digital national population registers, offered much better means to integrate different systems into a seamless system that reinforces a holistic approach to civil registration, vital statistics, and identity management. Individual experiences of countries, as elaborated in the case studies, show that when it comes to the process of digitization of these services, each country has developed an approach that best fits their national circumstances.

Photo: Li Wenyong / World Bank

Key strategies for strengthening the holistic approach to CRVS and identity management

A key element of the systems examined in all six countries is that the civil registration system operates as a continuous, compulsory, universal, and permanent process, and that it has achieved coverage completeness above 90 percent, and often close to 100 percent. All other parts of the identity system are built on this core assumption and operate with the understanding that at any point when identity data is required, up-to-date identity data can be obtained from the civil registration system.

Technological interoperability and the use of unique identification numbers

What is common to all case study countries is that the introduction of digitized systems entails that the identity data in civil registration systems is stored and processed in a digitized format. Equally, all processes linked with the issuance of identification credentials (national ID cards, travel documents), and the production of vital statistics, are digitized and the information on issued identification credentials is also processed and kept in digital format.

Under the legacy of paper-based systems, identity information was communicated between authorities by means of paper certificates. These were communicated by concerned individuals who, under relevant procedures, had to visit the location where the information was registered, usually the civil registration office where the vital event was registered, to obtain the certificate and deliver it to identity management officials at the point of requesting a national ID.[6] Digital interoperability[7] between digitized civil registration and identity management systems automate these processes, removing the need for citizens to invest their time and money in order to communicate information between concerned authorities. As the case studies underline, the resulting efficiency in data sharing not only contributes costs savings for citizens, but also contributes to considerable improvement of overall governance processes.

To enable interoperability, both systems need to be built in a way that enables the efficient identification and retrieval of information belonging to the same person. All six countries have introduced the use of unique identification numbers (UINs), which are assigned to each citizen as a mandatory requirement under the relevant law. This identifier[8] is used by the identity and registration databases to efficiently look up all records pertaining to a specific person. Citizens can also use this number in interactions with the authorities to facilitate retrieval of their personal data in government-operated databases.

The use of a UIN has become the norm in many countries, and the case studies provide more detail

6 Including to be enrolled in a functional register to gain access to government provided services.

7 Interoperability is the ability to access and process data from multiple sources without losing meaning and then integrate that data for mapping, visualization, and other forms of representation and analysis. Interoperability enables people to find, explore, and understand the structure and content of data sets. In essence, it is the ability to 'join-up' data from different sources to help create more holistic and contextual information for simpler and sometimes automated analysis, better decision-making, and accountability purposes. See http://www.data4sdgs.org/initiatives/interoperability-data-collaborative.

8 Digital databases do not necessarily operate directly with UINs but rather with an administrative identification number that is a number derived from the original UIN.

on the implementation of the UIN in each country.[9] The UIN is at least 10 digits, and is designed as a logical construct (indicating date of birth or birth geographical location code), or a random number. Random numbers are increasingly seen as the preferred option for ensuring privacy protection, for late registrations where data for the birth is not known, and for pre-generating numbers for use in remote locations not connected to the Internet.

Instituting a UIN from birth has widespread benefits, not only for establishing and maintaining a holistic identity system, but for many other administrative data systems. Establishing interoperability between data sources, with the necessary regulation and privacy protection, can help government planners and policymakers develop and observe how various policies and programs interact, and how this impacts the intended beneficiaries. This can feed into the design of more targeted services and benefits.

However, it should be noted that UINs carry risks, as they can facilitate the linking of personal information across all databases that use them, allowing comprehensive profiling of the persons concerned. Hence, strong legal, institutional, and technical safeguards are required to protect UINs from unauthorized access, limit their use to the extent necessary for the delivery of public services, and prevent their overly intrusive use. Function creep, for instance, by allowing the private sector to use UINs, should be avoided. Measures to prevent its use to match individuals across multiple organizations where there is no legal basis to do so should be taken. Alternatives to the use of a single personal UIN across all identity system ICT platforms, such as derived encrypted sectoral UINs or tokenization of UINs, should be given priority.

Diverse implementation modalities and institutional arrangements

The implementation experiences of the six countries diverge on institutional arrangements, reflecting the very different circumstances of each country. Among the simpler approaches, civil registration records are aggregated in one central civil register and implemented as an electronic database that is interoperable with the identity management database. In Ecuador, Kyrgyzstan, Namibia, and the Netherlands, these are integrated into one system operating as a digital national population register that stores or links to personal biometrics.

Recognizing the benefits of aggregating different types of personal information, population registers in some countries have expanded to include other types of personal data required by the government for service delivery, such as citizenship, residence, right to vote, and other information. These systems can be implemented as one coherent database architecture, or as a system of interconnected and interoperable databases, often at different locations and operated by different authorities.

Photo: UNICEF / Nahom Tesfaye

9 Some European countries with identity systems that benefit from the use of UINs to link identity data across different government ICT platforms include: Albania, Andorra, Armenia, Azerbaijan, Belarus, Belgium, Bosnia and Herzegovina, Bulgaria, Czech Republic, Croatia, Cyprus, Denmark, Estonia, Finland, North Macedonia, Georgia, Hungary, Ireland, Italy, Kazakhstan, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Moldova, Montenegro, Norway, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Turkey, and Ukraine.

The different modalities for implementing a digitized identity system show that adopting a holistic approach does not necessarily mean that all aspects of the identity system need to be the responsibility of a single agency. The systems can be technically integrated while the different parts of the system are operated by different authorities.

For example, in Armenia, the digitized civil register is under the authority of the Ministry of Justice, while the population register is under the authority of the police, who are also responsible for identity management. Each time a new vital event is registered in the civil register, the information is communicated digitally to the police, where it is used to update the personal record in the population register.

In the Netherlands, municipalities are responsible for civil registration and for maintaining the municipal population register, including identity management. Registered vital events are digitized and entered into the municipal population register where the person resides. When a person moves to another municipality, the digital personal file is sent electronically to the destination municipality. The government runs an elaborate ICT system that supports the operation of 335 municipal population registers.

In Ecuador, Kyrgyzstan, Namibia, and Peru, civil registration and identity management are under the responsibility of a single authority. In Kyrgyzstan and Namibia, these agencies operate elaborate ICT systems that are built around traditional paper-based civil registration and identity management systems that are integrated into a single system, referred to as the population register. These population registers have civil registration and identity management sub-systems as well as a residents' register, citizenship register, or other types of personal data defined under the law as being part of the population register.

In Peru, where both civil registration and identity management are the responsibility of a single authority, the digital platform is built around two databases: a digitized civil register and a digitized identity management system. The digitized civil registration system is designed as a database of scanned vital events records. Each digitized record also contains a person's UIN, which allows system operators to look up all registered vital events linked to that person. The identity management system can also look up this information in the civil register database anytime a person applies for an identity card. Each time a new vital event is registered and digitized, it is communicated to the identity management system, and the operators will be notified of this change each time the person reapplies for an identity document.

This variety of implementation modalities in each country underlines the overarching commitment of the government of each country to build a framework where civil registration and identity management systems work hand-in-hand, but also respects the different circumstances and interests of each country.

Certification of identity data

Digitized records and the establishment of interoperable systems has completely transformed the process of certifying and sharing identity information. In the past, identity information could only be communicated in the form of an official paper certificate, but today authorities can verify this information at the source database because digitized vital event records have been given a legal value. This has enabled numerous uses and contributes significantly to the efficiency of the public governance system.

In Ecuador, for example, the Ministry of Economic and Social Inclusion (MIES) has partnered with the National Civil Registration and Identification Agency (DIGERCIC) to have real-time access to information from the DIGERCIC designed online platform where live births are certified. This allows MIES to perform a rapid vulnerability assessment and automatically enroll beneficiaries into its nutrition programs.

In Kyrgyzstan, identity information from the national ID register and address information from the residents' register has enabled the State Registration System to develop an application that can extract and print voter lists directly from a unified population register in line with the predetermined geographical boundaries of polling stations. The application also crosschecks voter identity information against information in the civil register.

Even if paper-based certificates are being presented, authorities often prefer to rely on online platforms to verify the authenticity of identity documents (as elaborated at greater detail in the Armenia and Ecuador case studies).

The process works for civil registration, as well. Persons who turn up to register vital events will generally be identified by inspecting their identification credentials. Even though identification credentials are often produced using a more secure medium containing cutting-edge security features, authorities will also verify the authenticity and validity of the presented document directly in the database operated by the identity management authority. Even if the document presented is valid, in most cases, the system design will not allow manual copying of the data from the identification document. Instead, the most up-to-date identity data will be copied directly from the civil or population register.

In the Netherlands, for instance, following the registration of information from the vital events act in the population register, this digital record is enough proof of registered vital events that can be accessed online by all public administration authorities and service providers. As the information is already available online, paper birth certificates are not provided upon completing birth registration and can only be issued if specifically requested.

In the case of birth registration in Armenia, registration officials can access all of the data

Photo: UNICEF / Zerihun Sewunet

needed for birth registration — such as data on the mother of the child, child's sex, time of birth, and number of children born — through the electronic system of medical certificates. The main information required by registration officials is a 12-digit code on the medical certificate, which allows them to access all the information in the electronic system. After being digitized, paper records will only be consulted in instances where information in the digitized system is being disputed, or if a person moves to live abroad.

Other applications: e-notification

Digitized systems for civil registration do not have to be built to cater solely to the registration of vital events. In many countries, these systems have been expanded to cover notifications of births and deaths at medical facilities. To that end, in Armenia, Ecuador, and Namibia, a dedicated software that is an extension of the main digital civil registration platform has been introduced at medical facilities to ensure essential data about the child's identity, such as the date of birth and place of birth, is captured immediately after birth, as well as medical information relevant for the compilation of vital statistics. In Namibia, the mother's identity is also authenticated by populating her particulars directly from the national population register. This process facilitates the registration of most of the information required for the registration of vital events, as it will already have been entered into the system before the request for registration is formally completed, increasing data accuracy and integrity.

Lessons from the transition from paper-based to digital identity systems

Strengthening the holistic approach to CRVS and identity management by transitioning the system from a paper-based to a digital system requires time. In many countries where digitization has been initiated, it is still an ongoing process. Except in the Netherlands, all other case studies reveal that countries have only been able to digitize a portion of their civil registration archives to date. Nevertheless, they all operate digital registrations on an ongoing basis and demonstrate that the lack of all past vital events records in digital format has not been an obstacle to developing a holistic identity ecosystem. These circumstances have implications for countries that are yet to build their identity ecosystems with a holistic approach. In the absence of vital life events records, identity data can be legalized in due process; for instance, as part of the issuance of identification credentials. But that also means that all other layers of identity data would be reflected as a result of the registration of vital events.

All six countries had very high rates of civil registration coverage before embarking on the digitization process. Accordingly, any country that is thinking of strengthening its identity system should actively work towards improving civil registration rates and sustaining them at a high level through innovative ways. In Ecuador, for example, DIGERCIC managed to close the last gaps by having 15 mobile units, which are set in one location temporarily, provide services twice each week. It also organizes special brigades that bring civil registration and identification services to remote areas and vulnerable populations. These strategies ensure that services reach remote areas and vulnerable citizens including rural populations, Indigenous communities, and African Ecuadorians.

In Peru, the National Registry of Identification and Civil Status (RENIEC)'s Identity Restitution and Social Support Department organizes monthly deployments to rural, remote, and Indigenous communities to bring civil registration and identification services closer to the population. These services, aimed at vulnerable populations, are provided free of cost. Namibia has similar programs.

As the case studies show, the key to the digitization process is the establishment of the initial database storing digitized identity records. This database can be created as a result of the nationwide issuance of identification cards or, as in the case of Kyrgyzstan, through the mass enrollment of biometric data in a dedicated identity database. This database can then become the backbone of the population register. In parallel, countries also began digitizing their historic identity data and integrating these records in a population register. As the experience of many countries shows, this process can be very expensive and take years to complete, and countries have come up with different strategies in deciding which records should be prioritized for digitization.

Vital statistics

Civil registration, a component of a broader civil registration and vital statistics system, is designed with the view to collect the following in the process of the registration of vital events:

- Facts about the event and information that is legally required for registration and defines the identity of the person; and
- Characteristics of events that are mainly required for statistical purposes.

Some of the legal information that forms part of a person's identity is also required for statistical purposes (for example, the sex of the child whose birth is registered). While this information carries legal value in terms of the child's identity,

at the same time, it is important for statistical purposes to produce vital statistics by sex. Many other data that is critical for establishing the legal identity of the child is not required for statistical purposes (for example, first name, last name, parent's information). Similarly, in the case of death registration, some information registered in the process (for example, cause of death) is used for statistics purposes.

While the process of civil registration and vital statistics operates as one indivisible system, specific types of information collected as part of a single vital event registration business process are used to complete the registration of the vital event. These consist of collected information that describes the characteristics of a person's identity and the event. Wider sets of data that are relevant to the vital event, such as medical information surrounding birth or death, are collected specifically for generating vital statistics. While the medical information is not included in the registration record, the information set used for generating vital statistics is derived from identity information.

Vital statistics information registered as part of the registration of vital events is generally transmitted directly from civil registration authorities to national statistics authorities. This also means that this data is transmitted to the local or national population register. The population register requires only the data set that is needed to update its database and provide legal identity.

The quality of vital statistics increases dramatically when implementing a holistic approach to CRVS and identity management. All the case studies reveal that vital statistics benefit from near universal civil registration rates, which improves the reliability and quality of vital statistics. The ready availability of registration records facilitates the timely processing of vital statistics. As the cases of Armenia, Ecuador, and Namibia demonstrate, electronic civil registration platforms have been extended to incorporate modules that are operated in hospitals. This enables health authorities to incorporate an extended range of medical data that facilitates the processing of vital statistics. Aggregating all registration data in a single database, whether a civil register or a population register, facilitates the production of vital statistics.

Sharing identity information with other functional registers leads to significant benefits

Governments operate identity systems to fulfil the need of their citizens to be recognized by the state. A holistic approach to CRVS and identity management ensures that this process takes place in a legally defined environment, leaving little room for the arbitrary determination of a person's identity. A digital platform that shares up-to-date identity data supports a wide range of other government functions. Very often the digitization and strengthening of a country's identity system are driven by the need to improve other government services.

In Kyrgyzstan, for example, there was a widespread lack of trust in the voter registration process and the accuracy of voters' lists. This drove the government to invest in strengthening the identity system so it could reflect up-to-date identity data and be used as a source of reliable identity data for the compilation of voters' lists.

UN Photo/Marco Dormino

Equally, in the Netherlands, the entire system of social benefits and the tax system rely on the data from municipal population registers. The system in the Netherlands, which has been perfected over many decades, has reached the point where under the law, it is the duty of the government to retrieve identity data rather than request that citizens provide this data when interacting with authorities. Usually presenting a citizen service number, the Dutch version of a UIN, is sufficient for government authorities to retrieve all data required for enrollment in specific government services. The duty of citizens remains to register all vital events in a timely manner and to report to municipal authorities when they move their place of residence.

In the case of Peru, RENIEC has signed a total of 2,201 agreements with public and private institutions to give access to the identification register. This comes at a fee, particularly for private institutions, and becomes a source of revenue for RENIEC. Beyond this financial benefit, sharing information across registers has led to the better provision of nutrition subsidies for newborns and the development of a nominal register of children (a database of children aged 0 to 6 that collects information on 30 socioeconomic variables). It has also enabled the rollout of a pension scheme for people over the age of 65 who are living below the poverty line. Moreover, RENIEC is currently the institution that Peruvians trust the most according to recent surveys.

Civil registration and identity management systems have become the main provider of identity data for governance processes. They are used not only for enrollment in specific services, but also to assess how access to services needs to change as identity characteristics change. Marriage and divorce are events that typically effect a range of rights. But the most common trigger for changes in the delivery of services is the registration of death. Each case study highlights the range of government services that depends on the timely communication of updates in identity data. The Government of Namibia, for example, has incentivized death registration as a requirement for citizens to access social safety net program benefits relating to their deceased relatives.

By sharing data with other functional registers, civil registration and identity management systems generate substantial savings by reducing the need for other registers to build their own identity management systems. Furthermore, when built CRVS systems are inexpensive to maintain, this offsets what appears to be initially high investments in building a holistic identity ecosystem.

Financial benefits

All six case studies underline that identity system reforms are an integral part of achieving more cost-effective and efficient governance. While assessing the financial impact of identity system reforms was beyond the scope of this research, evidence collected in each of the countries suggests that countries have witnessed – or expect to see – that the financial benefits outweigh the initial high investments in system reform.

Ecuador's DIGERCIC estimates that overall investments in modernizing identity ecosystems will reach US$277.6 million. The financial benefits are expected to far outweigh that figure. For the period from 2010–2021, DIGERCIC's total revenues resulting from updated digital identity records, combined with social and economic savings, is expected to reach US$893.6 million.

In Armenia, some estimates suggest that the implementation of the e-government system, for which the electronic civil register and population register are fundamental building blocks, would reduce the cost of government services by 50 percent, dramatically reduce corruption, increase competitiveness, and add 3 percent to Armenia's GDP growth rate.

Authorities in the Netherlands do not have precise financial estimates, but the identity ecosystem is seen as a basic building block of the governance system. Digitized municipal population registers have since been seen as one of the key contributors to efficient governance in the Netherlands.

Creating an enabling environment for a holistic approach

The six case studies examined for this compendium highlight several critical elements that will create a conducive enabling environment for reforming the civil registration and identity management systems towards a holistic approach. Each of the six countries exhibited these elements to varying degrees:

- Strong political commitment from key government stakeholders, including those responsible for CRVS and identity management, as well as other government stakeholders that would be in a position to use identity data through interoperable platforms. This commitment should be the result of an institutionalized consultative process mandated to define institutional responsibilities and technical implementation models. High-level commitment should be extended in terms of providing adequate funding for the system reforms and for its functioning in the future.
- Overhauling the legislative framework to reflect the changes in business processes and institutional arrangements that will support a reformed identity system. The legislative framework should reflect any revisions to the business processes for registration, and any data sharing responsibilities of the identity system towards other government stakeholders.
- Prior to digitization, a well-defined data and privacy protection framework should be developed to define the rules for sharing identity data between government bodies. Electronic processing of personal data carries a wide range of risks in terms of unauthorized access and use of data for purposes not defined under the law or for which the data subjects did not provide explicit consent. Mitigating such risks is generally linked to the development and adoption of privacy and data protection legislation that defines the duties and responsibilities of organizations that process personal data. In the context of legal identity systems, attention should be given to measures that meaningfully limit access to personal data by government and other entities, and that prevent excessive linking of personal data across entities and databases. Sensitive information, such as biometric data, should be especially protected, limiting storage and use to an absolute minimum. The legislation further defines authorities in charge of the oversight and monitoring of organizations that process personal information, as well as the rights of data subjects who interact with organizations that process their personal data. Legislation and regulation should also be adopted with strong technical protection measures.
- Technical implementation and digitization of CRVS and identity management processes carries the risks of vendor lock-in. This can be addressed by building technical ownership from the onset, relying on technology neutrality and open standards.

In addition, each of the case studies further underlines key assumptions for developing a holistic approach to CRVS and identity management in those countries looking to strengthen underdeveloped civil registration systems:

- Although each of the six case studies underlines the critical importance of universal coverage and registration of all vital life events, the problem of creating demand for registration and achieving near universal coverage has been solved in the past. In these countries, strong demand for civil registration is largely taken for granted and is based on the high level of awareness among the general population that the registration of vital events and the registration of their legal identity are central to their interaction with the state and to entering into legal transactions. Authorities are aware that the lack of demand and the inability to reflect all vital life events will result in inaccuracies across the rest of the identity system, threatening the integrity of the whole system. That does not necessarily mean that building an identity system with a holistic approach in mind should be put on hold until the universal coverage of vital life events is achieved.
- The evidence suggests that, despite sustained investments in the strengthening of the civil registration system, and of the identification system across the globe, coverage of vital events tends to remain alarmingly low. The births of 95 million children in sub-Saharan Africa were never recorded, and 120 million children under the age of 5 in the region lack documentary evidence that a birth registration was made. Furthermore, death registration is extremely low to nonexistent in many countries, particularly in Africa. Marriage registration remains a problem in many countries, yet millions of women and children across the world report having been married before the age of 18 (110 million in sub-Saharan Africa alone). Countries that consider linking these two systems and increasing the registration of vital events might like to consider social and behavioural change interventions for sustainable change, as beliefs and social norms surrounding vital events at the community level might have an enormous impact on the uptake of services by the population. The strategies and programs that promote social and behavioural change are relevant to CRVS and ID programs as they seek to achieve the SDGs. Supporting policies and legislation, resources, and service delivery are critical. However, unless there is public engagement and empowerment, it will be difficult to achieve universal coverage for vital events.
- Even as countries work towards providing an appropriate supply of registration services and generating demand, it is important that reform strategy goals, objectives, strategies, business processes, and technology choices be guided by international good practices emerging from the implementation of a holistic approach to CRVS and identity management. As the reforms progress in terms of creating demand that is sufficient to ensure universal coverage and in terms of reforming the identity ecosystem to reflect good practices, these efforts will complement one another. Over time, they will converge towards a satisfactory level of efficiency and completeness.

Conclusion: A holistic approach is good practice and enables the development of other good practices

As these case studies demonstrate, there is a wide range of benefits for individuals, as well as for overall governance, when the system for registering and managing identity information is designed with a holistic approach in mind. Among others, it will fulfil the role of protecting and facilitating access to basic services and entitlements. The six case studies featured in

this compendium demonstrate that a holistic approach to CRVS and identity management systems has resulted in sustainable and reliable identity ecosystems in these countries. It has also helped to produce the necessary population and demographic statistics on a continuous basis for all geographical levels. However, to be in a position to take advantage of such a system, ensuring complete civil registration is the most important enabler.

While each of the country contexts vary, as did their approaches and institutional arrangements, each experienced positive social, economic, and financial results. Their systems, built with a holistic approach in mind, further benefited from the digitization of CRVS and identity systems. The establishment of interoperable systems transformed the process of certifying identity information, making it faster, more accurate, and less tedious. It has also resulted in more accurate population and vital statistics. Governments are better prepared to serve their populations because the information they use for developing policies and programs is more accurate and timely, and can be shared across government agencies.

However, the current coverage of vital events in many countries is not adequate to meet the SDG target of providing legal identity for all by 2030, particularly in the context of providing legal identity from birth. As this compendium demonstrates, the benefits resulting from the development of a strong identity system built on a holistic approach to CRVS and identity management underlines the importance of further investment, research, and development of policies aimed at strengthening the CRVS systems of countries with low registration coverage rates. Further to the development of adequate registration business processes, the importance of developing policies that would result in continued demand for registration should not be underestimated. To that end, good international practices are not sufficient, and they should largely

UN Photo / Eskinder Debebe

reflect and rely on social conditions and traditional values in the countries. Universal registration will unlock all other benefits and opportunities elaborated in this compendium, both for the population and the government. When all vital life events of an entire population are registered in a timely manner and sustained into the future, digital technologies and increased data sharing opportunities that leverage legal, administrative, and technological interoperability will create the basis for a range of services, many of which are elaborated in each of the case studies at greater detail.

ARMENIA

CASE STUDY 1

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Acronyms

CSARA	Civil Status Acts Registration Agency
EKENG	E-Governance Infrastructure Implementation Unit
EU	European Union
ID	Identity
ICT	Information and Communications Technology
UIN	Unique Identification Number

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Executive summary

Armenia's identity (ID) system is a good example of a system that is built on cooperation between institutions that are responsible for civil registration and identity management using a holistic approach to civil registration, vital statistics, and identity management. The country's experience in building an identity ecosystem also shows that the two building blocks of identity systems – civil registration and identity management – do not have to be under one agency to be done successfully. The system may work just as well if different agencies are responsible for different aspects of it.

A similar level of integration can happen if the two systems are entrusted to more than one agency, as long as these agencies' systems are interoperable so they can share information. Two cornerstones of identity ecosystems in Armenia are the civil register, under the Ministry of Justice, and the population register, managed by the Police. Business processes for civil registration and identity management that used to be entirely paper-based and manual now are mostly digital. Some parts of the systems still rely on paper records, as digitizing civil registration records archives is ongoing.

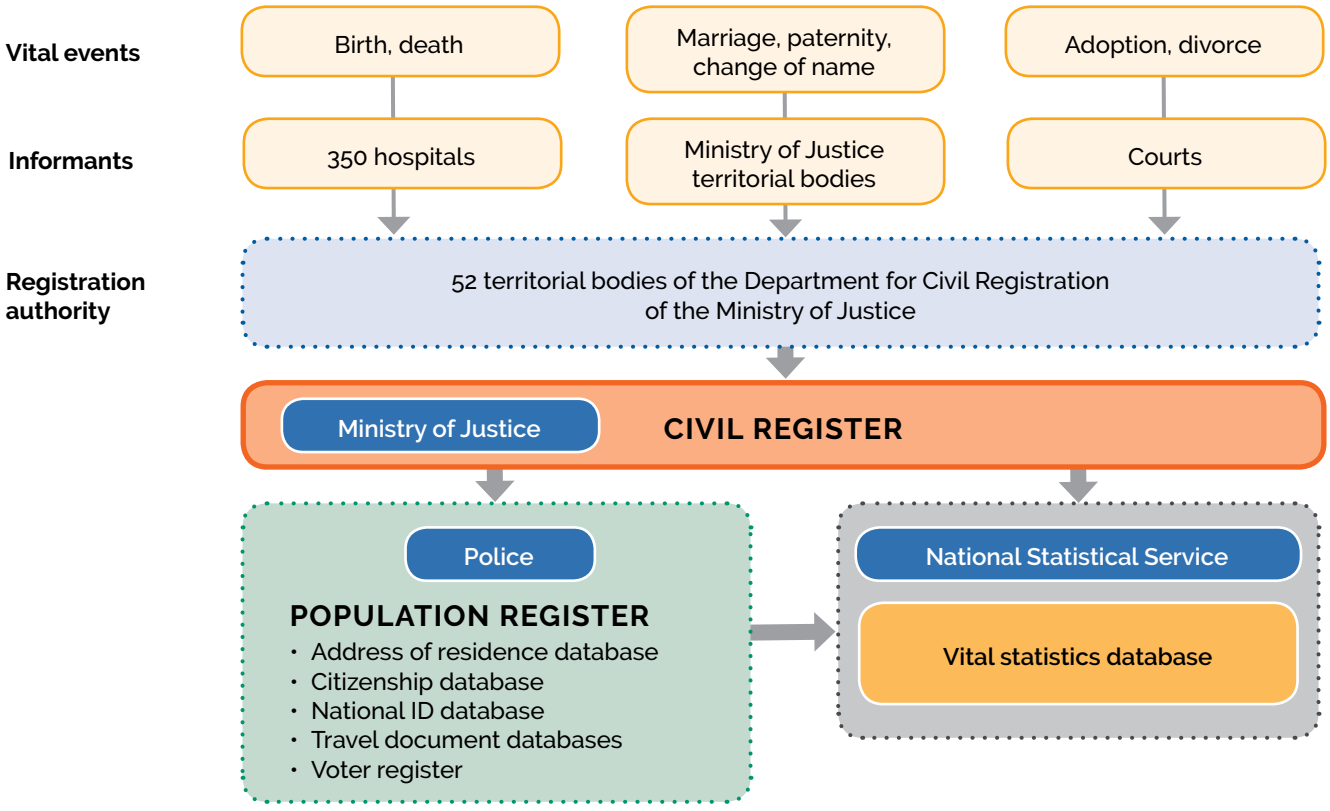

Figure 1.1: Armenia's identity system.

Source: Author

Like most countries that emerged from the former Soviet Union, Armenia inherited a well-developed system for registering vital events:

- Births;
- Deaths;
- Marriages;
- Divorces;
- Changes of name;
- Paternity; and
- Adoption.

In legal terms, the registering of vital events is seen as the first recording of identity information that the state recognizes. The modern civil registration system is fully digitized: all registered information is entered directly into the electronic civil register. The system enables the digital vital events records that belong to a specific person to be linked, so that their up-to-date identity information is available anytime.

The civil registration and vital statistics system is also a main source of identity data recognized by the state. The data is used for identity management and issuance of identification credentials.

The population register is the main tool the Police use to manage identity data and issue national ID cards and travel documents. By law, the population register also contains the data that supports granting citizenship and keeps records of residents in local communities by registering their home address.

The population register is an electronic database. It was created, and the stock data was built, using the data from the database of issued national identity cards. Over time, other personal data was added, as defined by law. In this way, the population register collects layers of identity data as they are registered in the electronic civil register. Each time a new birth is added to the civil register, this information – which includes identity attributes of the newborn – is automatically sent to the population register, where a new personal record is created. Each time new layers of identity information for that person are added in the civil register, the information is sent to the population register and is used to update the personal record. As well as identity information, the population register features information such as which identification credentials have been issued (national ID card or travel document), citizenship, and home address. Information about a person's death is used to change the status of the personal record from active to inactive, and to retire this identity in the system.

Identity data sharing also happens in the other direction. Each time a new vital event is registered and the names of informants are added to the civil register, this digitized platform automatically pulls identity information for the informants from the population register. The decision to rely on the population register as a source of identity data is linked to the fact that not all identity information in the civil register is digitized, and therefore is not available. The population register already stores data in digital format. Also, it usually stores a wider range of personal information (such as ID document number) than the civil register does.

The two interoperable systems can in this way provide up-to-date information to other users of identity data from these registers. This approach is a key part of the government's electronic data-sharing platforms. This platform was designed to allow all government systems to benefit from the processing of up-to-date identity data.

Summary of good practices

Digitizing civil registration processes offers more opportunities to share data, register vital events, and get registration certificates in any office of the Civil Status Acts Registration Agency (CSARA).

Including an e-health platform, which can be accessed at hospitals, is also useful. This means the government can collect most of the information it needs to register births and deaths at hospitals, where digital and paper-based medical certificates are produced. These are later used for digitized processes for birth and death registration, including sending the data from the certificates to the statistics authorities.

Linking the civil and population registers electronically allows the civil register to copy identity data of informants or applicants from the population register, instead of copying that data from an identification credential that a person presents.

Using an innovative platform to verify civil registration certificates has made it easy to verify that a document is authentic, both in Armenia and abroad.

Data interoperability among government-operated information and communications technology (ICT) systems allows government to decide which types of data (including identity data) each service can access.

1.1 Introduction

General information

Country name	Armenia
Surface	29,743 km^2
Geographic location	South Caucasus; it is a landlocked country between the Black and Caspian seas, bordered on the north and east by Georgia and Azerbaijan, and on the south and west by Iran and Turkey.
Total population	2.93 million (World Bank 2018)
Share of urban population	63.8%
Official language	Armenian
Civil registration and identity management agency	Ministry of Justice (civil registration) Police of the Republic of Armenia (identity management)
Birth registration rate	99.6%[1]
Death registration rate	Not available
Identification coverage	Not available

Table 1.1: Armenia country information.

Armenia prides itself on being the first nation to formally adopt Christianity (early fourth century). Despite periods of autonomy, Armenia came under the influence of various empires, including Roman, Byzantine, Arab, Persian, and Ottoman.

Under the old Soviet central planning system, Armenia developed a modern industrial sector. It supplied machine tools, textiles, and other manufactured goods to sister republics in exchange for raw materials and energy. Armenia has since switched to small-scale agriculture and away from the large agro-industrial complexes of the Soviet era. Armenia has two open trade borders: Iran and Georgia. Its borders with Azerbaijan and Turkey have been closed since 1991 and 1993, respectively. This is due to Armenia's conflict with Azerbaijan over the Nagorno-Karabakh region.

Figure 1.2: Armenia geographical map.

Disclaimer: The boundaries used on this map do not imply official endorsement or acceptance by the United Nations.

The foundations of Armenia's identity system were well developed under Soviet rule. Civil registration, which dates back to the early 1900s, is rooted in the recording of births and deaths by the church. This task was later institutionalized under state authority and the responsibility of the Ministry of Justice.

Identification credentials in the form of an internal passport were also introduced under Soviet rule and issued by the Ministry of Interior. An internal passport was issued using identity data kept in the residents' register, which Soviet authorities operated as means to record individuals with a permit to reside within a specific local community. The internal passport was used as proof of identity and also as a residence permit within a specific territory. Over time, it has been upgraded to include facial image and increasingly used as an identification document in interactions with the state.

Armenia's declaration of independence in 1991 led to changes in how the state registered and managed the population's identity information. In 1992, the official Armenian national identity card began to replace the Soviet internal passport.

By that time, civil registration records largely reflected all vital life events of people living in Armenia. Certificates from the civil register were used as the main proof of identity for issuing the Armenian national ID card. Issuing a national identity card was also an opportunity to digitize the identity management process and to create a state population register. Records and data for a specific person in the population register were linked using their social fund number.

KEY DATES

1991 Armenia declares independence after the Soviet Union is dissolved.

1992 An Armenian national ID card is issued to all resident citizens. Information from applications is digitized and used to create the population register.

1995 Soviet internal passports are replaced with national ID cards. The population register is initiated.

2008 Photos are added to the population register.

2013 A unique ID number is introduced as a mandatory form of personal data (converted from the social fund ID number).

2014 Digitized civil registration begins at Ministry of Justice offices.

2017 The e-health platform is launched to collect information on births and deaths at hospitals.

Figure 1.3: Timeline of civil registration and identification in Armenia.

Once the population register was established, new types of identity data layers were introduced, such as facial image, which was collected in the process of reissuing national identity cards. An important milestone in the development of Armenia's identity system came in 2013 with the introduction of the legal requirement to assign: each person in the country was given a unique identification number (UIN). State-run ICT systems had to use this number when processing identity data.

When the UIN was officially in use, the Police (the custodian of the population register) became responsible for issuing the UIN. Since then, it has been issued right after a birth is registered. The UIN also paved the way for interoperability between the population register and the civil register as of 2014. Civil registration processes are now fully digitized. In 2017, the civil registration system expanded to include an electronic platform for notifying the government of hospital births and deaths.

1.2 Legal and institutional arrangements

Legal framework

Armenian legislation governing civil registration, vital statistics, and identity management has been upgraded to reflect the digitized nature of the processing of identity data. The legislation has built on the basic principles of the legacy regulatory framework governing the registration of vital life events and the issuance of national ID cards and travel documents. A rigid system of residence permits has been abolished, restoring the full right to freedom of movement. The internal passport ceased to function as a resident permit, and while it was still in circulation, its function was primarily to serve as an identification document.

Various laws govern civil registration and identity management:

- Civil registration is regulated by the *Law on Acts of Civil Status*[2] (2004).
- The *Law on State Register of the Population*[3] (2002) regulates the operation of the population register. The law states, "Authorized state bodies of the relevant fields are obliged to provide the bodies conducting register with personal registration data of the population" (Article 6). This was used as the legal basis for introducing administrative and technological interoperability between the population and civil registers. This was done to make sure that information defined under Article 6, which the Civil Status Acts Registration Agency (CSARA) is responsible for registering, is included. The law notes that "The main principles of the creation and conduct of the register are… [among others] [t]he availability of personal registration data to the bodies (persons) only having relevant powers defined by the law" (Article 4). This defines the responsibility and legal grounds to provide identity data, including by electronic interoperability with CSARA and other government systems.
- Identity management is also regulated by the *Law on Identification Cards*[4] (2011).
- The electronic processing of personal information is regulated by the *Law on Protection of Personal Data*[5] (2015).

Institutional arrangements

Since Armenia declared independence and set up its own institutions, responsibilities for civil registration and identity management have not changed very much. The Ministry of Justice is still responsible for civil registration, which is done by CSARA, an agency of the Ministry. Vital events are registered in the 53 territorial offices that CSARA oversees; the local administration appoints

registration officials. As part of registering births and deaths, the agency works with 350 hospitals. Since 2017, they have completed and processed birth and death notifications digitally as part of the civil registration platform. The e-health part of the electronic civil register operating in hospitals is linked with the National Statistics Committee. It communicates medical data related to vital statistics, such as cause of death.

Good practice: Sharing identity information among different authorities via digital platforms

The Police are responsible for identity management and for operating the population register. They issue national identity cards, travel documents, and driver's licenses – documents that are officially recognized as identification credentials and proof of identity. The population register was designed to store identity and other data of all members of the population who have established residency on the territory of Armenia.

The institutional set-up of civil registration, vital statistics, and identity management in Armenia offers an important example of how an identity ecosystem can be put in place without one authority being responsible for it all. Setting up electronic and data interoperability between the ICT systems of the Police and the Ministry of Justice shows that that the building blocks of a country's identity system can be distributed among different authorities without giving up efficiency, as long as they can share information electronically.

1.3 Civil registration

The civil register is a fully digitized system where business processes are built on traditional paper-based processes for registering vital life events. The registration is conducted in the Civil Status Acts Registration Agency's (CSARA) 53 territorial offices and by Armenian consulates abroad.

Under the law, identity data recorded as part of registering vital events from birth to death is the main legal proof of such data. All other state-issued identification credentials must reflect up-to-date identity information in the civil register. Building on this key policy, other government ICT systems that use identity data are directly digitally interlinked to the central civil register database.

As stated in the *Law on Acts of Civil Status*, CSARA is responsible for the registration of births, marriages, divorces, adoptions, paternity, changes of name, and deaths.

- As a rule, a birth is registered by one or both parents based on a document issued by a medical institution or a doctor. If the birth of a child occurred outside of a medical institution and without the presence of a doctor, registration is based on a statement by persons present at the birth and a document in a legally prescribed format stating the health of the child. If neither of these two conditions is met, a birth can be registered based on a court decision that confirms the fact of birth.
- Registration of a death can be completed at the deceased's last place of residence, at the place of death, at the place of discovery of the body of the deceased, or at the CSARA office of the organization that issued the death document. Completion of a death registration requires a death certificate issued by a medical institution or a doctor. Alternatively, a decision of the court can confirm the fact of the death of a person or declare a person dead.

- Marriage registration is completed based on a joint statement of the spouses. It is registered at the place of residence of one of the spouses or in the Matrimonial Palace (the spouses can choose). The marriage must be registered no later than 10 days before (but no earlier than three months before) the wedding. An application for marriage can be completed by only one of the persons planning to marry. Two witnesses must attend the marriage registration.
- Divorce registration can be completed based on a joint statement of the spouses or on the application of one spouse, if the other spouse is recognized as missing or incapacitated by a court decision or sentenced to prison for at least three years. Divorce can also be registered based on a court decision.
- Adoption is completed based on a court decision. The adoptive parents or the person they have authorized should submit the application for adoption at the CSARA office of the adoptive parents' place of residence or to the court that made the decision.

Digitizing the civil registration system

The electronic civil register is a central database that all CSARA territorial offices can access using a dedicated web application. Births, deaths, marriages, divorces, paternity, and changes of name are registered directly into the system. As part of this process, registration officials can look up and copy the identity data of informants or applicants from the population register.

Good practice: Having an e-health component means easier notification of vital events

To further automate birth and death registration, the digital civil registration platform has been expanded to include the e-health component as a web application executed on authorized computers at hospitals. Using the e-health application, medical workers can insert all information required for the production of a medical certificate and information further required for the registration of either birth or death. This medical certificate in the context of civil registration represents notification of vital events.

The identity data of a parent(s) registering a birth are entered directly from the population register once their UIN has been entered. The identity data of informants (parents) in the population register can be found by typing the person's name and date of birth. When registering a death, an informant's identity data, and those of a person whose vital event is being registered, are copied directly from the population register.

A medical certificate is given to the applicants and is then used to complete the registration of the vital event at the CSARA office. For registration officials, this document is used only to ensure access to the same medical certificate data in the e-health system. To help them look up the data in the e-health system, each medical certificate contains a special 12-character code (letters and numbers). The information is also given as a QR code – another way to look up the data in the source database.

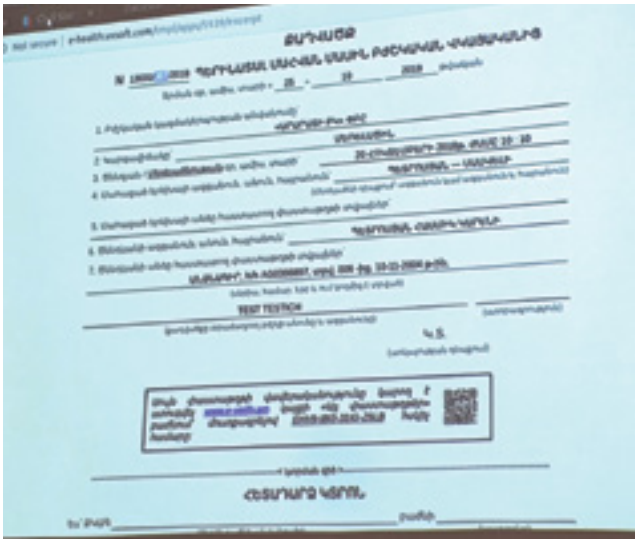

Figure 1.4: Armenian medical certificate.

To register at the CSARA office, people must present the medical certificate so registration officials can look up the information in the civil registration database. For birth registration, the registration official can access the electronic system of medical certificates to get the data needed, such as data about the mother of the child, the child's sex, the time of birth, and the number of children born.

The main information that registration officials need from the certificate is the 12-character code. It allows them to look up the information in the system. No information is copied from the paper certificate: all the information needed is copied directly from the civil registration database. This is why medical certificates are not produced on protected paper. In fact, registration officials do not require a medical certificate if the applicant presents the 12-character code to access the digital record. To reflect this new reality, the Ministry of Justice is developing a new legislative proposal. It would regulate the issuing of medical certificates and other civil registration certificates as optional and issued upon request. The digital record would be seen as primary proof of a registered event. This implies that other government systems will benefit from direct access to this information for services that require identity proof from the civil register.

In some cases, the system allows manual data entry into the central civil register. For example, to register a death, if the death took place on Armenian territory, the official will look up the medical certificate using the 12-character code. If the death took place abroad, information from the medical certificate produced by foreign medical authorities is transferred manually into the system.

Good practice: Copying identity data directly from the civil register to the population register

Right after a birth is registered, information on the newborn's identity and data on the child's parents are sent from the civil register to the population register, where a new personal record is created. This is also done for other vital events. As new vital events add new layers of identity information, it is sent to the population register right after it has been registered. This ensures that identity data in the population register is kept up to date. When a death is registered, this information is sent to the population register, where the personal record is permanently retired.

A unique identification number is assigned during birth registration

A unique identification number (UIN) – branded in Armenia as a public service number – is the key to interoperability of the two systems. This 10-digit code contains personal information, such as date of birth and sex. The UIN concept is not new to the Armenian identity system. Before the UIN was introduced, a social service number was widely used in Armenia as ID to link various types of personal information in different ICT systems.

The public service number has been assigned to most of the population who request a national ID card. If a person has acquired residence status or has not yet been assigned the number, it is assigned when they submit a request to the Police. For all newborns, because the civil and population registers are linked, the UIN is assigned by the population register during birth registration.

The civil registration system in Armenia is also important abroad. Only about one-third of Armenian citizens live in Armenia. While Armenia has 3 million residents, a majority of 10 million Armenian citizens live outside the country – in Russia, the United States, and France. This leads to challenges for Armenian civil registration authorities and Armenian consulates abroad. Marriage registration records are the main priority for Armenians living abroad. This is shown by the total number of requested marriage certificates made both within and outside the country. Foreign authorities must verify that Armenian citizens who request a registration of marriage are not already married in their country of origin.

Today, the verifying of marriage records is done by routine correspondence between CSARA and the consulates. It is a long process that often involves looking up records in the marriage registration books. Due to the high demand for marriage certificates, marriage registration records are being given priority in the digitizing process.

Another challenge is linked to verifying registration certificates issued in Armenia. To make it easier to verify them and to boost trust in these certificates, CSARA has developed an online platform for this work. It can be used by any authority within or outside the country.

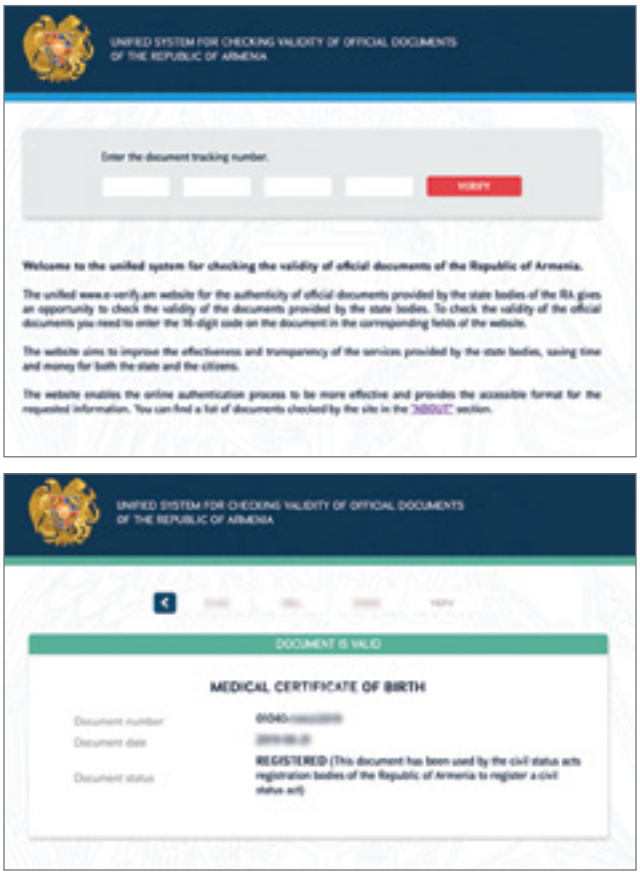

Figure 1.5: Online interface for verifying civil registration certificates.

Good practice: Setting up a dedicated online platform to verify issued vital event certificates

The website (e-verify.am) offers a simple interface that anyone can use to enter the 12-character code from the medical or civil registration certificate. This lets them find out if the document is valid. The website gives only the type of document and the document number – no other personal data. Government authorities who need registration certificates can use this platform to verify a document that a person presents, including at consulates abroad. For now, an agreement with the Russian authorities means they will recognize Armenian civil registration certificates as valid if they can be verified using this website.

As part of the broader e-government project, the government is developing an e-consulate platform to share data with consulates abroad. This platform will be a direct link with the electronic civil register. This will automate the processing of requests to verify civil status records and will greatly decrease the need for manual processing.

While civil registration business processes are fully digitized, only 2 million of a total of 10 million historical registration records have been digitized. This work is done by an external company that creates digital versions by transferring data manually and scanning records. Based on its investments so far, CSARA estimates that digitizing one record costs the agency US$1.

Identity data entered into the population register is not affected by the digitizing of historical records in the civil registration archives. Identity data already in the population register can be updated only when a new vital event is registered. It is no surprise that the digitizing of marriage records takes priority, as this is the historical vital event certificate that people request most often.

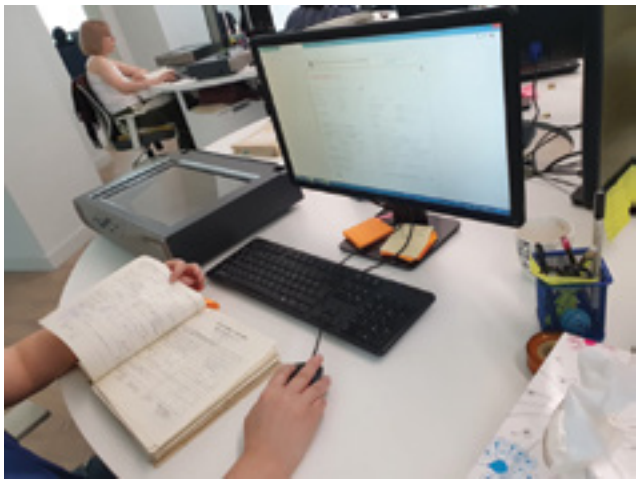

Figure 1.6: Workstation for digitizing civil records.

Vital statistics

The National Statistics Committee is the main producer of official statistics in the Republic of Armenia. The Committee coordinates all activities related to developing, producing, and disseminating official statistics through the system of national statistics, except for the Central Bank. To produce vital statistics, the Committee relies on two resources that are linked with the civil registration system.

- To produce medical certificates linked with birth or death registration, all medical data needed to produce vital statistics is extracted and sent automatically to the Committee. The e-health system automates this part of the process, allowing codes to be entered describing the cause of death, for instance, only as defined in the international classification system.
- The Committee gets other data linked to the registration of vital events directly from CSARA. This access is not automated. Data is shared as a report that CSARA produces.

1.4 State population register

Registration of place of residence has been a tradition in Armenia since Soviet times. Back then, it had a more totalitarian purpose: deciding who had the right to live in a specific community. It was used to control internal migration and keep certain groups within a certain territory. For example, it aimed to prevent rural populations from moving to the cities. After Armenia gained independence, the right to freedom of movement was fully restored, but timely registration of residents' addresses was still mandatory. Now people can choose to live wherever they want, as long as they can prove ownership or occupancy rights at their address. The authorities use registered addresses to plan and deliver services.

Since the Passport and Visa Department of the Police is the authority appointed by law to issue identification documents – such as the national ID card and travel documents – register place of residence, and maintain records of Armenian citizens, the ideal solution for processing personal data was to combine these three services into one ICT system. The result was the State Population Register.

The register was created in 2002, after the *Law of State Population Register* was adopted. The law defines all state authorities that are responsible for registering personal information in the register. The law further states that one purpose of keeping the population register is to make sure that personal registration data is available to the bodies (persons) that need it. This way they can deliver services and ensure that people's rights are respected as defined by the law. These two provisions were the basis for introducing interoperability with other government ICT systems that process personal information.

The population register stores the following types of personal data:

- Public service number (UIN);
- First name, last name, and patronymic name;
- Status (resident or refugee);
- Citizenship;
- Date, month, year, and place of birth;
- Sex;
- Home address;
- Data certifying the citizenship of the Republic of Armenia and/or of a foreign country and the right of residence in the Republic of Armenia (type, number, date of issue, validity period, issuing body);
- Date, month, year, and place of death; and
- Biometric data.

Making the Passport and Visa Department of the Police responsible for the population register made it much easier to collect data to create the register. The Department was already in charge of registering most types of personal data defined by law on the state population register: home address, issued identity cards, and travel documents. Identity data (first and last name, sex, date of birth and death) used to be sent to the Department in the form of civil registration certificates. Now that civil registration processes are digital, the new identity information is sent as soon as it is registered.

The population register was created using the database of national ID cards issued in Armenia that replaced Soviet internal passports in 1992 to 1995. The system is set up as a central population register: it is linked electronically with the registers maintained by local branches of the Passport and Visa Department. Each local population register keeps records of residents in a specific municipality. All personal data kept in these local registers is synched with the central one. The main purpose of local population registers is to reflect changes in residents' home address as they move within Armenia or abroad.

When the local branch of the Department gets the resident's application to register their new address, the branch sends this information to the central population register and to the local branch of the Department in the municipality where the applicant used to live. That branch removes this resident from its population register and transfers the entire personal record to the branch in the new municipality. The Department also uses the data from the population register to issue identification credentials: national ID cards and travel documents.

Business processes for issuance of national ID cards and travel documents are designed with the assumption that the population register should contain up-to-date identity data. Identity data in the population register is updated directly from the civil register for all changes in identity data which occurred after 2014 following the introduction of digitized civil registration processes.

- This means that for persons who approach the Passport and Visa Department to replace an expired ID card, or a passport issued after 2014, and get a new document, all new information affecting the person's identity data will be reflected electronically in the population register.
- Persons requesting an expired document issued before 2014 who have married, divorced, or changed their name will need to present the certificate from the civil register if the records have not been digitized in the meantime.
- Persons who have reached the legally defined age when an ID card becomes mandatory – or in the case of passport issuance to underage persons – must present a birth certificate, provided that the birth was registered before 2014.
- Once an identity is marked as deceased in the population register following the receipt of the death registration electronic notification, any attempts to issue an identification credential linked to that identity will be blocked by the population register system.

If information on a registered vital event is not in the population register, the information is transferred manually from the provided civil registration certificate to the personal record. The population register and the electronic civil register are linked, but the Police are not responsible for digitizing identity data in the civil register, which often happens in countries where one agency is responsible for CRVS and identity management. This means that where a birth certificate is not digitized, a person applying for an identification document needs to present their birth certificate. The data from the certificate is transferred digitally into the population register but is not shared with the civil register to create a digitized version of the original birth certificate. The authority for digitizing historical records remains by law with the Ministry of Justice.

Over time, as civil registration archives are digitized, people will no longer need to present civil registration certificates. Then the population register will truly reflect all layers of identity data that the Civil Status Acts Registration Agency (CSARA) has registered. When citizens register vital life events, all their identity data will be pulled directly from the population register. When they request a new ID card or a travel document, their identity data in the population register will reflect all registered vital events. If they need a document with data that does not match what is in the population register, this difference will first need to be reflected in the civil register, where it is registered as new vital event.

Figure 1.7: Armenian national ID card and electronic travel document.

1.5 Sharing information with other registers

One of the aims of digitizing governance processes is to ensure that all government systems that use identity data have the same up-to-date information. The first step in reaching this goal is to digitize ongoing processes and paper-based data. The next step is to make the systems interoperable.

Good practice: Adding interoperability gives government more control over how data is shared

The government's plan is that only one agency is responsible for registering each type of data. All information that agencies register and store, including identity data, becomes part of a large database thanks to interoperability between systems. This way, the government can decide which set of data each service can access. This is a major shift in how access to data is granted. In the past, the authority in charge of registering specific types of information would have a lot of control over who could access data in their possession. This created harmful power dynamics that made it difficult to make government services more efficient. With a layer of data interoperability, the government has more control over how information is shared across government systems.

When interoperability is set up well, a wide range of personal data does not need to be put in one register. Armenia's experience shows that while in early 2000, the solution was to collect information in a single population register, a similar level of data integration can happen when links exist between systems. Also, this approach allows other government platforms to benefit from up-to-date identity data. They can link their ICT systems directly to the electronic civil register rather than getting this data through the population register.

Identity data in the electronic civil register that is shared directly or through the population register is a key source of identity data for other government registers: the business register, cadastre (property register), and vehicle register.

The E-Governance Infrastructure Implementation Unit (EKENG) is the agency responsible for the framework of e-services in Armenia. It is in charge of the technical implementation of e-systems, such as e-Identity, and of developing an interoperability framework for e-governance infrastructures. In April 2014, the government presented the e-Governance Strategy 2014–2018. Based on this strategy, in February 2015 the government adopted an e-governance development action plan with the support of the donor community, in particular the European Union (EU). The strategic framework requires creating an effective and efficient e-administration to allow citizens to access faster, cheaper, and better services. In recent years, the government has put in place a number of activities aimed at improving service delivery by introducing good ICT solutions, such as

- business registration;
- judicial system management;
- registration of civil status for citizens; and
- vehicle registration.

1.6 The benefits of strengthening the role of civil registration in ID management

Being able to register identity information once and then access that information automatically through direct access to a source database means that business transactions cost much less and are more secure.

- Instant access to public services from a home computer means employees don't need to take time off work to pick up routine paperwork.
- When people are not working directly with personal data, corruption is less likely.
- The Ministry of Education gets regular updates from the Civil Status Acts Registration Agency (CSARA) on children who are reaching elementary school age.
- The e-notary system can access records of deceased persons to process inheritance cases.
- The credit bureau can access records of deceased persons that affect loans.

Access to social services

Social Services is one of the major users of civil registration data. Direct access to the civil register database means that families of newborns can receive benefits quickly. Social grants regulations state that families are entitled to US$105 for their first child, US$315 for their second child, and US$2,100 for their third child. Working with Social Services, CSARA has developed a procedure that allows parents of newborn children to provide all the information needed to process the social grant application when they register the birth, including the bank where the grant is to be sent. Parents can expect to receive the grant within 10 days of submitting the application. CSARA plans to develop similar one-stop shop processes for benefits to the families of people who have died. To prevent any financial losses as a result of pension transfers to deceased persons, CSARA sends the pension authority the information on all persons who have died.

The voter register is another important country-wide database whose accuracy depends on up-to-date identity data. To make sure that information in this register is accurate, all persons who have reached voting age are included on the voter lists, and all deceased persons are quickly deleted from the lists. The information on home address ensures that voters are placed in the correct polling station area. The population register is the only database that combines both types of information with up-to-date identity data, thanks to direct and timely sharing of data from CSARA.

Financial considerations

Digitizing civil registration is possible because of financial support from the EU. The total amount invested in digitizing was not made public at the time of this research, but it is estimated at around US$2 million. The digitizing of historical records is estimated at US$1 for each vital event record.

A 2018 white paper on the digitization strategy (developed for the previous Armenian government with EU assistance) created a framework to fully digitize government services by 2030. The guidelines feature the following focus areas:

- Cybersecurity;
- Digital infrastructure;
- Government efficiency;
- Tech-oriented private sector; and
- Tech-savvy workforce.

According to the framework, once E-Gov is fully in place, it will

- reduce the cost of government services by 50 percent;
- greatly reduce corruption;
- increase competitiveness; and
- add 3 percent to the growth rate of Armenia's gross domestic product.

Conclusion

Armenia's CRVS and identity management reforms reveal the authorities' aim to transform the country's identity system and make it more efficient. Although the system used to be paper-based, it had all the elements of a holistic approach to CRVS and identity management. It also shows that integrating CRVS and identity management is not the only way to create a holistic approach.

The Ministry of Justice, which is responsible for civil registration, and the Police of the Republic of Armenia, have developed a solid framework for working together. This enables them to share identity information as defined by law and has led to greater efficiency and integrity of the overall identity system. This approach has helped to close many gaps that could lead to identity fraud. When a nation-wide layer of data interoperability was added, procedures were put in place to regulate cooperation between the two agencies.

Digitizing civil registration processes and keeping registered data in digital form has made it possible to introduce many innovations. Civil registration records can now be verified by directly accessing information in the civil register.

By developing a dedicated e-health platform, the process for notification of birth and death is improved, and medical workers are more involved in the process. Developing an electronic platform to process vital events in consulates is expected to make it much easier to process identity information for Armenians living outside the country. Introducing an online platform to verify issued vital events certificates has shown value not only for officials in Armenia, but also abroad. Russian authorities have recognized it as a valid platform for verifying vital events certificates issued by Armenian authorities. ●

Endnotes

1 UNICEF 2012. https://www.unicef.org/infobycountry/armenia_statistics.html and http://sdg.armstat.am/16/

2 *Law on Acts of Civil Status*. 2004. www.parliament.am/legislation.php?sel=show&ID=2212&lang=rus

3 *Law on State Register of the Population*. 2002. www.legislationline.org/documents/id/18791

4 *Law on Identification Cards*. 2011. www.parliament.am/legislation.php?sel=show&ID=4348&lang=eng

5 *Law on Protection of Personal Data*. 2015. www.arlis.am/Annexes/4/Law_Personal_data_protection_EN.pdf

ECUADOR

CASE STUDY 2

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Acronyms

DIGERCIC	Dirección General de Registro Civil, Identificación y Cedulación (National Agency for Civil Registration, Identification, and National ID Issuance)
DINARDAP	Dirección Nacional de Registro de Datos Públicos (National Agency for Public Data Registration)
ID	Identity
INEC	Instituto Nacional de Estadística y Censos (National Institute of Statistics and Census)
REVIT	Sistema de Registro de Datos Vitales (Vital Events Registration System)
UIN	Unique Identification Number

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Executive summary

In 2008, the president of Ecuador declared that the *Dirección General de Registro Civil, Identificación y Cedulación* (DIGERCIC) – the country's National Agency for Civil Registration, Identification, and National ID Issuance – was in a state of emergency. After creating an overarching reform plan, which launched in 2010, DIGERCIC transformed itself into a modern agency.

In 10 years, it has

- moved from a paper-based to an electronic registration process;
- increased birth registration from 80 percent to 90 percent;
- increased identification coverage from 78 percent to 95.4 percent;
- begun issuing a modern and more secure national ID; and
- transformed an obsolete technology infrastructure by developing its own technological solutions.

By adding digital technology and digitizing civil registration information, DIGERCIC has built three main databases:

- Live birth and death certification;
- Civil registration; and
- Identification.

Because the agency has made such great progress, the government also made it responsible for issuing passports, another part of the identification system. All these databases are linked by a unique identification number (UIN) assigned at birth, and all feed into DIGERCIC's population register.

Figure 2.1 gives an overview of how the CRVS and ID management systems interact in Ecuador.

The information that DIGERCIC generates helps institutions provide more efficient and inclusive services. It does this by making it easier to identify people who receive services and by reducing duplicate and fraudulent registrations and undue payments in social programs. In modernizing, the agency has improved the way it works with public and private organizations by exchanging data. It has become the country's main source of identity information and verification.

This has created revenue for the agency, which helps to keep its business model sustainable. Having a solid civil registration and ID system also has economic and social benefits. DIGERCIC estimates these at about US$15 million per year (on average) in the last 10 years.

Between 2010 and 2019, the agency put in place good practices that have greatly improved the quality of services and made them available to more people.

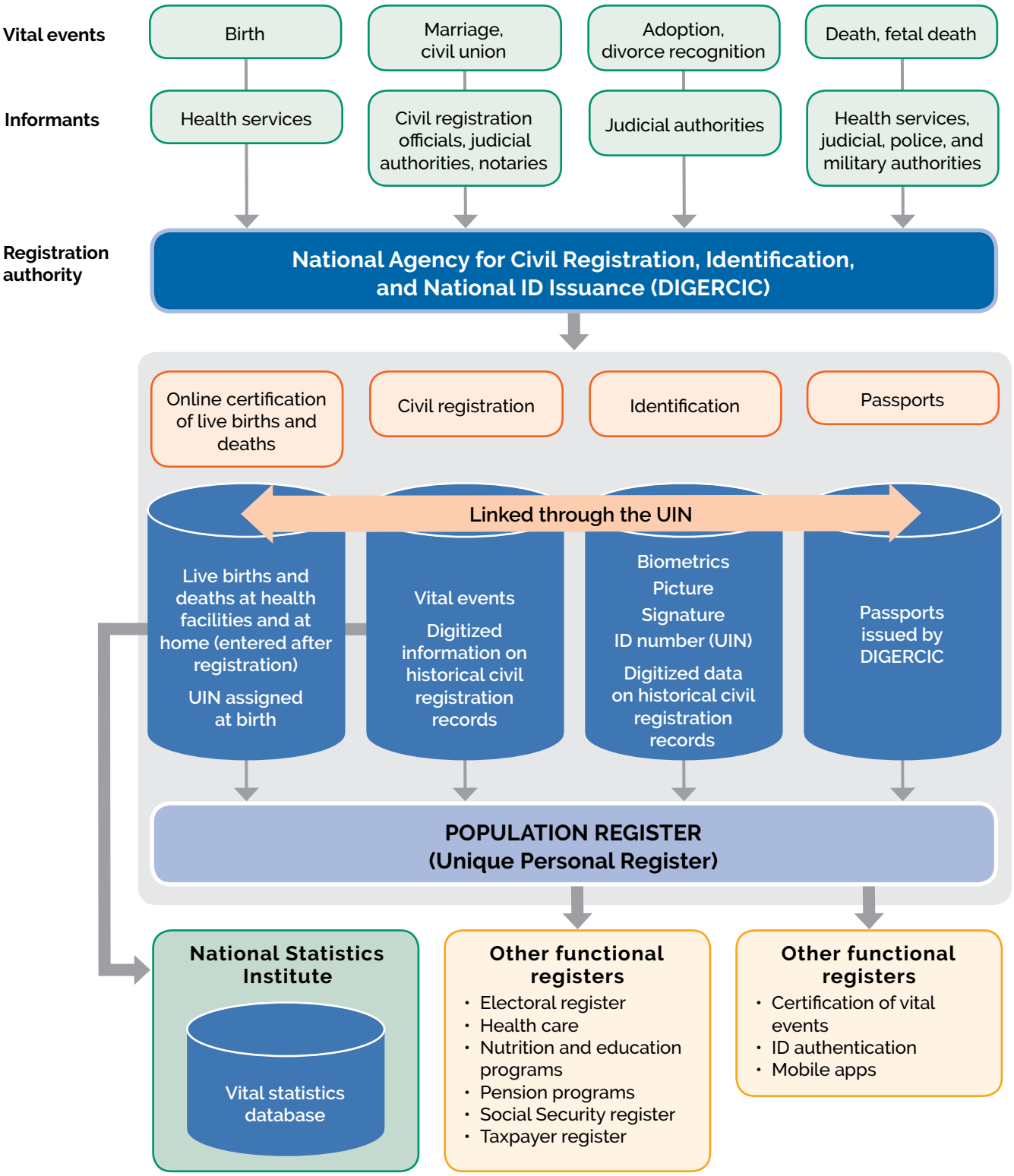

Figure 2.1: Overview of civil registration, vital statistics, and ID management.

Source: Author

Summary of good practices

- Offering political leadership and an updated legal framework;
- Coordinating and standardizing processes within the agency;
- Introducing online certification of vital events and civil registration services in health facilities;
- Digitizing and checking the validity of digital certificates;
- Measuring users' satisfaction rates; and
- Using strategies to reach remote areas and vulnerable populations.

After almost 10 years of modernization, DIGERCIC has a user satisfaction rate of 91.9 percent. The agency is now able to provide reliable data, help make services more efficient, and reach more people. This inclusive provision of services shows how the integration of CRVS and ID management systems is fundamental to guarantee citizens' access to rights and to put better policies in place.

2.1 Introduction

General information

Country name	Ecuador
Surface	283,560 km^2
Geographic location	Andean region of South America; it borders Colombia to the north, Peru to the south and east, and the Pacific Ocean to the west.
Total population	17,273,615 (2019 projection by the *Instituto Nacional de Estadística y Censos* [INEC], the National Institute of Statistics and Census)
Share of urban population	64%
Official language	Spanish. Kichwa and Shuar are official languages in intercultural relations. Fourteen indigenous languages are spoken.
Civil registration and identification agency	*Dirección General de Registro Civil, Identificación y Cedulación* (DIGERCIC)
Birth registration rate	90% (DIGERCIC 2018, based on total estimated births by INEC)
Death registration rate	68% (DIGERCIC 2014, based on total estimated deaths by INEC)
Identification coverage	95.4% (DIGERCIC 2017, based on total population estimated by INEC)

Table 2.1: Ecuador country information.

Figure 2.2: Geographical map of Ecuador.

Disclaimer: The boundaries used on this map do not imply official endorsement or acceptance by the United Nations.

Historical context

The government has taken care of civil registration and civil identification in Ecuador since the start of the 20th century. For most of that time, this work has been combined by law in one national agency.

The first civil registration law was enacted in 1900. Congress approved the first civil identification legislation in 1924; this included different formats of ID cards for tax purposes.

In 1966, the government enacted the *Ley de Registro Civil, Identificación y Cedulación* (Civil Registration, Identification, and National ID Issuance Law). This law combined civil registration and identification. The new law made the system simpler and created the National Registration Office in Quito, the capital. The office started issuing a single ID card (*cédula única*) for all adults: this was the only legally valid ID. Since 1966, people are not able to change their ID card number. In 1975, to produce the register for elections, the agency began to digitize identification information, recording it on magnetic tapes and storing it in a central archive.

But not everything ran smoothly. During more than a century, the civil registration and identification agency fell under different ministries and was gradually charged with increasing responsibilities. Technical capacity was low, there were not enough resources, and corruption was widespread. The result was poor service, and the public was more and more dissatisfied.

In response to a request from DIGERCIC's general director at the time, in 2008 the government declared a state of emergency for the agency and in 2010 came up with a plan to modernize it. This plan, which has been in place for almost a decade, received a clear political and financial commitment from the government. It has three main pillars:

- Training for human resources;
- Modernizing infrastructure and technology; and
- Signing cooperation agreements with other institutions.

The plan also included more specific goals, such as:

- Modernizing the legal framework;
- Reducing under-registrations and late registrations;
- Reorganizing the number and location of DIGERCIC's offices; and
- Increasing safeguards for information and documents.

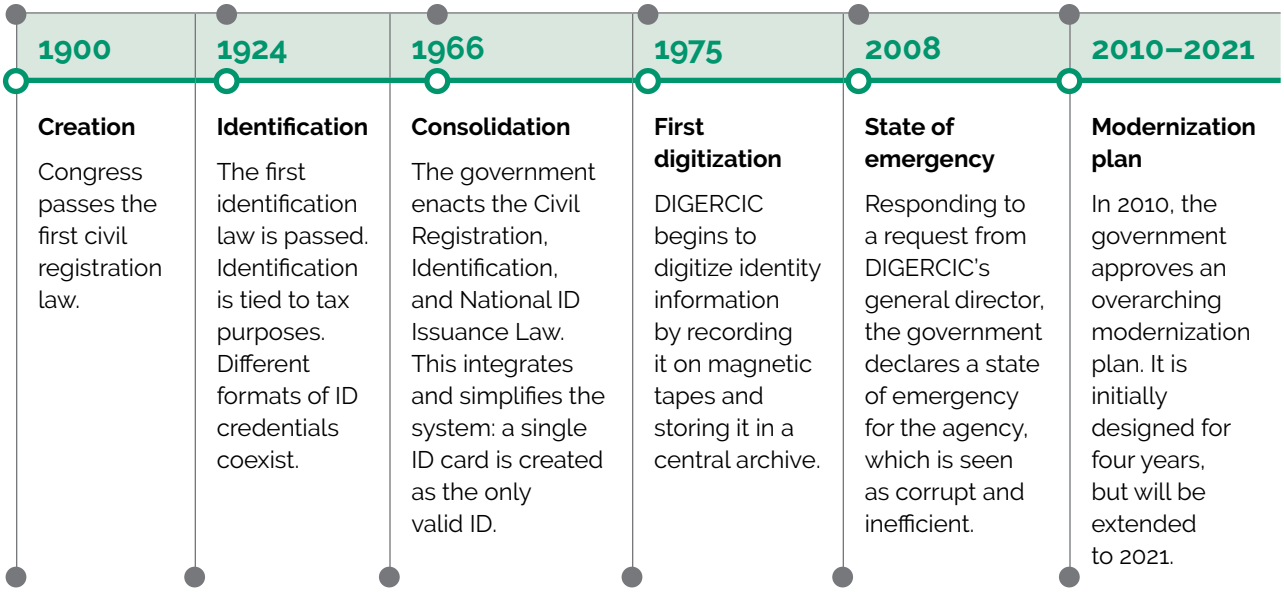

Figure 2.3: Timeline of civil registration and identification leading up to Ecuador's modernization plan.

2.2 Legal and institutional arrangements

Ecuador approved a new Constitution in 2008. It sets out

- the right of every child and adolescent to an identity, a name, and a nationality (Article 45); and
- the right to both personal and collective identity, including a name freely chosen and duly registered (Article 66).

The Constitution also states that the central government has sole authority for registration, nationalization, and control of migration.

Good practice: Offering political leadership and an updated legal framework

DIGERCIC's modernization plan was launched thanks to the government's sustained political leadership and clear financial commitments. The plan was part of the National Development Plan, which made it a policy priority. National and international funding supported the plan.

In modernizing the civil registration and identification legal framework, Congress passed the new Organic Law for Civil Identity and Civil Data Management in 2016. (The 1976 law was now out of date.) This was followed by the regulation of the law in 2018. By using an organic law, which has more authority than ordinary laws, legislators gave the agency more stability. DIGERCIC's organic law gives it administrative, operational, and financial independence, plus sole authority over services related to identity, registration, and certification of vital events.

The organic law also defines the *Registro Personal Único*, or Unique Personal Register (Article 73). This register contains information on vital events and unique identity features, including address and cultural identification of citizens, if they offer this information. This is DIGERCIC's main database: it combines information from civil registration and identification.

A 2010 law also created the National Public Data Registration System. The *Dirección Nacional de Registro de Datos Públicos* (DINARDAP), the National Agency for Public Data Registration, oversees this system. DINARDAP is in charge of organizing, regulating, and interconnecting with government-operated information and communications technology systems that process public data. At the same time, it guarantees that the system is managed efficiently, data is safeguarded, publicity is done, transparency is maintained, and new technology is put in place. The system includes data from various sources, such as:

- Civil register;
- Property register;
- Commercial register;
- Vehicle, ship, and aircraft registers; and
- Patents and intellectual property registers.

Both DIGERCIC and DINARDAP fall under the *Ministerio de Telecomunicaciones y Sociedad de la Información* (Ministry of Telecommunications and Information Society). The Ministry has overseen the reform and modernizing of the civil registration and identity agency. The general director of DIGERCIC, the agency's highest position, is appointed by, reports to, and can be removed from office by the Minister.

As part of the National Public Data Registration System, DINARDAP oversees DIGERCIC's technical management. DINARDAP also standardizes and manages the public registers database.

By law, members of this system must provide continuous digitized and updated information from their government-operated databases. Although Ecuador does not yet have a data protection law, in January 2019 Congress started discussing a bill that DINARDAP proposed.

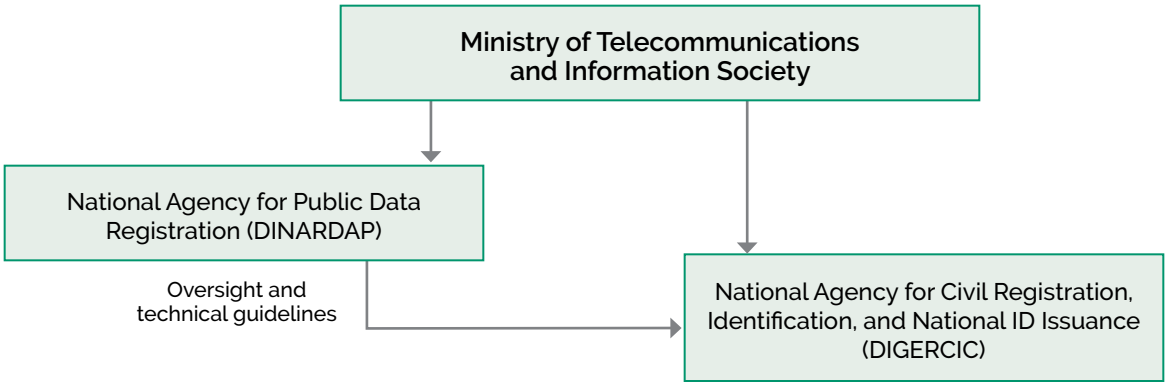

Figure 2.4: Registration agencies under the Ministry of Telecommunications and Information Society.

2.3 Civil registration and vital statistics

As mentioned above, Ecuador's Constitution clearly states that an identity and a name, which must be duly registered, are fundamental rights. This makes civil registration a key part of guaranteeing fundamental rights. Since birth registration and a legal identity are essential for individuals to be seen as full members of a political community, civil registration is crucial in enabling citizens to access their social, political, cultural, and economic rights.

Registration of vital events

By law, DIGERCIC is responsible for registering

- births;
- deaths;
- marriages;
- divorces;
- adoptions;
- changes in name and surname;
- changes in gender;
- civil unions (and their termination);
- recognitions;
- degrees of disability;
- decisions to donate organs;
- naturalization;
- legal residences of foreign migrants; and
- other life events.[1]

As the agency in charge of registration and identification, DIGERCIC is part of citizens' lives from beginning to end (see Figure 2.5).

In Ecuador, people must register all vital events. The civil registration law (Article 19) also states that officials who by law must notify DIGERCIC of vital events must do so within 30 days of the event, or they could lose their job. For births and deaths, the responsible health professional must notify DIGERCIC within 3 days (but declarants have up to 90 days to request registration at a DIGERCIC office).

All registration of vital events is done electronically. Registrars use an online platform to enter information, and they sign records using an electronic signature. The information entered is automatically added to the civil registration digital database.

Table 2.2 shows the legal period for registration, requirements, and observations for some of the main vital events that DIGERCIC registers:

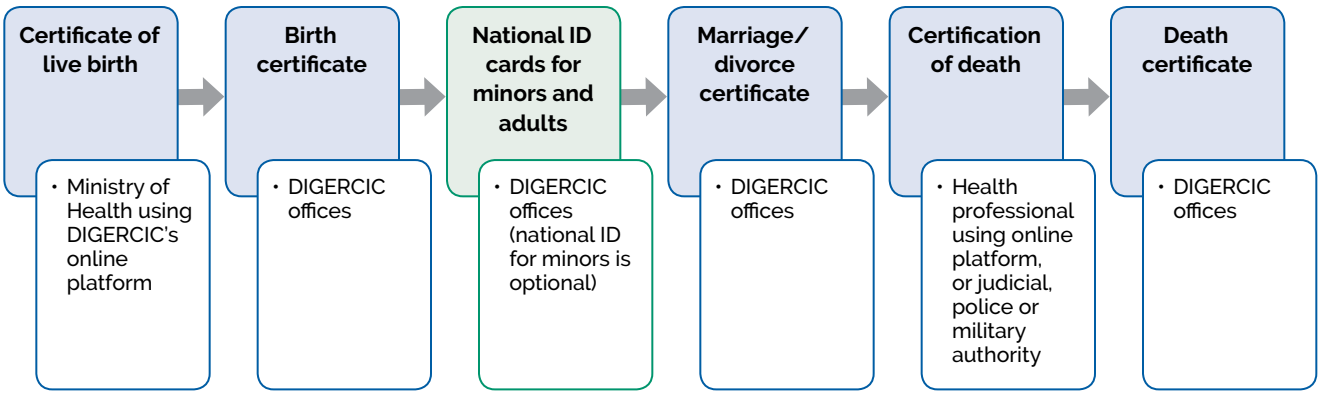

Figure 2.5: Registration cycle in Ecuador.

	Legal period	Requirements	Observations
Births that occur in health facilities	Up to 90 days after birth (timely registration)	1. Certificate of live birth issued by health facility (no fee). 2. National ID card/passport/refugee card of declarant(s). 3. If parents are married or in a civil union, one of them must be present. Otherwise, both must be present to recognize paternity.	Health professionals must notify DIGERCIC within 3 days. If no declarant requests registration, health personnel must notify DIGERCIC and request registration. This is done using information on the certificate of life birth. The certificate must include the intended name for the newborn. (DIGERCIC gives parents up to 90 days to change the child's name.) Timely and late registration of minors is free of charge. Birth registration of adults must follow a judicial process. The fee is US$5. If a health professional fails to certify a live birth and this causes late registration, the professional must pay a fee equal to 1% of an average minimum wage for each day of delay.
Births that occur outside of health facilities	Up to 90 days after birth (timely registration)	1. Sworn statement by declarant and two witnesses. 2. National ID card/passport/refugee card of declarant(s) and witnesses. 3. If parents are married or in a civil union, one of them must be present. Otherwise, both must be present to recognize paternity. 4. Minor must be present at registration.	A medical certificate of prenatal care can be presented as another document. If a health professional fails to certify a live birth and this causes late registration, the professional must pay a fee equal to 1% of an average minimum wage for each day of delay.
Marriages	No period is legally established (see requirements)	Marriages must be celebrated at DIGERCIC offices to be legally recognized. They are automatically registered after the ceremony.	Registration fee: US$50
Civil unions	Authorities that certified the civil union or its termination must notify DIGERCIC within 30 days	Judicial ruling or certified notary declaration of civil union. National ID card of declarant(s). Receipt of fee.	Registration fee: US$50
Divorces	Judicial authority that certified the divorce must notify DIGERCIC within 30 days	Judicial resolution of divorce. National ID card/passport of declarant. Receipt of fee.	Registration fee: US$12 Individuals can get a certificate 8 days after the divorce is registered.
Deaths	Up to 48 hours after death or after knowledge of death	1. Certificate of death signed by health professional or, if health professional is not available, death certificate will be completed with sworn declaration by two witnesses. 3. Judicial resolution (for specific cases). 4. National ID card of declarant.	Health professionals must notify DIGERCIC within 3 days of death. For burial permit (issued by the Ministry of Health), the certificate of death issued by health authorities (not the death registration record) is required. Late registration fee: US$5

Table 2.2: Registration of main vital events in Ecuador.

Source: Organic Law for Civil Identity and Civil Data Management (2016) and DIGERCIC website (registrocivil.gob.ec)

Use of a unique identification number assigned at birth

A unique identification number (UIN) is assigned at birth to all newborns. It is linked to a biometric feature to individualize them. This UIN becomes the national ID number. All public and private services that citizens access will be linked to that UIN, even if the person does not have a physical national ID card. This UIN must appear in all public documents and credentials, such as passports, tax register, and property register. This helps public institutions exchange information.

The UIN has 10 digits:

- The first two digits are the code of the province where the person's birth was registered or where they obtained their first ID card;
- The next seven digits are a serial number; and
- The last digit is a verification digit.

The UIN is one of the person's key identity features. It enables a connection between the civil registration and identification databases and makes it easier to retrieve information between registers.

According to the Constitution (Article 7), all individuals born in Ecuadorian territory (*ius soli*) and those born abroad to an Ecuadorian mother or father (*ius sanguinis*) have the right to nationality. *Ius soli* is applied no matter what the parents' migratory situation is. If a birth took place in Ecuador and declarants bring proof of birth, the newborn will be registered as Ecuadorian. To register the child's birth, a foreign declarant can present their passport or refugee card.

The civil registration and identification law also states that if physical or electronic records are deteriorated, destroyed, illegible, or lost, DIGERCIC can order them to be reconstructed upon request or by its own request (ex officio).

DIGERCIC designed an online platform, REVIT-Births, to certify live births in health facilities. (Note: 96 percent of births in Ecuador happen at health facilities.) Since 2015, an agreement between the agency, the Ministry of Health, and the *Instituto Nacional de Estadistica y Censos* (INEC – the National Institute of Statistics and Census) allows health personnel to access an online tool to certify live births as they occur (see Figure 2.6).

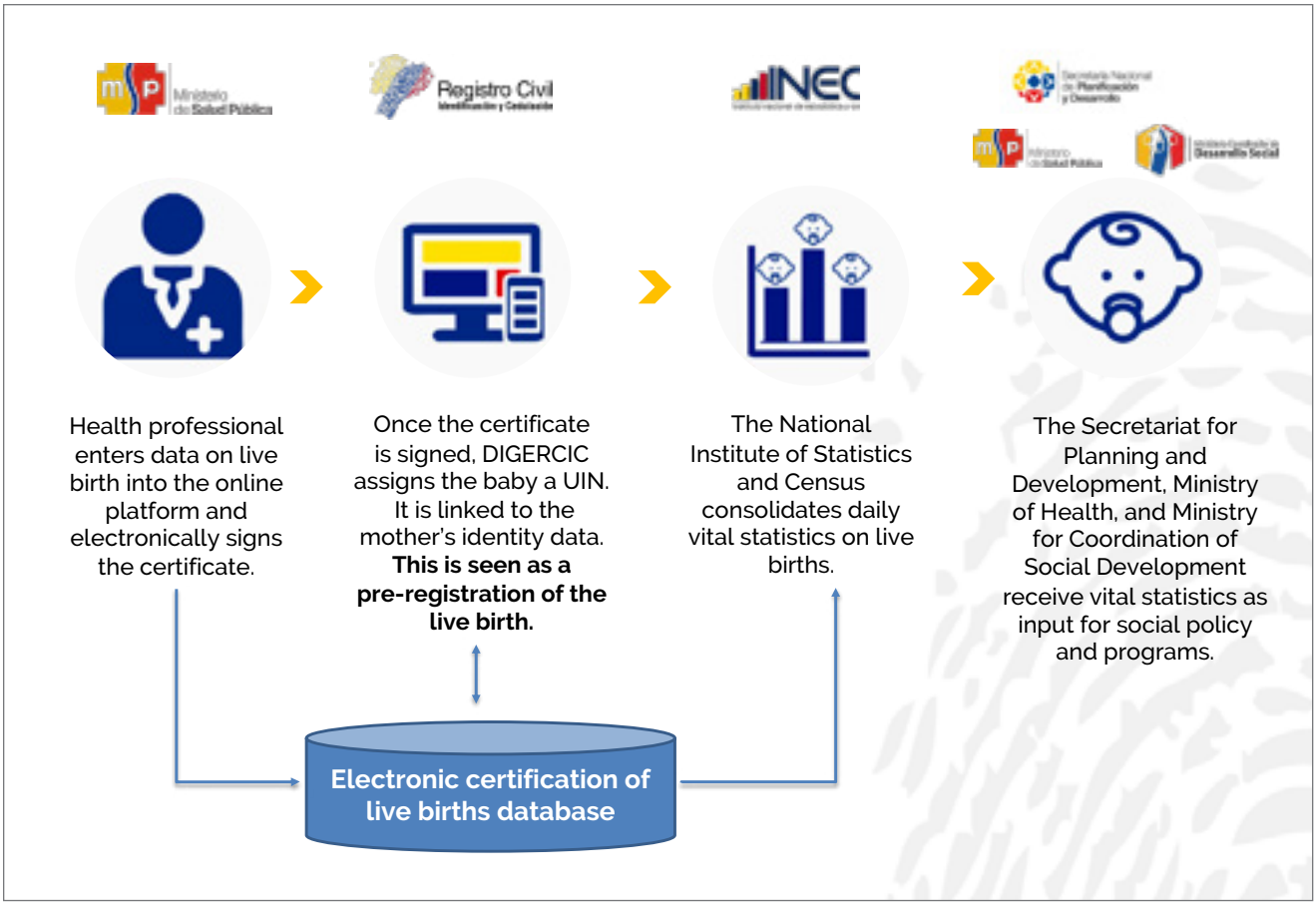

Figure 2.6: Certification of live birth, pre-registration, and generation of vital statistics.

Source: DIGERCIC 2017 (author's translation)

Good practice: Introducing online certification of vital events and civil registration services in health facilities

Health personnel can access REVIT-Births to certify live births as they occur. Since the platform is connected to DIGERCIC's database, the health professional and the mother are identified through their UIN. The mother's and the newborn's information are also linked in the database. The health professional signs the certificate of live birth using an electronic signature and immediately issues a copy for the mother.

Parents can also finalize the birth registration process in DIGERCIC's 31 civil registration offices, found in public health facilities in Ecuador. If the birth is recorded in the platform, mothers can register their children without having to show a certificate of live birth, since DIGERCIC can retrieve the information using her UIN. Because the platform was created with the Ministry of Health and INEC, the certificate contains all the information needed to generate vital statistics.

By April 2019, the platform was available in 95 percent of the country's health facilities. In the remaining 5 percent, physical infrastructure does not allow for this tool to be set up. The system allows DIGERCIC to monitor cases of newborns whose births are not registered. Mothers can voluntarily provide contact information, with the incentive of accessing social programs and subsidies. DIGERCIC uses this information to send a text message reminding them to register their baby's birth. Based on data for 2015–2019, 95 percent of births in REVIT have a birth certificate. For births that happen outside a health facility, registration requires two witnesses. Once the birth is registered, it is added to the REVIT database.

A similar platform, REVIT-Deaths, was set up in July 2017. Health professionals can electronically enter information of deaths at health facilities, get technical support for death classification using the ICD-10 code, and electronically sign the death certificate. This tool, developed by INEC, is now part of DICERCIC's platforms and is connected to the population register. In April 2019, REVIT-Deaths was available in 25 percent of the country's health facilities. Authorities are working to increase this coverage.

Today, DIGERCIC offers civil registration services in 221 offices in Ecuador, covering all provinces. In 174 of those offices, identification services are provided as well. The agency also has 15 mobile units, which are set up in one location temporarily to give services twice a week.

Good practice: Using strategies to reach remote areas and vulnerable populations

The vast majority of the hard-to-reach population, including Indigenous communities and African-Ecuadorians, lives in rural areas without internet access, with low population density, and in dispersed settlements.[2] DIGERCIC has special brigades that bring civil registration and identification services to remote areas and vulnerable populations. In 2018, the agency sent out more than 15,000 brigades. These services are targeted to certain groups.

- Out-of-coverage Brigades: for areas located more than a 90-minute drive from the closest DIGERCIC office.
- Solidarity Brigades: for hospitalized citizens, citizens with severely reduced mobility, seriously ill senior citizens, and cases of emergency.
- Organizational Brigades: upon request by legal representatives of organizations, such as local governments asking for services that their residents can access, or private companies asking for services for their employees.

Brigades that are deployed in areas without internet access (offline brigades) collect information through electronic devices. They then go to the closest DIGERCIC office to connect online and send in the information.

As part of the modernization process, DIGERCIC digitized its civil registration records. All information has now been entered into the agency's digital database and can be accessed at any DIGERCIC office. However, this digitization process does not include the full scanning of these records into digital images. DIGERCIC started this work in 2010 and has invested almost US$7 million in the digitization of documents.[3] By 2019, more than 74 million civil registration records (57 percent)[4] had been added to the agency's electronic database. Physical copies of the records are kept in a central archive.

DIGERCIC recently digitized 2.7 million death registration records from 1966 to 2013 to help update the electoral register. The agency is doing something similar with marriage records, and expects to reach a similar figure. It also digitizes documents every day for citizens who need certified copies of original paper records.

Good practice: Digitizing and checking the validity of digital certificates

Since civil registration information is available in electronic format, DIGERCIC can issue digital certificates of vital events. These certificates have a bar code that any institution can use to check them against DIGERCIC's database. The civil registration and identification law explicitly says that electronic documents have the same legal validity as original paper ones. That means they are valid at public and private institutions. In 2014, the agency started issuing digital identity certificates, which are often used as proof of identity when people have documents notarized. Digital certificates of birth, marriage, civil union, and death became available in 2017. This reduces the need for paper documents and makes it faster for people to get certificates.

Vital statistics

Because DIGERCIC, the National Institute of Statistics and Census (INEC), and the Ministry of Health have worked together to build modern electronic platforms to register vital events in health facilities, the three entities can generate more timely and updated data. This information is a key resource. The Secretariat for Planning and Development, Ministry of Health, Ministry of Coordination of Social Development, and others use it to design and provide social policy and programs.

Information on births comes almost solely from health facilities (Ministry of Health) through the online certification of live births. Information on deaths is complemented by other sources, such as:

- Attorney General's Office;
- DIGERCIC (more so than with births);
- Legal medicine and forensic services; and
- National Transit Authority.

Good practice: Coordinating and standardizing processes within the agency

DIGERCIC is part of the Inter-Institutional Committee for Health Statistics. The other members are the Secretariat for Planning and Development, Ministry of Health, Ministry for Coordination of Social Development, and INEC. The Committee coordinates and standardizes concepts and methodology for producing information. As part of its work, in 2016 the Committee issued two resolutions to standardize estimates of under-registration of births and deaths.[5] To do this, it used information from DIGERCIC and from INEC's population projections.

These institutions are also part of the National Statistics Plan 2017–2021. This key tool of the National Development Plan seeks to guarantee statistical data that makes it easier to

- create national indicators;
- design public policy;
- continuously monitor and evaluate policies; and
- do national development planning.

One of the National Development Plan's goals is to modernize the National Statistics System by identifying administrative records and using them intensively. This allows statistics to be produced based on timely and low-cost data. Also, Ecuador expects that the 2020 census will be the last one done using traditional methods. INEC is working with several agencies, including DIGERCIC, to ensure high-quality data so the country can start doing its census based on administrative records. This is possible only when a country has a solid civil registration and identification system that can provide universal, timely, complete, continuous, and reliable information.

DIGERCIC is one of the institutions providing official information for the National Statistics Plan. The agency's data helps to design, carry out, monitor, and evaluate the goals of the National Development Plan and similar instruments.

- DIGERCIC provides information on births, deaths, and marriages, and on people who have a national ID card and a passport.
- INEC produces annual reports of births, deaths, and fetal deaths.

The National Statistics Plan lists the United Nations Sustainable Development Goals as one of the main demand components for official statistics. INEC checks all statistical operations and administrative records used in each category of information (social and demographic, economic, environmental) to see how they align with the 2030 Agenda for Sustainable Development.[6]

2.4 ID management system and interoperability

In Ecuador, all adults must have a national ID card. ID cards can also be issued for minors, but this is optional. It is the only valid ID card they can use to interact with public and private institutions. DIGERCIC issues ID cards for both Ecuadorian nationals and foreign legal residents. The cards include:

- ID number;
- Name and surname;
- Place and date of birth;
- Nationality;
- Sex;
- Marital status;
- Name and surname of spouse or partner (for civil unions);
- Place and date of issuance;
- Expiration date;
- Fingerprint;
- Signature of the holder;
- Signature of DIGERCIC authority;
- Blood type;
- Decision to donate organs; and
- Disability condition.

If changes in the population register affect any data on the ID card, the cardholder must request a new one with updated information. Anyone who does not do this must pay a fee equal to 1 per-mille of the national average minimum wage for each day of delay.

Before the reform and modernization of DIGERCIC's process, the ID card was printed on special paper and laminated. It was easily forged, and identity fraud was common. This made it hard for public institutions to have reliable and updated information. Since 2009, DIGERCIC has issued an electronic ID with 16 security measures. It has simplified the process and reduced wait times to get a national ID card from an average of 6 to 8 hours to an average of less than 60 minutes. Biometrics (10 fingerprints), signature, and photo are collected through electronic devices at all DIGERCIC offices and in the special brigades.

Once a person has an ID card, by law public and private institutions that require a birth certificate must accept the ID card as an equally valid proof of identity. The only exception is judicial or other processes that require a certified copy of the birth certificate.

Because of DIGERCIC's progress after the modernization plan, in 2016 the government added another part of ID management to the agency: issuing passports.

Integration of databases

As we saw above, DIGERCIC maintains the population register. This register links information on vital events from the civil registration database and the identification database. The agency also manages the platforms used to certify live births and deaths. These are connected to the population register, so the health professional's and the mother's identity are available in the live birth and death certificates.

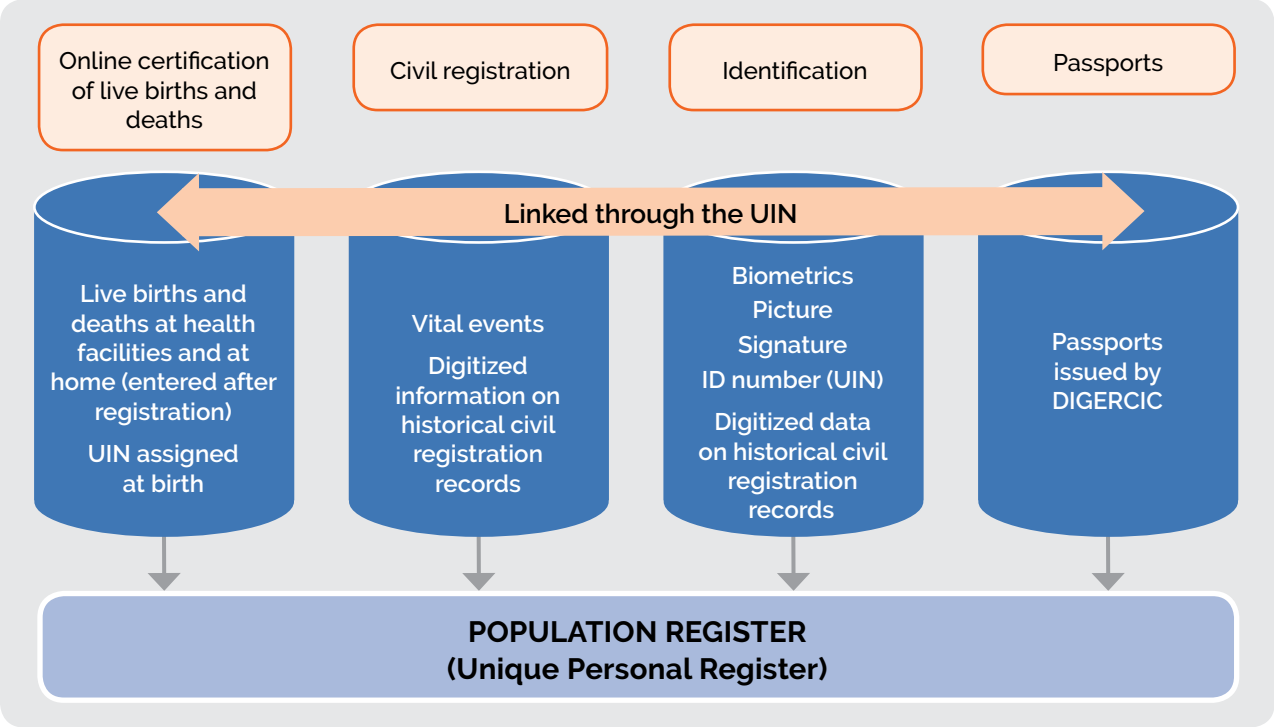

Figure 2.7: DIGERCIC's databases are linked through the unique identification number.

These databases are connected through the unique identification number (UIN) assigned at birth. This basic feature links information among databases and a person's information in the population register. The civil registration and identification law states that unless there is a purpose defined by law that requires access to personal data that DIGERCIC holds, the information will be released only if the affected person authorizes it or by judicial order (Article 75).

Changes in civil registration information are automatically sent to the population register so identity information is always being updated.

Before digital technology was in place, changes in civil registration information were often not shared, so identification data was not up to date. This caused many problems in updating the electoral register and the social security and social programs registers. People who had died were still listed, or potential recipients could not be identified in time. The result was ineffective and inefficient service. When it digitized civil registration information, DIGERCIC began cleaning up files. One step was to digitize death certificates to help update the electoral register.

Having DIGERCIC's own team develop technological tools supported modernization. This meant big improvements over the old infrastructure. It was also better than using difficult-to-adapt platforms and software from international providers.

Good practice: Measuring users' satisfaction rates

DIGERCIC's progress is reflected in users' satisfaction with the agency. In 2008, it was widely seen as inefficient and corrupt, with a 55 percent satisfaction rate.[7] In 2017, DIGERCIC reached a 91.9 percent satisfaction rate, based on more than 70,000 national surveys done that year.[8]

DIGERCIC collects users' feedback through these surveys and uses it to improve services.

Sharing information with other registers

DIGERCIC is part of the National Public Data Registration System. This system combines information from many registers and makes it available to public and private institutions through interoperable platforms. Civil registration and identification data is included in this system. The data can be consulted through the services that DINARDAP provides.

DIGERCIC still signs agreements with public and private institutions to grant access to identity information. Each agreement contains the terms and conditions for institutions to access data. They must provide justification for each field of information to which they request access.

DIGERCIC provides four main services related to civil registration and ID information:

- **Data web service** – Gives access to DIGERCIC information on its website using an internet connection or through a dedicated line.
- **Materialized views** (a more restricted service) – Copies of DIGERCIC's database, or subsets of it, are shared with institutions, such as the Tax Agency, Ministry of Labour, *Instituto Ecuatoriano de Seguridad Social* (Social Security Institute), and the *Consejo Nacional Electoral* (National Electoral Council).
- **Massive validation of data** – Institutions send a database of their register; DIGERIC validates the information and sends back an updated register.
- **National system of citizen identification** – Allows public and private institutions to submit queries for identity information. In response, they get a PDF document with identification information from the citizen's ID card. This replaces the requirement for a person to present a certified copy of their ID card. This service is used by notary offices, retail stores (such as for financing big purchases), and others.

In 2018, DIGERCIC signed agreements with 115 public and private institutions. The agency responded to:

- 6,490,681 paid queries through the National System of Citizen Identification;
- 21,074,983 paid queries via data web service; and
- 196,305 queries through massive validations.[9]

By 2019, the agency estimated that it received about 80 million queries each year from the public sector and 20 million from private organizations. These do not include queries managed through the National Public Data Registration System, where DIGERCIC's information is also available.

Heading into 2020, DIGERCIC expects to be able to offer online services for verifying identity using biometrics.

DIGERCIC works closely with public institutions and agencies to improve service by sharing reliable and updated identity information. These include the *Ministerio de Inclusión Económica y Social* (Ministry of Economic and Social Inclusion) and the National Electoral Council.

Improving the impact of child development policies

The National Development Plan includes a nutrition indicator for children aged 0 to 3. The Ministry of Economic and Social Inclusion does vulnerability assessments of children and their households, and identifies potential beneficiaries for social programs and benefits. The goal is to identify children within the first month after birth, monitor their progress through their UIN, and share this information with the Ministry of Education once children are in school. Before DIGERCIC was modernized, this was very difficult.

"Children used to fall through the cracks of the system, and massive identification of beneficiaries was only possible after they were enrolled in the education system."

(Tatiana León, Deputy Secretary for Integral Childhood Development)

This meant intervention to improve nutrition was less effective. To enroll, citizens had to present certified physical copies of documents, which was a long and costly process. The Ministry had to deal with forged documents and identity fraud.

To change this system, the Ministry worked with DIGERCIC. Now the agency sends the Ministry weekly updates on live births. But both institutions wanted to go a step further. They recently signed an agreement so the Ministry can have real-time access to information from DIGERCIC's online platform where live births are certified. This will allow the Ministry to do a quick vulnerability assessment and automatically enroll beneficiaries in nutrition programs. By doing this, their intervention is more efficient and has greater impact.

As Ms León says, ***"If we didn't have the information provided by DIGERCIC, monitoring indicators would be impossible."***

With this cooperation, the Ministry expects to increase coverage of early childhood benefits from 40 percent to 60 percent by 2021.

Enrollment in social security benefits[10]

DIGERCIC shares information with the Social Security Institute in two ways:

- The Department for Enrollment and Coverage consults DIGERCIC's information from time to time using the web service (online) and materialized views that the agency provides.
- Every three months, DIGERCIC performs a massive validation of the Institute's register; it identifies errors and inconsistencies, including deceased beneficiaries who are still enrolled.

The Institute's enrollment platform includes a section where potential beneficiaries must enter their ID number and date of birth. An agreement between the Institute and DIGERCIC allows the agency to verify and confirm identity and give the green light for enrollment. Coverage can be given to a spouse or partner and children: these options are automatically displayed thanks to the link between the platform and DIGERCIC's population register. This allows beneficiaries to be identified securely and helps to reduce double or false registrations.

Electoral register

DIGERCIC coordinates with the National Electoral Council to continuously update the electoral register. To do this, DIGERCIC periodically sends all information in the identification register. The Council cross-checks it with data from migration authorities and judicial institutions (some judicial processes might result in suspension or loss of political rights) to finalize the electoral register.

2.5 Financial investment and socioeconomic benefits

DIGERCIC's modernization plan began in 2010 with an initial budget of US$229.5 million. The plan was to be put in place within 4 years. The deadline was extended twice and is now set for 2021. By 2019, the total budget had reached US$267.1 million. By the end of the process, the total investment is expected to be US$277.6 million:

- US$203.8 million (73.4 percent) will be financed through Ecuador's own resources (General Budget)
- US$73.8 million (26.6 percent) will be financed through a loan from the Inter-American Development Bank.[11]

Expenses include:

- Administrative costs;
- Human resources;
- ID credential materials;
- Infrastructure and equipment;
- Monitoring; and
- Purchase of land to build facilities.

DIGERCIC is financially sustainable: its revenues have been higher than its expenses since 2015, halfway through the modernization plan. For services to citizens, four procedures account for almost 85 percent of revenues:

- Renewal or duplicate of ID card: 41 percent;
- Passports: 31 percent;
- E-certificates of vital events: 6 percent; and
- Copies of original paper records: 6 percent.[12]

Estimating the socioeconomic benefits of solid CRVS and ID systems

The agency estimates that since 2011, by simplifying processes and making them more efficient, it has saved citizens US$5 million every year. Also, to assess how efficient and sustainable the investment is, DIGERCIC measured three more cost savings of the modernization process. These underline the socioeconomic benefits of having a solid civil registration and identification system. The costs saved are due to:

- A more efficient process for issuing ID cards;
- Fewer crimes related to forged documents and identity fraud; and
- Less data correction needed.

Estimates included projections for 2019–2021 (Table 2.3).

Year	Expenses	Revenues	Total socioeconomic benefits	Total revenues + benefits
2010	26,498,824.84	18,042,857.26	N/A	18,042,857.26
2011	70,027,225.59	23,806,673.41	30,031,243.37	53,837,916.78
2012	79,529,437.41	48,123,992.74	26,885,335.96	75,009,328.70
2013	94,481,743.94	58,145,771.71	23,597,063.28	81,742,834.99
2014	85,717,904.36	55,380,137.87	20,163,093.13	75,543,231.00
2015	53,589,325.22	57,525,097.78	16,580,764.50	74,105,862.28
2016	50,758,960.22	57,090,759.55	12,847,945.29	69,938,704.84
2017	51,316,743.91	74,240,774.67	8,963,123.62	83,203,898.29
2018	47,555,160.46	81,758,907.22	8,954,925.94	90,713,833.16
2019	60,843,884.76	82,039,393.83	7,582,956.36	89,622,350.19
2020	69,935,970.48	82,782,407.50	7,559,627.69	90,342,035.19
2021	50,265,732.54	83,782,336.65	7,701,917.32	91,484,253.97
	740,520,913.73	**722,719,110.19**	**170,867,996.46**	**893,587,106.65**

Table 2.3: Revenues and socioeconomic benefits (2010–2021).

Source: DIGERCIC 2019. All figures are in U.S. dollars.

When these variables were included in the cost-benefit analysis, DIGERCIC found that the investment has been profitable (revenues and benefits are higher than expected costs). Projected to 2021, the investment is sustainable.

Conclusion

A decade of modernization and good practices

From being in a state of emergency in 2008, DIGERCIC has transformed itself into a modern civil registration and identification agency. In 10 years, DIGERCIC

- went from a paper-based to an electronic registration process;
- increased birth registration and reduced the high rates of late registrations through online certification of live births;
- increased identification coverage;
- began issuing a modern and more secure national ID;
- reduced the requirements and time needed to get an ID card; and
- transformed obsolete technology infrastructure by bringing together internal teams that can develop technological solutions.

Modernizing, automating processes, and digitizing records have led to concrete advantages for citizens and for the public administration: these include saving money and time. DIGERCIC now provides reliable information on residents' identity and has helped to provide better services. Challenges remain, since some segments of the population are still systematically excluded. But the agency has put in place good practices that have greatly improved the quality and inclusiveness of services, earning DIGERCIC a 91.9 percent user satisfaction rate.

Some of those good practices are listed in this report.

- The modernization process was supported by strong political leadership and financial commitment.
- This was followed by a clear and updated legal framework, one of the goals of the modernization plan.
- In consolidating improvements and strengthening the CRVS and ID management systems, DIGERCIC engaged in institutional coordination with key counterparts, such as the Ministry of Health and the National Institute of Statistics and Census.
- This coordination allowed the agency to standardize concepts and methodologies to ensure comparable data and solid vital statistics.
- Using digital technology greatly improved the quality of services the agency provides. Designing and putting in place an online certification of live births and deaths helped reduce under-registrations and late registrations. It is also beginning to improve death registration coverage.
- Birth registration has also improved now that civil registration services are provided in health facilities. The fact that 100 percent of registration is done electronically, a UIN is assigned at birth, and efforts have been made to digitize civil registration information and paper-based records has resulted in a more complete civil registration database. It also means a better integration of civil registration and identification information. This allows DIGERCIC to provide digital certificates of vital events with full legal validity, reducing the need for paper and the time needed to get certificates.

- To close the last gaps and reach populations that are historically excluded, DIGERCIC uses strategies like mobile units and special brigades to reach remote areas and vulnerable citizens. These benefit rural populations, Indigenous communities, African Ecuadorians, and others.
- Finally, to measure users' satisfaction and use feedback to improve service, DIGERCIC conducts a monthly average of 3,000 surveys nationwide. To assess how sustainable its business model is, the agency looks at direct financial revenues and estimated social benefits of the modernization process. These highlight the advantages of having a solid civil registration and identification system.

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KYRGYZSTAN

CASE STUDY 3

Contents

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Acronyms

ID	Identity
ICT	Information and Communications Technology
IT	Information Technology
SRS	State Registration Service
UIN	Unique Identification Number
UN	United Nations
UNDP	United Nations Development Programme
UPR	Unified Population Register
USAID	United States Agency for International Development

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Executive summary

Kyrgyzstan's identity system is a good example of a holistic approach to civil registration, vital statistics, and identity management from birth until death. In Kyrgyzstan, a person's identity is legally recognized when their birth is registered. Certified birth information is later used to obtain other identification (ID) documents, such as national ID or travel documents. As subsequent life events are registered, new information is reflected on new identification documents that are issued by legally appointed government agencies.

Currently, Kyrgyzstan's identity system falls entirely under the authority of the State Registration Service (SRS). Although initially built using traditional paper-based civil registration, vital statistics, and identity management processes, the system was updated in 2014 to digitize the collection, processing, and retention of identity data.

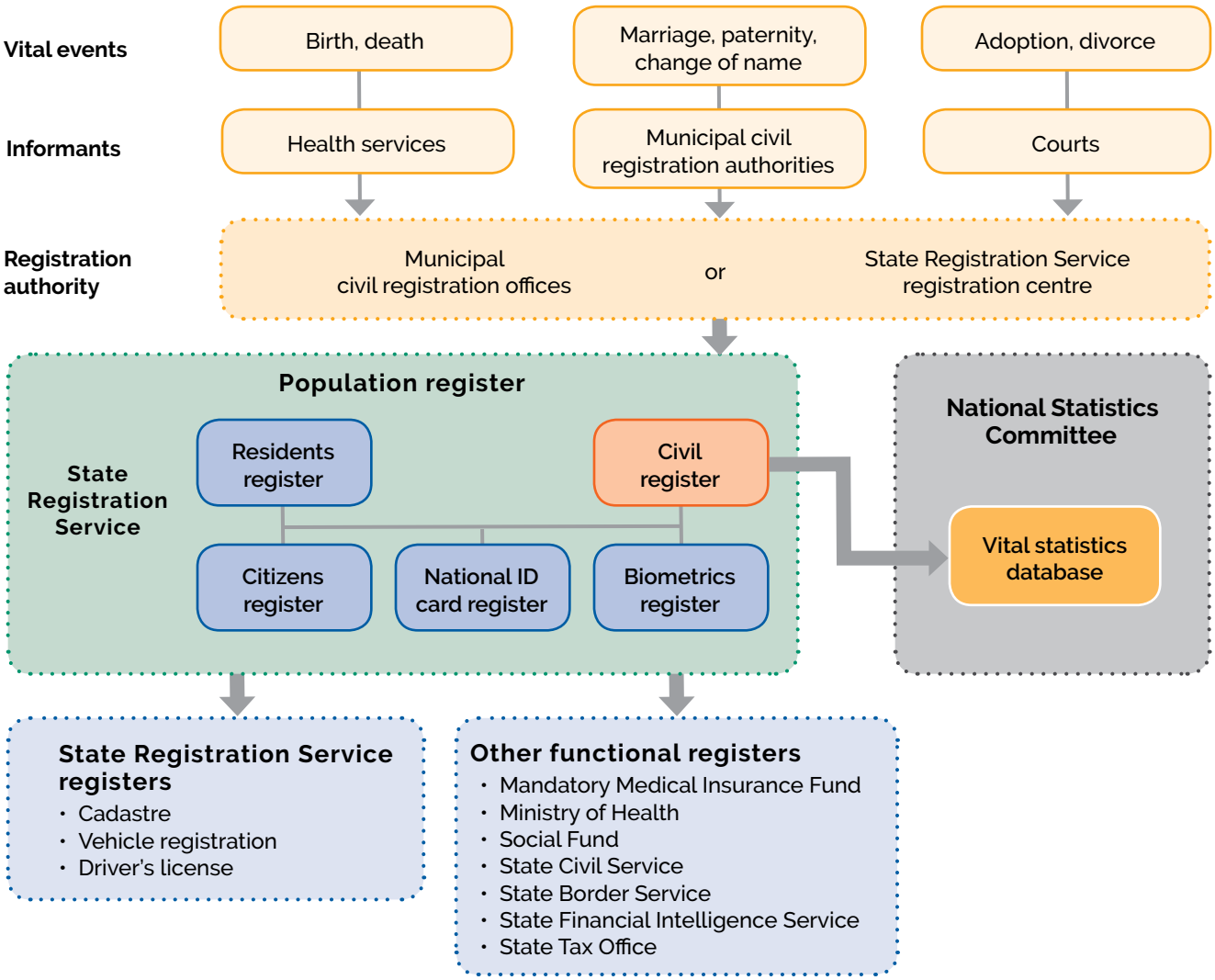

Figure 3.1: Overview of Kyrgyzstan's civil registration, vital statistics, and identity system.

Source: Author

Kyrgyzstan's identity system is based on registering vital events through civil registration. Vital events are documented and communicated to civil registration authorities by medical authorities (births and deaths), courts (divorce and adoption), or appointed civil registration authorities (marriage, paternity, and change of name). All vital events are registered digitally and linked using a unique identification number (UIN). The UIN is assigned at birth, stored in the central civil register, and recorded with each newly registered event or issued identification document.

The central civil register is part of a larger information and communications technology (ICT) system comprising different databases that store identity information. All of a person's registered vital events are linked by UIN (citizenship, address of residence, national ID cards, international travel document information, and biometric data). This ICT system, branded as the Unified Population Register (UPR), is one of four distinct ICT platforms operated by the SRS.

National ID cards and travel documents are issued upon request based on current identity information in the population register. The population register also compiles personal information that is communicated to the National Statistics Committee and used to generate vital statistics information. Identity data stored in the population register is also used by other government services such as cadastre, vehicle registration, and driver's licenses. Operated by the SRS, these systems use current identity information from the population register in their interactions with the public. Other government organizations with systems that require up-to-date population identity information can sign a memorandum of understanding to obtain access to identity data required for service delivery.

Summary of good practices

Digitizing civil registration and identity management has strengthened Kyrgyzstan's traditional holistic approach to civil registration, vital statistics, and identity management. Digitizing civil registration business processes and linking a person's registered vital events by UIN gives authorities a direct overview of all registered events that relate to personal identity. Digitization also prevents duplicate registrations of vital events and provides authorities with a range of instruments to mitigate the risk of fraud. For citizens, a paper registration certificate is no longer the only way to prove that a vital event has been registered.

Resident citizens who request a national identity card or travel document cannot add identity data to the document unless it has been updated in the population register. Any new identity information that should be reflected on an identification document must be first registered as vital event.

Identity management authorities and other government service providers can now access information electronically directly from the population register, which limits the risk of fraud by falsified or fabricated paper certificates.

As new identity data is entered into the civil register, it is automatically forwarded to other services that require this information. For instance, death registration triggers the removal of the deceased from the voter list, terminates their pension payments, etc.

3.1 Introduction

General information

Country name	Kyrgyzstan
Surface	199,900 km^2
Geographic location	Central Asia; bordered by Kazakhstan to the north, China to the east and south, Tajikistan to the south and west, and Uzbekistan to the west.
Total population	6.202 million (World Bank 2017)
Share of urban population	37.4 %
Official language	Kyrgyz and Russian
Civil registration and civil identification agency	State Registration Service under the Government of the Kyrgyz Republic
Birth registration rate	98.9%[1] (boys 99.5%, girls 98.4%)[2]
Death registration rate	Not available
Identification coverage	Not available

Table 3.1: Kyrgyzstan country information.

Kyrgyzstan is a mountainous, landlocked country in Central Asia with a population of approximately 6.2 million. Bishkek, the capital and largest city (population 850,000) is in the north close to the Kazakhstan border. The other major population centres of Osh and Jalalabad are located in the south, where the majority of the population live, and where there are plentiful valleys and plains with more plowable land available for agriculture.

Figure 3.2: Kyrgyzstan geographical map.

Disclaimer: The boundaries used on this map do not imply official endorsement or acceptance by the United Nations.

In addition to close economic and social relations with its neighbours, Kyrgyzstan has strong historical links to Russia as a constituent part of the former Soviet Union. Previously, it was part of the Russian Empire. These links have strongly influenced the contemporary legal system, state institutions, administrative policies, procedures, and governance.

Kyrgyzstan has a long tradition of registering vital events that dates to the period when the country was part of the Soviet Union. Over time, a comprehensive administrative and legal framework was developed to ensure timely registration of vital events in line with UN standards and recommended practices. At present, registration rates are slightly below universal coverage.

Identification documents, such as internal passports and international travel documents, are remnants of administrative traditions used during the Soviet period. Aside from serving as identification, the Soviet internal passport also served as permit to reside in a specific local community and was used as an instrument to control migrations within the Soviet Union. The issuance of internal passport was subject to the individual presenting a certificate issued by civil registration authorities as principal evidence of identity.

Civil registration processes in Kyrgyzstan have remained largely unchanged until 2009, when legislative and institutional changes took place. However, the practice of using an identification document as a residence permit was abolished and the internal passport has evolved into a national identity card that serves as identification and proof of identity. Freedom of movement is guaranteed under the constitution. The state still requires people to register their address of residence, but this information is now used for planning and service delivery.

KEY DATES

1877 Oldest civil status recorded (kept in the Archive of Civil Status Registration Acts).

1924 Civil status registered. Internal passports issued by the Soviet Union local executive committees.

June 16, 1992
Authority over civil registration transferred to the Ministry of Justice in accordance with the Kyrgyz Republic Presidential Decree, "About Measures on Improvement of Activity of Bodies and Institutions of Justice of the Republic of Kyrgyzstan."

November 17, 2009
SRS established by Resolution No. 708 of the Government of the Kyrgyz Republic.

August 2014 – July 2015
Introduction of digitized registration of vital events in line with the Law of the Kyrgyz Republic, "On the registration of the biometrics data of citizens of the Kyrgyz Republic," from July 14, 2014. SRS completes country-wide registration of biometrics of all Kyrgyz citizens over age 16 to compile initial data for the population register.

August 1, 2016
Civil registration offices are authorized to assign a personal UIN to Kyrgyz citizens, resident noncitizens, and stateless persons.

Figure 3.3: A timeline of civil registration and identification.

3.2 Legal and institutional arrangements

Legal framework

Kyrgyzstan's existing legal framework provides clear, comprehensive guidance for registering vital events and issuing identity credentials.

The registration of vital events is regulated by the *Law on Acts of Civil Status*,[3] the Rules on Procedures for Civil Status Acts Registration, Codecs on Children, and the Family Code of the Kyrgyz Republic.[4]

Identity management and issuance of identification credentials is regulated by:

- Status of National Passports of the Citizens of the Kyrgyz Republic;[5]
- Decree on National Passports of the Citizens of the Kyrgyz Republic;[6]
- On the Approval of the Instructions on the Procedure for Receiving Documents, Registration, Fabrication (personification), Accounting, Issuance, and Destruction of an Identification Card Passport of a Citizen of the Kyrgyz Republic of 2017 format (ID-card), and a Common Citizen's Passport 2006 Kyrgyz Citizen;[7] and
- *Law on Internal Migration*.[8]

Privacy and data protection are regulated by the *Law of the Kyrgyz Republic on Personal Information*.

Institutional arrangements

Until 2009, civil registration and identification followed institutional arrangements inherited from Soviet times. Civil registration fell under the authority of the Ministry of Justice, while address registration and issuance of the internal passports and national ID cards remained the responsibility of the Ministry of the Interior. In November 2009, the Kyrgyz government issued a decree that marked the turning point for institutional arrangements for civil registration and identification. Resolution No. 708 mandated the creation of the State Registration Service (SRS) as a new agency responsible for

- registering civil status acts and place of residence;
- issuing national ID cards and travel documents;
- registering real estate rights and maintaining the land cadastre;
- registering vehicles and driver licensing; and
- maintaining the population records in the State Archive.

Since the establishment of the SRS, the Department of Population and Civil Status has been strategically working towards tightening integration and digitizing different registration processes.

3.3 Civil register

In Kyrgyzstan, the basic characteristics of an individual's identity have traditionally been registered by civil registration authorities as part of the ongoing process of registering vital events.

Until 2014, the civil registration system was entirely manual and paper-based, with registrations for each type of vital event recorded in a dedicated registration book across 60 civil registration offices and 519 local government authorities. A second copy of each completed registration was transferred to the central civil register archive in the capital of Bishkek, and a third copy transferred to the central statistics authority to process vital statistics.

In keeping with the *Law on Acts of Civil Status*, responsible registration authorities are mandated to register birth, marriage, divorce, change of name, parenthood, adoption, and death. The system can also accommodate corrections, which means that in some cases, registration dates and other data can be modified.

Birth registration is initiated upon receipt of notification from the health authorities that a birth has taken place. The information communicated by the health authorities also contains basic information on the identity of the person giving birth. The health authorities also provide such notification in instances when the birth has taken place at home. A parent coming to register the birth of their child identifies themselves with a valid identification document (for example, national ID card). Registration officials must ensure that the identity information on the provided identity documents match the identity information recorded on the notification from health authorities. Only then can the act of registration of birth be produced. One copy of the registration act is kept at the local branch of the Department, while a second copy is transferred to the state archive of birth registration acts. Once the registration is complete, authorities issue a birth certificate that recipients may use once they are eligible to obtain other ID documents.

When registering other types of vital information, particularly those that update a person's identity information, such as marriage, divorce, or name change, authorities verify the applicant's identity using identification documents, such as the internal passport.

A birth certificate that is issued by civil registration authorities is legally defined as the principal proof of identity information. Registration certificates continue to be required as a person's identity information changes throughout their lifetime. While other documents such as an identity card or passport can also be used as proof of identity, the identity information copied on these documents must be identical to the civil register. In the event of a discrepancy between the information on the document and the information stored in the civil register, the information in the civil register legally prevails.

As civil registration records began to offer up-to-date identity information, other public administration systems that processed personal information also needed to reflect new layers of identity information as registered. Information from the civil register became essential to certify changes in identity information in other registers that used a paper-based identity management system.

Good practice: Providing proof of up-to-date identity information

Generally, a vital event certificate is first required when a person requests a national ID card at the age of 16. In this case, a person's identity credentials must mirror the information on the birth certificate.

People must provide a marriage certificate in order to update the marital status on their national ID card.

To change or update their first or last name, applicants must provide a certificate from the civil register before these changes can be applied to their ID card.

The process of issuing travel documents involves a similar approach.

Kyrgyzstan's identity system extends to a range of functional registers operated by relevant agencies to cater for delivery of specific service or to ensure access to guaranteed rights. The Social Fund beneficiaries register has traditionally been the most comprehensive single database; it was digitized well before the civil registration system. The voter register has been also been continuously updated as one of the largest databases of personal information of the adult population. Large databases of personal information were also found in the education and health sectors, in cadastre, tax authorities, and registers of vehicles and issued drivers' licenses.

In order to operate with up-to-date and legal identity information, many of these registers depended on civil registration certificates as legally valid documentary evidence. Enrollment of the non-adult population in the education system, health services, and social support schemes for families with children depends upon the presentation of a birth certificate.

For enrollment in the functional registers storing the adult population's information, a national ID card was used as the main source of identity information. Under this analogue system, changes in the characteristics of a person's identity, in most cases, were further propagated to functional registers after they were reflected in a re-issued national ID card.

In many instances, certain rights and services could only be accessed upon presenting a relevant certificate from the civil status registration book.

Good practice: Requiring presentation of relevant documents from the civil register

Kyrgyzstan's State Registration Service Department of Cadastre and Registration of Rights to Real Estate requires that marriage certificates reflect ownership rights over specific real estate.

Inheritance rights over the property of a deceased owner are determined based on certified information about immediate family members in the civil register.

Families must present proof of death registration to remove the name of a deceased beneficiary from specific services. This procedure helps properly compile voter lists, operate social protection schemes, and manage pension funds or taxation services.

Digitizing the civil registration system

Early on, Kyrgyzstan decided that establishing a centralized civil register would be fundamental to creating a unified population register. As a result, the civil register was the first system to be digitized and has been operating digitally since 2014.

To complete the process of digitization, 58 civil registration offices across the country were computerized and connected to a central civil register database. Digital connection to the civil register database was also extended to include 24 Kyrgyz diplomatic missions, 363 information kiosks at post offices, and 11 local authorities. Separate digital databases were created within the central digital civil register to mirror the practice of keeping information on registered vital events in dedicated vital events registration books. Registration records are updated sequentially. Digitizing the civil registration system allowed all newly registered civil registration acts (or records) to be linked using UIN and aggregated within a single database, giving the State Registration Service (SRS) oversight over the registration of civil status acts in all local civil registration offices.

Assigning a unique identification number at birth

A unique identification number (UIN) is key to operating a digitized civil register. UIN links all of a person's registered vital events, allowing the generation of up-to-date identity information. It further allows authorities to identify how specific characteristics of a person's identity have changed over a specific period. A UIN also ensures that a person's vital events can only be registered once.

The SRS was legally appointed as the authority responsible for issuing personal UINs. Since August 1, 2016, civil registration offices are also authorized to assign UINs to Kyrgyz citizens, resident non-citizens, and stateless persons. The UIN is automatically assigned when a birth is registered. The same UIN is linked to all subsequent vital events recorded under that person's name.

For people born before 2016, the SRS creates a UIN using the sectoral unique identification number assigned by the Social Fund, which previously operated as the largest functional digitized register of beneficiaries in the country.

When registering vital events, registrars benefit from a broader range of information stored in the UPR, such as personal information about parents who are registering their child. When people register a change of name or a marriage, registrars can verify their national ID cards through the National ID cards database. For citizens, a digitized system allows registered information to be easily retrieved, allowing new and duplicate certificates to be issued at any civil registration office.

Good practice: Digitizing the civil registration system

Digitizing civil registration and identity management has strengthened Kyrgyzstan's traditional holistic approach to civil registration, vital statistics, and identity management. Digitizing civil registration business processes and linking a person's registered vital events through a UIN gives authorities direct information on all registered events that define the characteristics of one's identity.

Vital statistics

Civil registration in Kyrgyzstan has traditionally been a source of data for the production of vital statistics. Aside from registering information about a person's identity, the birth and death registration process generates medical statistics data on a designated form. This form is not the part of the vital event registration record. Rather, it is completed using information forwarded by medical authorities on the medical certificate and subsequently transferred to the National Statistics Committee to process vital statistics.

Digitization has made data sharing with the National Statistics Committee more efficient. The National Statistics Committee also benefits from a wider range of information available in the population register, particularly demographics and population movements. Up-to-date vital statistics data are also available on the National Statistics Committee's website.[9]

The SRS is working with health authorities to establish a process to digitize medical certificates and communications with civil registration authorities. Currently, these certificates are completed manually and transmitted on paper. The SRS has identified this as a bottleneck in the process of drawing up registration records, and more importantly, in compiling vital statistics records for subsequent processing by the National Statistics Committee.

3.4 Unified population register

Combining registration authorities within one agency created the basis for streamlining business processes to make operating the State Registration Service (SRS) more cost-effective. Since each registration service under the SRS authority uses personal data, the system needed to include measures to eliminate discrepancies in identity information across all services. The Unified Population Register (UPR) was designed to link the digitized civil registration system with the digitized systems used to issue national ID cards and travel documents.

This approach also ensures that all of a person's legal identity information and personal information required for identification can be easily retrieved and shared with other registers within the SRS authority. In a regulated environment, this information can be shared with functional registers operated by public authorities or commercial entities. In addition to complementing existing civil registration and civil identification data, the population register integrates the residents and citizenship registers, which provide information on address of residence and citizenship.

Although the SRS identified digitizing registration services as a strategic goal early on, implementation only intensified after 2014. Digitizing registration services involved establishing a unified population register (UPR) system designed to combine independently developed digitized systems to record civil registration, register address of residence, and issue ID cards and travel documents. The SRS also introduced a digitized citizenship register and implemented a system to capture and store digitized biometric information.

These digitized systems were modelled and built around traditional paper-based business processes. They use a system of digitized databases to mirror the traditional processes of recording vital events in registration books and national ID card/travel documents in application archive registers.

The registration process follows the procedures defined in the legislation and do not differ dramatically from the paper-based system. The similarities with the legacy paper-based system end at the point of entering registered data in the digitized system. The way registered information is stored in the system and shared with other databases within and outside of the unified population register shares almost no similarities with the legacy system. For the visual presentation of the system (Figure 3.4), it is useful to present each register in the unified population register as a separate database. However, in the physical world, each of these registers is implemented as software applications or databases hosted on one server or data centre, or distributed across several servers or data centres.

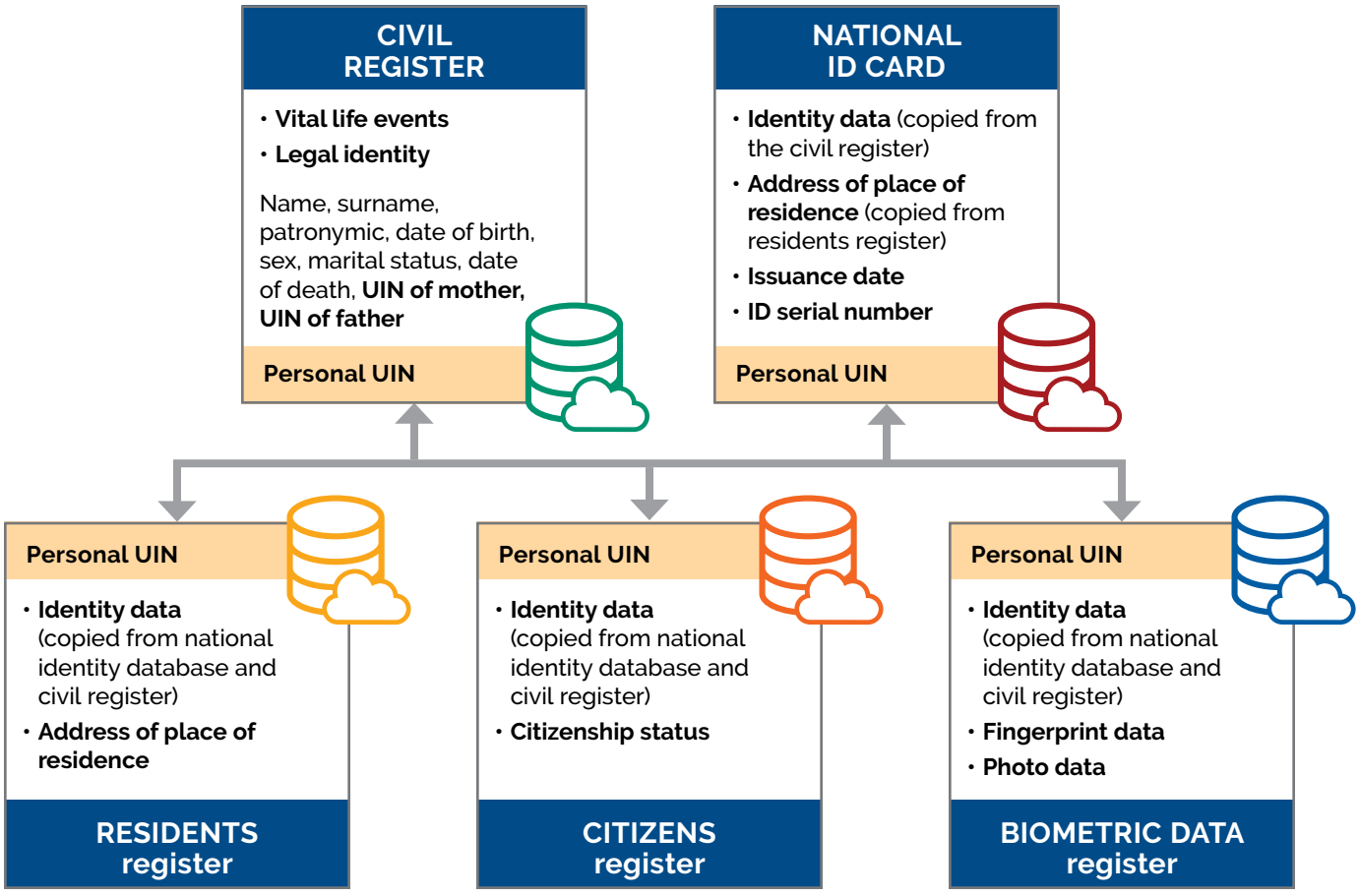

Figure 3.4: Schematic representation of a unified population register.

A key component to digitizing registration records and operating the UPR was legalizing the requirement to use a UIN in all databases that store personal information operated by all levels of government. Introducing the UIN using the principle "one person – one UIN" allowed for specific personal information to be dynamically linked across all registers/databases.

In addition to the five digitized systems built around traditional registers, the UPR also relies on two newly established databases:

- **Personal biometric database** stores current biometric personal data collected during initial enrollment and when national ID cards are reissued. It provides biometric verification services to other systems.
- **Address registe**r catalogues legally approved cities, towns, local communities, street names, and assigned building numbers. The address register is permanently updated and used when assigning a permanent or temporary address of residence in the resident register.

Finally, the UPR benefits from a payment gateway application that allows cashless payments of registration fees. Although these systems formally have the role of auxiliary databases, they are fairly elaborate digitized systems that provide critical information to other systems.

The UPR is fully operational, and all newly completed registration records are entered digitally. The UPR provides regulated online access to current information on a person's legal identity, identification information (photo or fingerprints), and documents issued to that person.

Although the register is designed to retrieve personal data to support the application/registration request in the civil registration database, not all records are available in digital format. To complete the digitization of civil registration records, the SRS continues to digitize historical civil records, focusing primarily on death registration. Further, birth certificates continue to be digitized as people apply for national ID cards or travel documents.

While the UPR integrates data collected by all services under the SRS authority, the information available to each service is strictly limited. Each service can register and update only the type of personal information for which it is legally authorized, as outlined in the table below.

Civil register	Name, family name, patronymic, sex, date of birth, marriage status
Citizenship	Citizenship status
Residents	Address of place of residence
National ID card	Information on issued ID document
Travel documents	Information on issued travel document
Biometric data	Personal biometric information

Table 3.2: Information contained in the unified population register.

Further, the UPR is designed to ensure that each service can access and view only specific types of personal data that are legally required to complete the registration process. The civil registration system can access specific personal data stored in other databases. When registering vital life events, civil registration authorities can view

- citizenship status from the citizens database;
- information on issued national ID from the identity documents database;
- information on parents' national ID from the ID documents database for birth registration; and
- information on registered address of residence from the residents' register.

While the civil registration process benefits from direct access to specific types of personal information in the population register, information contained in the civil register database also supports other services by providing access to up-to-date personal information.

Components of the UNIFIED POPULATION Register (UPR)	• Registers and provides information to other UPR components	• Requires information from other UPR components
CIVIL register	• **Vital life events** • **Legal identity data**	• Citizenship • National ID card • Residents • Address register
CITIZENSHIP register	• Citizenship status	• **Civil register** • National ID card
RESIDENTS register	• Temporary residence • Permanent residence	• **Civil register** • Citizenship • Address register
NATIONAL ID CARDS register	• National identity data	• **Civil register** • Citizenship register • Address register • Residents register
TRAVEL DOCUMENTS register	• Travel document data	• **Civil register** • Citizenship register • Address register • Residents register
BIOMETRIC DATA register	• Biometric data • Legal identity data	• National ID card register • Residents register • Address register

Table 3.3: Civil registration as a source of data for other subsystems of the unified population register.

Citizenship conferral process

A digitized system supporting the process of citizenship conferral is designed to retrieve legal identity data from the civil register to determine whether a person meets citizenship requirements. In the event that a citizenship certificate must be produced, the citizenship information system will print the certificate while automatically confirming legal identity data from the civil register.

Registering address of residence

A digitized information system that supports registering addresses as place of residence draws on the latest legal identity information from the civil register to locate the applicant's most recent personal data, assign an address, and update the record in the database.

National ID cards

The digitized system that issues national ID cards automatically assigns personal identity information retrieved from the civil registration system. Applicants' national ID card only includes the information that is automatically generated from the civil register. To obtain an ID card using different identity information, the information must first be registered in the civil register as a vital event. The national ID card information system will not issue a card if the civil register includes a death registration for that person.

Travel documents

The process for obtaining travel documents mirrors the approach used to issue and reissue national ID cards. As many travel documents are issued to children or minors, the travel documents issuance system can automatically retrieve parents' ID data for verification purposes.

Initiating the Unified Population Register

The most important aspect of the establishment of a Unified Population Register (UPR) is the transformation from paper-based to digital data processing. When the decision to develop the UPR was made, few services were using digital data, and in these cases, the information had been only partly digitized.

Although the digitization of the civil register was identified as a critical component of the UPR, creating digital copies of civil registration archives meant transferring approximately 15 million archived civil registration records. Another challenge was ensuring that all of a person's civil records were identified and linked using a UIN. Waiting until paper-based records were completely digitized would have been costly and would dramatically delay the UPR's implementation.

A turning point in determining the optimum approach to digitizing and implementing the UPR came with the decision to transfer voter registration from the Central Election Commission to the SRS. For many years, the Kyrgyz electoral process suffered from a lack of trust in the accuracy of voter lists. Voter lists were traditionally created by local authorities based on the registered resident records and aggregated in a central database operated by the election authorities. The lack of trust in voter list accuracy was manifested in widespread allegations of inaccuracies and the inclusion of the deceased on voter lists. This was compounded by a lack of trust in the authentication of voters' identities at polling stations.

After lengthy public consultations, the SRS was determined to be the best option to compile voter lists, given that it maintains records on identity and address information for all voters. By Presidential decree, the SRS was given authority to produce voter lists and create conditions for biometric authentication of voters at the polling station.

Once the law on biometric data collection was adopted, the SRS began a country-wide biometric rollout that included transferring identity data from the legacy ID card into a digitized database, coupled with a photo and ten fingerprint biometric data. At the end of the process, more than 3,155,000 citizens had been enrolled in biometric registration and introduced in the Voter List Management Information System. Everyone over the age of 18 who had enrolled their biometric data was included on the voter list. The system was successfully implemented in the Parliamentary elections of 2015 and has received broad trust and endorsement from politicians and the general public.

The successful compilation of the voter list gave the SRS a further boost and increased public support to create the UPR. At the same time, the digital data collected as part of the biometric rollout became a basic repository of digital personal information around which other systems are digitized.

In practical terms, this approach has several important consequences:

- When people request new ID card, they must present a relevant set of civil registration certificates. If the information is not available in the digital civil register, registration certificates are scanned and stored digitally. When a person reapplies for an ID or travel document, they do not need to resubmit the certificate, as the scanned version is already available. Also, all vital events registered after 2015 are available electronically in the system and do not require submission of a paper certificate.
- As part of the ongoing process to digitize civil status acts, the SRS digitized all death registration records since 2009. As such, any attempt to obtain an ID, travel documents, or other services using the identity of a deceased person will be blocked by the system. This is particularly important for services where biometric authentication is not enabled. In the case of ID and travel documents, this provides added security for the issuance of a first ID card or travel document, as subsequent documents will require biometric verification.
- As part of the ongoing process to issue a new generation of ID cards, all submitted birth certificates have been scanned. As the entire population will receive new generation ID cards, almost all birth certificates of the adult population will be digitized. Over time, the volume of civil registration records remaining to be digitized will decrease and will be limited to people born before 2015 who are not yet old enough to apply for a mandatory ID document. Nevertheless, as the volume of data to be digitized shrinks, the SRS may choose to clear the backlog by designing dedicated digitization projects.

Digitizing civil registration and linking registered information through the UPR with other parts of the identity management systems provides a range of improvements for civil registration. Prior to digitization, there was no way to check for duplications of a person's vital events. By introducing a digitized system and a UIN, the system automatically prevents the duplication of records. Furthermore, digitizing historical records will identify whether any such attempts have been made in the past.

3.5 Sharing information with other functional registers

The Unified Population Register's (UPR) main purpose is to unify all legal identity information including information that can be used to identify persons claiming a specific identity. Another important function of the UPR is to share this information with other sectoral functional registers that form part of the broader identity system and are maintained by either public institutions or commercial service providers.

In addition to civil registration and civil identification, the State Registration Service (SRS) is legally responsible for some key functional registers in the country, such as cadastre, voter register, driver's license register, and motor vehicle register. Digitized systems supporting these functional registers are part of a larger ICT platform operated by the SRS, with each of these systems linked to the UPR and able to access up-to-date legal identity information, including other types of personal information kept in the UPR.

Kyrgyzstan's voter registration system relies exclusively on data from the UPR. Using identity information from the national ID cards register and address information from the residents' register, the SRS has developed an application that can extract and print voter lists directly from the UPR in line with the predetermined geographical boundaries of polling stations. The application also verifies voter identity information against information in the civil register and prevents names of the deceased from being added to the voter lists. The voter register system also generates a digital copy of the voter lists with corresponding voters' biometric data. This information is uploaded on computers that are delivered to designated polling stations and used for biometric authentication of voters on election day.

The information subsystem used to issue driver's licenses benefits from direct access to personal information stored in the national ID register. Eligible people who apply for a driver's license need only to present their national ID and sign an application that is prefilled with identity and other data from the population and driver's license registers. The same approach was also implemented for motor vehicle registration.

SRS has implemented an elaborate ICT platform to share data between ICT subsystems that support specific SRS services. To accommodate the data needs of other functional registers operated by other public authorities or commercial entities, the SRS developed a digital platform that allows ICT systems of other government institutions to access information in specific SRS databases.

The SRS also concluded a memorandum of understanding with a number of government institutions to allow access to specific types of information within a regulated environment. This allows institutions to instantly verify documents provided by people who enroll for specific services. Institutions can also access the UPR to verify that the identity information in their registers corresponds with the most current legal identity information, or to obtain information on deceased individuals who should be removed from their functional register. Table 3.4 highlights the importance of accessing up-to-date legal identity information from the civil register.

In addition to the institutions listed, the Ministry of Internal Affairs and the State Committee for National Security also have access to identity information in the civil register database.

Public authority	Granted access (upon request) to SRS databases
Mandatory Medical Insurance Fund	**Civil register**, national ID register, and biometric data database
Ministry of Health	Residents register, **civil register**, national ID register
Social Fund	Residents register, citizenship, **civil register**, national ID register
State Border Service	Travel documents register, **civil register**, national ID, residents register
State Civil Service	Residents register, citizenship, **civil register**, national ID
State Financial Intelligence Service	Biometric data database, **civil register**, national ID, register of resident non-citizens, residents register, motor vehicles register, driver's licenses register
State Tax Service	Citizenship database, real estate register, **civil register**, national ID, residents register, motor vehicles register

Table 3.4: Civil registration as a source of data for broader identity management infrastructure.

Good practice: Sharing data with other registers to establish a state-wide electronic interoperability layer

In 2016, Kyrgyzstan introduced a state-wide electronic interoperability layer, allowing digital data to be shared among ICT platforms. The interoperability layer is built around the X-Road platform, an open source data exchange layer solution that allows organizations to exchange information over the Internet. X-Road provides a standardized, secure way to produce and consume services and ensures confidentiality, integrity, and interoperability between data exchange parties. The X-Road platform in Kyrgyzstan, Tunduk, was named after the X-shaped roof structure of the yurt, a traditional house built by ancient Kyrgyz tribes. The interoperability platform is operated by the State Enterprise Electronic Interaction Center under the State Committee of Information Technologies and Communications of Kyrgyzstan.

In addition to its own digital platform for data sharing, the SRS uses the Tunduk platform to allow access to civil registration and other data in the UPR for the following agencies:

- Mandatory Medical Insurance Fund;
- Ministry of Foreign Affairs;
- Ministry of Health;
- Ministry of Internal Affairs;
- Social Fund;
- State Border Service;
- State Committee for Information Technology and Communications;
- State Committee of National Security;
- State Commission for Religious Affairs;
- State Customs Service;
- State Financial Intelligence Service;
- State Personnel Service; and
- State Tax Service.

The National Statistical Committee also uses Tunduk to access civil registration data and collect vital statistics information. While most agencies access information upon request, changes in legal identity information in the civil and national ID registers are shared daily with the Social Fund and State Tax Service.

Access to Suinchu social service

Leveraging Tunduk's digital platform, the State Registration Service (SRS) is taking the lead in developing electronic services that link different public and commercial entities to facilitate access to specific social services. One such initiative is Suinchu, a term describing a gift given to mark the birth of a child. This service aims to support the Ministry of Labour and Social Development in distributing financial grants of 4,000 SOM (US$57) to all families with a newborn child.

Traditionally, citizens were required to collect a range of paper certificates to prove their eligibility when applying for financial grants. The SRS will now allow parents to complete an electronic grant application when they complete a birth registration. This electronic application will be automatically pre-filled with legal identity data for the newborn obtained from the civil register, and parents' identity data retrieved from the national ID database.

As part of the application process, parents will be invited to select the commercial bank where the grant will be transferred to a specific account created in their name. The application is then transferred via Tunduk to the Ministry of Labour and Social Development, where it is processed, and the grant is authorized. Acting on this electronic application, the selected bank creates an account to which the Ministry of Labour and Social Development will transfer the funds.

The SRS has developed relationships with commercial banks, microcredit institutions, and notaries that are granted access to the UPR to verify their customers' identity. The banks are generally interested in changes to personal identity data to pre-empt fraud attempts. The SRS plans to expand access to notaries or microfinancing banks to help them verify a person's identity for loan applications. Verification relies on establishing whether the ID a person provides reflects the identity data contained in the population register. Usually, this type of verification only requires confirming that the data presented matches the data in the population register, rather than full disclosure of identity data.

3.6 Benefits of strengthening the role of civil registration in identity management systems

The Kyrgyz experience shows the mutual benefits of a holistic approach to CRVS and identity management. It also proves that digitizing the two systems and having them work collaboratively results in significant benefits, such as the ability to introduce a wider range of automated checks and balances in the identity management system. It also provides registration authorities with complete oversight over the registration process, allowing them to intercept or prevent attempts to introduce false information in any part of the identity system, whether through multiple registrations or fabricated certificates.

Preserving system integrity

With paper-based registration systems, a person could register the same vital event more than once, with no preventative measures other than the threat of legal sanctions. As a person's vital events were registered, they were scattered across different books, often in different locations. There was no way to confirm the person's most up-to-date identity information. Since it was difficult for civil registration authorities to confirm the latest identity information, it was even more difficult (and sometimes impossible) for other government functional systems to determine whether a person enrolling in services was presenting a certificate for the most recent registered vital event.

Although various security features were introduced, certificate documents eventually became less reliable and prone to fabrication and falsification. In Kyrgyzstan, this resulted in a growing number of child marriages that were legalized using falsified civil registration certificates. There was no systemic way to crosscheck civil registration records or prevent multiple marriages.

Digitizing registration processes and aggregating data in the UPR established built-in safeguards that link individual vital events records and national ID records and help mitigate all risks.

Transforming data sharing processes

Under the previous paper-based Legacy system, identity information was shared on paper certificates. When a person requested a national ID or enrolled in a functional register to gain access to certain services, the individual was required to visit the location where identity information was registered, obtain the certificate, and then deliver it to the requesting authority. Digitization transformed this approach entirely.

Good practice: Using digital identity records to certify identity information

Except where specific vital events registration books have not been digitized, citizens no longer need paper certificates to request a national ID or to enroll for specific services. When a person presents an ID and UIN, their current civil registration data is instantly available.

The progress that Kyrgyzstan has achieved by digitizing its registration system and allowing access to external systems for various functional registers has allowed officials to track precisely how different information is being used across different parts of the broader identity management system. Monitoring data sharing between different systems reveals the importance of civil registration to identity management systems. Kyrgyzstan's identity management system has grown to become a large data sharing platform, with 14,989,013 requests processed in 2018. At the same time, the civil register is the third most frequently cited data source, which demonstrates the importance of civil registration in operating an entire identity management system.

Digital database	Number of requests
Residents register	5,466,600
National ID register	2,909,116
Civil register	**2,034,741**
Motor vehicles and drivers' licenses	1,492,572
Resident non-citizens register	1,102,044

Table 3.5: Top five State Registration Service digital databases as per number of processed requests.

The civil register plays a vital role to the wider identity management system, given that both the national ID register and the residents register seek to reflect the most current identity information possible. National ID cards are mandatory for people aged 16 years and older. However, since national ID cards are issued upon request, there is generally a delay between the registration of new vital events and the request for new national ID with updated identity data. In fact, other users of the UPR will often request an updated identity card, as the system will alert them that there has been a change in identity information. Table 3.6 illustrates how frequently these changes can occur, using data on the number of vital events registered in 2016 and 2017. Events such as marriage, divorce (which leads to a name change), and name changes would generally trigger the need to obtain a new national ID.

While statistical information is not available, many functional registers require marriage and family relationship information that is available only from the civil register, such as the Social Fund, tax authorities, and cadastre.

Number	Type of registration	2016	2017
1	Birth	159,584	155,036
2	**Marriage**	**48,936**	**43,325**
3	**Divorce**	**9,098**	**9,594**
4	Paternity	29,341	26,858
4	Adoption	1,025	980
6	**Name change**	**37,206**	**33,430**
7	Death	33,547	33,143
	Total	**318,737**	**302,366**

Table 3.6: Number of registered vital events.

Financial considerations

The setting up of the UPR was almost completely financed through allocated budget resources. The Kyrgyzstan government provided financing for a US$4.8 million biometric enrollment process to allow the initial digitization of citizens' identity data.[10] External agencies, including the South Korean Development Agency, the Japanese government, and UNDP provided additional funding to set up a biometric voter registration system to begin issuing new biometric ID cards. Since the UPR was established, all system upgrades and historical record digitization have been completed using existing allocated budgetary resources.

While the system has become increasingly efficient, there are also significant savings for citizens. Communicating personal information is now accomplished by automatically matching data in the electronic system, whereas in the past, it was transferred in person by paper certificate. This reduces travel costs to the registration office and the cost of taking time off from regular work. These costs, multiplied by the number of requests processed in the system, may provide an indicative perspective of aggregated savings to citizens.

USAID and the Estonian Foreign Ministry contributed US$560,325 to create the data exchange layer on which the e-governance in Kyrgyzstan is built, and to provide training to civil servants and IT specialists. Some estimates indicate that introducing Tunduk will result in savings of up to $300 million per year[11] in the national budget.

Conclusion

Reforms to the Kyrgyz identity ecosystem demonstrate that with strong political commitment and government funding, traditional paper-based identity systems can be transformed into highly integrated digitized systems within several years. The results of this transformation have quickly materialized into a range of benefits for many government services and have contributed to an overall increase in public governance efficiency.

The political commitment for this initiative stemmed from the realization by key political stakeholders that digitization and reforms of the country's identity system would solve some of the burning political and governance issues.

Implementing the UPR in conjunction with biometric registration helped mitigate the lack of public trust in the accuracy of voter lists and relax the country's political landscape. Since the population register was established and successfully trialled during the 2015 parliamentary elections, its value has been further recognized. It has also been linked to a wide range of other government functional systems that benefit from access to up-to-date identity data. As a result, these functional systems no longer need to run expensive operations to ensure that their beneficiaries' identity data is always current.

Reforms to civil registration and identity management systems were designed knowing that the value of the information in the population register and the overall system depends on the system's ability to provide reliable, up-to-date identity and place of residence information. Maintaining a rate of high vital event registration, digitizing vital events records, and digitally aligning this information with the identity management system within the population register all contributed to keeping identity data current.

Kyrgyzstan's experience with introducing a digitized population register shows that setting up population registration requires interim and creative solutions. The initial data in the population register was collected in less than a year through mass enrollment of biometric personal information. This enrollment also allowed authorities to digitize all identity information in the population register, as a one-time only exercise. From that point onwards, identity information can updated by registering new identity information as a vital event in the civil register.

Having a reliable source of identity data has made it easier to introduce a digital interoperability data layer between government ICT systems. It has also provided a significant boost to the overall digitization of Kyrgyzstan's governance system.

Endnotes

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NAMIBIA

CASE STUDY 4

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Acronyms

eGSAP	e-Government Strategic Action Plan for the Public Service of Namibia
ICT	Information and Communications Technology
ID	Identity document
MHAI	Ministry of Home Affairs and Immigration
NIDS	Namibia Inter-censal Demographic Survey
NPRS	National Population Registration System
SWA ID	South West Africa Identity Document
UN	United Nations
UIN	Unique Identification Number

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Executive summary

Namibia has a fully integrated civil registration and identity management system to register, process, and update the identity information of citizens, permanent residents, and refugees. Centralized processing of registered vital events has enabled all relevant identity data to be compiled in a single unified database: the National Population Registration System (NPRS). The NPRS was created by combining various databases that held different types of personal information linked by a unique identification number (UIN). Registered vital events data form the core of this database. As a result, the civil register is the most important (if not the only) provider of identity information for other processes, such as issuing identification credentials.

Namibia faces some challenges to ensure that marriage and divorce registration is complete,[1] but major progress has been made: birth and death registration rates are high. This progress was achieved by ensuring birth and death registration became a key prerequisite for offering people social grants. This allowed Namibian authorities to resolve major issues on the demand side of the registration process.

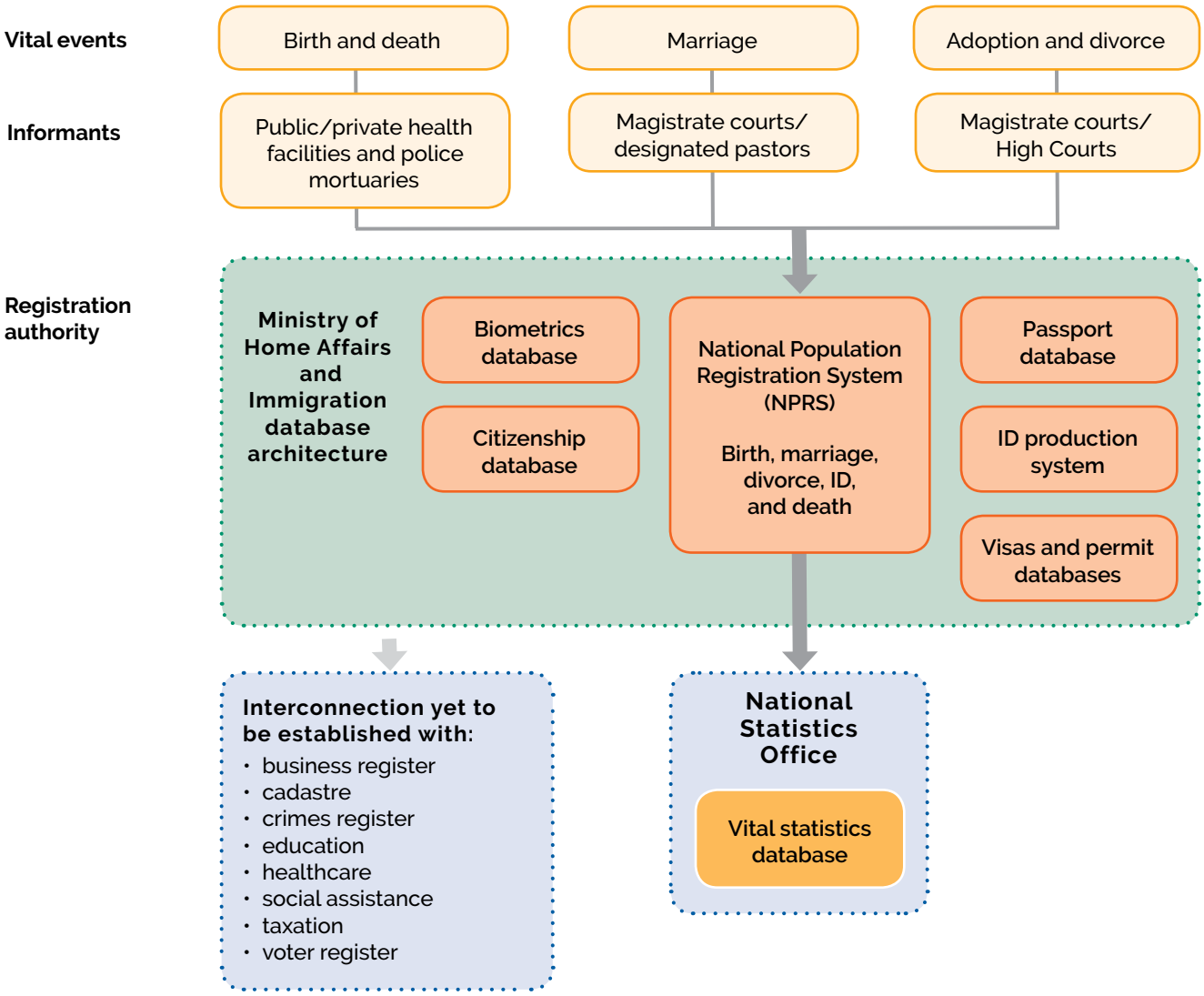

Figure 4.1: Namibia's identity system.

Source: Zoran Đoković

Determining identity data and registering it has major ramifications for an individual's citizenship in Namibia. The registration authority must decide carefully when determining legal identity. Also, providing financial benefits when people register vital events creates complex challenges: fraud prevention measures must be in place. Namibia addressed these challenges by digitizing civil registration business processes and setting up a database architecture that connects different databases. This ensures that they all use the same identity data stored in the civil register. The NPRS consists of all civil registers and ID registers on one profile, and includes information on registered place of residence and issued national identity cards.

Births and deaths are registered using notifications from the innovative e-birth and e-death notification platforms hosted at health facilities, police mortuaries, and civil registration offices. These platforms are linked to the National Population Registration System (NPRS). Birth and death notifications are used to ensure correct identity data from health and police authorities. The notification is the first step in the creation of a vital event record. The NPRS is the key building block of the interoperability framework. It uses the National Data Exchange Service Bus interoperability data layer, which allows it to link the population register with functional registers that the government and the private sector run. This makes it easier to share data and verify identity data. Linking other registers to the population register is underway. While there are no legal obstacles to sharing identity data with other government authorities, laws are in the works to improve the regulatory framework for data sharing. This includes legislation on privacy and data protection, electronic transactions, and the use of digitized identity tokens, such as signatures.

Summary of good practices

Namibia has a sound, nation-wide administrative and decentralized institutional framework in place in regional offices, health facilities, magistrate courts, and police offices. This framework brings services to the people, enabling efficient civil registrations and identity card enrollment. It is also behind the rollout of the country's e-birth and e-death notification systems.

Namibia's civil registration and identity system is further reinforced with strong government leadership on the value of strong systems. This led to the country building a homegrown national population register with internal resources.

The country has achieved improved customer service and efficient service delivery as a result of restructuring its identity management business processes. This has been facilitated by the adoption and implementation of the Ministry of Home Affairs and Immigration (MHAI) Turnaround Strategy in 2015. The NPRS is a solid infrastructure ready to take on linkages with functional registers as required, both within government and with registers in the private sector.

4.1 Introduction

General Information

Country name	Namibia
Surface	825,615 km²
Geographic location	Southern Africa: it borders the Atlantic Ocean to the west, South Africa to the south, Botswana to the east, and Zambia and Angola to the north.
Total population	2,324,388 (Namibia Inter-censal Demographic Survey [NIDS] 2016)
Share of urban population	1.1 million (48%)
Official language	English
Civil registration and identity management agency	Ministry of Home Affairs and Immigration (MHAI)
Birth registration rate (under 5 years)	76.9% (NIDS 2016)
Death registration rate	93.5% (NIDS 2016)
ID coverage	87.8% (NIDS 2016)

Table 4.1: Namibia country information.

The Namibian Constitution provides for an election of the president as head of state, with a term of office of five years. The Namibian Parliament has two houses: the National Assembly and the National Council. The basis of the Namibian economy is mining for uranium, gold, silver, and base metals, as well as agriculture and tourism. Namibia is a member state of the United Nations (UN), the African Union (AU), the Southern African Development Community (SADC), and the Commonwealth of Nations. The currency is the Namibian dollar while the South African rand is also accepted as legal tender.

Figure 4.2: Geographical map of Namibia.

Disclaimer: The boundaries used on this map do not imply official endorsement or acceptance by the United Nations.

Historical context

After gaining political independence from South Africa on 21 March 1990, the Republic of Namibia embarked on a journey to design its path to deliver socio-economic development to its citizens. Key to this journey was setting up human capital, institutional infrastructure, and legal frameworks to drive its development agenda.

The Ministry of Home Affairs and Immigration (MHAI) was created to deliver civil registration and identity management functions. Six years after independence, Parliament adopted the *Identification Act 21 of 1996*. It was carefully crafted to ensure harmony with the existing civil registration law, the *Births, Marriages and Deaths Registration Act 81* of 1963. The *Identification Act* repealed and replaced the *Identity Documents in South West Africa Act (1970)*, the *Identification of Persons Act (1979)*, and the *Identification of Persons Amendment Act (1980)*. However, any identity documents issued under these acts remained in force.

KEY DATES

1963	*Births, Marriages and Deaths Registration Act*
1979	*Identification of Persons Act* – issuing of the first IDs for all persons permanently residing in the territory of South West Africa, today's Namibia
1990	Independence
1993	The government launches nation-wide mobile campaigns to register all citizens with birth certificates
1996	*Identification Act*
2000	The government designs and develops its own National Population Registration System (NPRS)
2010	An e-governance policy is launched, and the automation of historical birth records begins
2011	The birth registration module of NPRS is designed and piloted in the Khomas Region
2012/ 2013	The death module of NPRS is designed and deployed The birth registration module is deployed nation-wide
2014	The marriage module of NPRS is designed and deployed 18-month Turnaround Project begins
2017	Piloting and deployment of e-birth notification system
2018	Piloting and deployment of e-death notification system

Figure 4.3: Timeline of civil registration and identification in Namibia.

From the start, civil registration and legal identity were of key importance. Namibia's vision was to integrate civil registration within identity management because of the mutual benefits of the two. In 2000, the Office of the Prime Minister, working closely with the MHAI, led a bold move to design, develop, and build the locally grown National Population Registration System (NPRS) using internal resources.

- At first, it processed only information relating to the issuing of ID cards.
- The civil registration system (births, adoptions, marriages, divorces, and deaths) was built on the identity management platform step by step from 2010 to 2014. It became a key part of the NPRS.
- In 2015, the track-and-trace system of IDs was added.
- From 2016 to 2018, the e-birth and e-death notification components were developed and launched. This ensured that public and private health facilities across the country – as well as police mortuaries, which are responsible for the notification of unnatural deaths and deaths occurring outside of health facilities – do all birth and death notifications electronically in a timely way in the NPRS.

This report presents the results of integrating identity management with functional registers, which contributes to achieving the UN Sustainable Development Goals – in particular, goal 16.9. It also helps create the potential to generate accurate vital statistics from civil registration records.

4.2 Legal and institutional arrangements

Legal framework

In Namibia, civil registration and identification legislation is found in various laws, including:

- Article 15 of the Constitution of the Republic of Namibia, on the right to a name from birth as well as the right to acquire nationality;
- the *Births, Marriages and Deaths Registration Act 81 of 1963*;
- the *Identification Act 21 of 1996*;
- the *Marriage Act 25 of 1961* (amended in 1987);
- the *Aliens Act 1 of 1937*, which covers change of surname; and
- UN Convention on the Rights of the Child, which Namibia adopted in 1990.

The purpose of the *Identification Act 21 of 1996* is to provide for the compiling and maintaining of a population register for Namibia to issue identity documents to persons who are in the population register, and for related matters.[2]

As noted above, the *Identification Act 21 of 1996* repealed and replaced previous legislation. However, any identity documents issued under these acts remain in force. The SWA ID documents were issued to all citizens and persons residing permanently in today's Namibia from 1979 to 1990. Before independence, not all population groups had to register births: the SWA ID was the first and only legal document for most of the black population at independence. The Namibian government started a campaign to phase out the SWA ID in 2016, but this has not happened yet. There are legal challenges related to the status of foreigners who were issued SWA IDs but do not qualify for Namibian citizenship and are therefore not eligible for the Namibia identity

document. According to the Namibia Inter-censal Demographic Survey 2016, 0.8% of the population above 16 years still had a SWA ID in November 2016; many of them are over the age of 85.[3]

Namibia has no comprehensive legislation on public information, electronic transactions, or data protection and privacy to allow for controlled digital data sharing. However, there are some provisions for data protection and privacy in other acts, such as the *Identification Act 21 of 1996*. Section 14(1) provides for secrecy of information found in the population register. However, a sub-section of the same Act gives the Minister the power to share information from the population register with any Ministry, regional council local authority, statutory institution, or body established by or under any law for any purpose of that Ministry, council, authority, institution, or body. The section does not allow for data sharing with organizations outside the government sector. Also, the section is not comprehensive enough when it comes to prohibiting the disclosure or misuse of information about data subjects by institutions, authorities, or bodies with their third parties. By the time of writing this study, comprehensive data protection and privacy legislation was being developed. Respondents from the MHAI said that, as of now, the government may share data internally with its agencies, but may wait for the necessary laws to be enacted to connect the functional registers outside government to the National Population Registration System (NPRS). The new legislation aims to bring the current legislation under one law. This would reflect the design structure of the current civil registration system, including the e-birth and e-death notifications, as well as the NPRS.

Institutional arrangements

The Department of Civil Registration, which sits within the Ministry of Home Affairs and Immigration (MHAI), has two directorates:

- The Directorate of National Registration is the regional arm. It is responsible for registering and issuing birth and death records, and enrolling IDs.
- The National Population Register, Identification and Production is broadly responsible for producing IDs, amending birth records, and registering and amending marriage records that are submitted by the Magistrate Court and designated pastors.

Good practice: Institutional arrangements allow for harmonized leadership within the MHAI

The MHAI has a network of 55 offices across the country:

- 14 regional offices;
- 23 hospital-based facilities; and
- 18 sub-regional offices, of which 9 offer ID enrollment.

The Ministry still works with a few Magistrate Courts on the registration of births and deaths. However, over the past 15 years, the Ministry has opened more offices and taken over this responsibility.

The hospital-based offices were opened from 2008 to 2012 to make it easier for people to register births in a timely way. The Department regularly runs outreach programs to connect with hard-to-reach communities. It often works with social protection and health authorities on these programs.

Children born to Namibians outside of Namibia are not issued birth certificates. Those who meet the requirements in article 4(1) of the Constitution must apply for citizenship by descent.[4]

4.3 Civil registration

Birth registration

Birth registration was previously done in South West Africa in terms of the *Births, Marriages and Deaths Registration Act 81 of 1963*. The Act is still in force in Namibia today. Sections 4 and 5 provide for mandatory notification and registration of births in legally prescribed timeframes and for the issuing of a birth certificate free of charge. Birth registration is done at the Ministry of Home Affairs and Immigration (MHAI) offices across the country in regions, constituencies, and hospitals. In 2016, birth registration levels were 87.8%.[5]

Good practice: An innovative e-birth notifications platform at health facilities to validate identity in real time

The e-birth notification system that nurses use notifies the National Population Registration System (NPRS) of the birth in real time. This makes it easier to register births in the legally prescribed timeframes. Birth notification is linked with the NPRS through a number that is generated during the birth notification: this is treated as a unique identification number (UIN) in the NPRS. This approach integrates the e-birth notification system and the birth registration module in the NPRS. The UIN connects all the modules in the NPRS (births, identity, marriages/divorces, deaths). All health personnel and registrars are issued the individual user's name and password and are given rights that are in keeping with their responsibilities.

The e-birth notification platform was designed to allow health workers to validate the mother's identity against the NPRS before a birth takes place.

- The data is collected when a pregnant woman is admitted into the health facility. After the birth, the mother who has a newborn child leaves the hospital only after all the child's identity information has been entered into the e-birth notification system.
- The mother or both parents must return to the birth registration office at the health facility to add any missing information about the child's identity, such as the child's name, before the registration is completed. In this second step, which is completed at an MHAI office, an important set of verifications is done. These affect the relationship between parents, paternity, and, more importantly, the child's citizenship. According to Namibian law, a father must declare paternity in front of a registrar or in writing. This step forms part of the legal registration.

The NPRS ensures that the same event cannot be registered more than once. This real-time connection also allows the operators of the system to verify that the identification credentials parents present are authentic. As well as the already mentioned ID documents of the parent(s), a marriage certificate is required, and/or an affidavit giving parental consent for each parent not present. Resident non-citizens must present their immigration status documents and their passport.

If health personnel cannot validate that a mother has given birth to a child, the parents must go to the MHAI regional or sub-regional office. Sub-regional offices are only allowed to register children under the age of 5. If a notification from the health facility is not available, the registrars will consider other documents, such as the baptism card, first school reports, or a statement made under oath. The workstations used to enter registered information electronically, as in the case of the e-notification system, are permanently linked with the NPRS. This allows for real-time data communication and a range of electronic validations that are used to prevent fraud.

Demand for the birth registration service has been created by making a birth certificate a requirement or a source document for getting identity documents, passports, social services, and some educational services. This has made birth registration attractive and valuable for people. Other incentives include child maintenance and orphan and vulnerable grants under the Ministry of Gender Equality and Child Welfare.

Although adoptions fall under the children's court (Office of the Judiciary), the *Child Care and Protection Act 3 of 2015* makes it mandatory for the MHAI to note the adoption. The clerk of the children's court is under a legal obligation to transmit adoption records to the MHAI within days of the adoption order.

Death registration process and practice, including cause of death

Mandatory death registration is done under the terms of the *Births, Marriages and Deaths Registration Act 81 of 1963*: a death certificate is issued by registrars or assistant registrars. The particulars indicated on a death certificate are

- name;
- surname;
- sex;
- ID number of the deceased;
- date of birth;
- marital status;
- date and place of death;
- cause of death;
- registrar's signature;
- place and date of certificate issue; and
- entry number.

An online death notification system that uses the same platform as the e-birth notification system is directly linked with the NPRS. This extends the death registration process to the Ministry of Health and Social Services and to mortuaries: it is the first official point of contact with the deceased to electronically verify his or her identity, classify the cause of death, and notify the MHAI electronically of the death.

Good practice: e-Death notification system leading to real-time information on deaths and cause of death

The introduction of the e-death notification system has also helped to make it more efficient to ensure up-to-date identity information in the NPRS. Also, the Statistics Namibia Population System gets immediate or real-time updates on death and cause of death from the NPRS. The e-notification registration is electronically linked to the population register through a unique death record number. Once a death is registered, the status of an individual changes from "live" to "deceased": identity and all other records in the population register for the person remain inactive and archived. The identity of the deceased is validated and populated directly from the NPRS.

The relatively high level of death registration, 93.5%,[6] is due to the many incentives attached to it. These include the financial benefit of N$1,500 (US$104) for the death of a pensioner and insurance that covers a death benefit. Also, the MHAI or Police Service requires a death certificate to issue a burial permit when a person dies of an infectious disease. In a renewed effort to ensure that all deaths go through the notification process and are registered, the police attend to all deaths that happen at home and transport the deceased to the nearest mortuary.

Marriage registration

Civil marriages are solemnized under the Marriage Act 25 of 1961 and registered under the *Births, Marriages and Deaths Registration Act 81 of 1963*. Marriages can only be solemnized by marriage officers appointed by the Minister of Home Affairs and Immigration: these are magistrates acting ex officio and some ministers of religion (mostly pastors). Registration of civil law marriage is integrated with the population register and done by the MHAI; the *Marriage Act 25 of 1961* is only applicable to civil marriages and does not cover customary marriages (marriages performed under customary law). According to the Namibia Inter-censal Demographic Survey 2016 Report,

- 5.9% of the population aged 15 years and over are married under customary law;
- 16.4% are married with a certificate; and
- 63.5% have never been married.

Divorce registration

Divorce under civil law is only granted by the High Court. There is no legal requirement on the courts to send the divorce record to the MHAI for subsequent registration. However, there is an agreement that all divorce orders should be forwarded on a regular basis to be captured in the marriage and divorce module of the NPRS. In the same way, the Ministry does not register customary law divorce.

The legal framework is under review to redress identified legal challenges when it comes to registering customary marriages and divorces as well as sharing these records to make it easier to integrate the divorce module with the NPRS.

Digitization of the civil registration system

With the NPRS, identity data had to be in digital format, which historically was not the case. To address the lack of digital data before 2010, the MHAI began to digitize paper civil registration records from the 1980s to 2012. The paper archive of some 4.5 million birth records has been digitized using M-files records management software. These birth records are still kept in a dedicated M-files database: they are added to the NPRS only after a person applies for a duplicate or an amendment and after more verifications are done.

The M-files database is designed to store a large number of scanned documents in a single database. The information in the database is organized using tags that link to a specific scanned document. During the scanning process, each record is tagged with a critical set of identity and vital event information that corresponds to the information on the scanned paper. Tags are kept in a separate searchable database that links to individual scanned records. The marriage and death records were scanned and captured directly in the NPRS. Birth records could not be uploaded to the new digitized NPRS because the birth records and ID records did not have a unique identifier.

Vital statistics

The MHAI has worked closely with the Namibia Statistics Agency since 2014 to strengthen the civil registration and vital statistics system. In 2014, this culminated in the drafting of a five-year civil registration and vital statistics strategic plan.

From 2015 to 2016, the Namibia Statistics Agency, working with the MHAI and the Office of the Prime Minister, began producing a vital statistics report from administrative records of the NPRS. The report aimed to identify challenges in the data set. New edit controls were later developed to improve the quality of the data. The same organizations have developed the ability to generate vital statistics from civil registration records by linking the NPRS to the Statistics Namibia Population System. The first vital statistics report, for the year 2017, is being developed and is undergoing quality assurance. Demographic and socio-economic information will soon be produced at disaggregate levels.

4.4 National Population Registration System

Namibia has a comprehensive and interoperable National Population Registration System (NPRS) that integrates the civil registration and the identity management system. The register was created in keeping with section 2 of the *Identification Act 21 of 1996*, which provides for the compiling and maintaining of a population register for Namibia, which is to contain citizens and permanent residents.

Section 3 of the Act lists the information to be recorded in the NPRS:

- Birth;
- Citizenship status and/or permanent residence;
- Marital status; and
- Identity document information and biometric data, such as photograph, fingerprints and palm prints, live status, departure dates from Namibia, revocation of identity cards, and any other information the Minister may prescribe by notice in the Government Gazette, including information about conditions, exceptions, or exemptions he may determine.

The birth, ID, marriage, divorce, and death records in the NPRS are interlinked with children's and parent(s)' records. Spouses' records are linked to one another. This means that marital status is automatically updated in the event of divorce or death of one spouse. This approach has also built a family tree over time.

These linkages may prevent forgery and fraudulent transactions related to personal identity and the delivery of public and private services. This protection increases the integrity of the data.

The NPRS was designed to ensure that the system addresses registration needs on-the-ground at all times and produces relevant data for statistical purposes. The Office of the Prime Minister is responsible for e-government solutions, including developing and maintaining the NPRS.

The NPRS is extensively built on the principles recommended by the UN Statistics Division, such as permanence and continuity. Enrollment in the NPRS covers the entire population: citizens, permanent residents, and refugees. The NPRS can create a unique identity once and can enable multiple uses of the one unique identity created.

Unique identification number

An identity document with an assigned 11-digit unique identification number (UIN) is mandatory when a person turns 16 under section 5(1) of the *Identification Act 21 of 1996*. The format of the UIN is a logical construct based on date of birth. The UIN is linked to the birth record number, which is manually generated based on the area where the person was born and the year the person was registered. This represents an organic link between birth registration, identity enrollment, and the population register: the result is an integrated approach to identity management. It ensures the integrity of both the birth register and the population register. This organic link improves the integrity of functional registers connected to the population register. Data is verified against the population register through the unique birth entry number.

4.5 Identity management

Before independence, the government issued an identity card for all persons aged 16 and over who were permanent residents – with or without a permit – in South West Africa. These are still valid legal documents, and a few cards remain in circulation. About 600,000 cards were issued from 1979 to 1990; all records are stored electronically in the National Population Registration System (NPRS). All cards have a six-character identifier starting with A, which was continued on the Namibian ID card. The ID number was 13 digits, including a radial code: this was removed when the Namibia card was introduced to reflect the country's new and unified reality.

Today, Namibia does identity management based on the *Identification Act 21 of 1996.* The Act combines identity management with a population register at a process level, treating identity management as a key part of the NPRS. As a result, identity cards are legally issued directly from a national population register. Unlike in other countries, there is no distinct identity management system. A person has one main profile in the NPRS with different modules – such as birth, marriage, identity, and death – organically connected to the NPRS with a unique and confidential reference number.

Namibia issues identity cards to both citizens and non-citizens who are permanent residents or refugees. The cards have different colour codes: blue for citizens, pink for permanent residents, and green for refugees. Namibian citizens living outside the country can apply for a duplicate card at any Namibian High Commission, embassy, or consulate. To apply for their first identity card, they must travel to Namibia.

When issuing identification credentials, it is crucial to ensure that

- the claimed identity is unique, real, and living;
- it is not a "ghost";
- it can be linked to a real person who is "live" and entitled to claim the identity;
- the identity is used often; and
- after the death is registered, the identity is finally closed.

In Namibia, the validation is done electronically in the NRPS and using fingerprints. Information in the NPRS must be trusted and dependable so that functional registers connected to the data avoid transferring risks, such as ghosts' beneficiaries and inaccurate statistics on payrolls and social safety programs. Determining identity data when issuing identification credentials relies mainly on identity data in the civil register. This is usually the case for most of the population.

In cases where there are no legal records to use as proof of identity, social footprints are used. Not all individuals had to bring proof of their age. Government officials estimated age based on personal physical appearance. Social footprints are used for late and delayed birth registrations to build evidence of identity: this avoids issuing dual identities and contaminating the NPRS data.

The Ministry of Home Affairs and Immigration (MHAI) receives a high number of requests for change of dates of births. In most instances, it is from persons whose dates of births do not correspond with the birth record and ID record, typically because they were issued a SWA ID before a birth certificate, or because they had multiple birth records. Social footprints are then used to determine the correct age of the person. Today, all persons who seek to convert their SWA ID to Namibian ID, or apply through the late registration procedure, have their fingerprints validated. Changing a date of birth on ID records jeopardizes the integrity of the NPRS and has various security risks as it undermines the ability of organizations to validate the identity of the person.

Death registration updates the status of individuals to ensure that they are living; this status is verified and updated by linked functional systems in real time. Also, the updating of live status to "dead" maintains data integrity and ensures that the NPRS is not bloated with "dead" status captured as "live," which would introduce risks to operational integrity.

Also, the *Identification Act 21 of 1996* provides for the collection of biometrics for identity enrollments at age 16. Biometrics underpin the uniqueness of identity and bind identities to specific identity holders. Proof of identity is key to maintaining a robust national population register and upholding data integrity. This also ensures that documents such as birth and death certificates, identity cards, and passport and travel documents are trustworthy. In turn, population data integrity means that linked functional registers are accurate.

Individuals who are enrolled in the NPRS and have a UIN, but request a duplicate identity card, must complete an application form and have their fingerprints taken for biometric verification purposes and to validate their identity. To ensure that information on national IDs in circulation is current, section 5 of the *Identification Act 21 of 1996* requires individuals to present documents with correct and up-to-date particulars when they apply. They can validate that the information is correct when they pick up their identity documents; corrections are made if needed. The law requires information in the NPRS to be updated when any changes occur, such as marriage, change of surname, signature, nationality, and change in particulars. "Live" status of individuals is updated in real time in the NPRS using the e-death notification module. This invalidates identity cards issued to persons who have died.

Authorities face challenges during the ID enrollment process when a person does not have a birth certificate or if the person presents fake or stolen documents. The risk is higher if it is not possible to verify the network where the person enrolls. To deal with stolen or fake documents, applications are screened before they are processed. Also, all identity data on the application is verified against the information in the NPRS. If an application is found to be fraudulent, it is treated as a criminal matter and is referred to the police for investigation and prosecution.

Good practice: A turnaround strategy for improved customer service and efficient service delivery

In 2014–2015, as part of the MHAI's decision to increase efficiency and reduce processing times, it announced its Turnaround Strategy. The Office of the Prime Minister and the MHAI developed and put in place a track-and-trace system to track the application from when it is submitted to when the card is issued to the right owner. This tool allows applications or cards to be traced at all times and ensures that all steps are followed diligently to avoid fraud.

Issuing passports and travel documents

Passports and travel documents are issued to Namibian citizens and to refugees from the passport system, which is based on personal data in the NPRS. The passport is issued based on proof of identity:

- a birth certificate for those under 16 years of age; and
- an identity card, in addition to a birth certificate, for those aged 16 and over.

Once a death registration of a passport holder is processed, the holder's status is automatically updated from "live" to "dead." This invalidates the passport record. The passport system is linked electronically to the NPRS, which shows how the birth, death, and identification modules are integrated with the passport system and the NPRS. There are two types of passports in circulation:

- the old manual passport; and
- the electronic chip passport, introduced in January 2018, which requires standardization.

4.6 Sharing information with other functional registers

Namibia has announced its plans for socio-economic development in several key national policy documents.

- ***Namibia Vision 2030*** envisions an "industrialized nation, developed by her people and enjoying peace, harmony and political stability," a "knowledge-based economy," and a "technology-driven nation" by 2030.[7]
- ***Namibia's 5th National Development Plan*** charts the way to achieving this national vision: it integrates and creates synergies among development facets and outlines key result areas to achieve. At the heart of the plan lies a key outcome: improved delivery of public services through the use of information and communications technology (ICT). The government has announced the e-Government project, which provides a platform for offering online government services 24/7 through a one-stop shop for citizens, businesses, government institutions, and visitors.[8]
- The ***e-Government Strategic Action Plan for the Public Service of Namibia (eGSAP)***, led by the Office of the Prime Minister, is being carried out to achieve these goals. The plan prioritizes a number of strategic areas. For the purposes of this paper, two are critical.

The first is "impact and visibility": this covers activities that affect citizens' lives and needs and that increase government visibility. Its aim is customer-focused governance. The second is "collaboration and networking": this champions an approach to service delivery where government agencies link up electronically to maximize shared resources and realize economies of scale. An interoperable National Population Registration System (NPRS), built on the foundation of an integrated identity management system, is a key part of achieving the national e-Government vision: "To be a Leading Networked Government, providing Client-centered, Transparent, Affordable and Efficient Services to all."[9]

According to these documents, in the future, NPRS data could be shared with other agencies if a legal framework is in place, such as data and privacy protection laws. In the case of Namibia, civil registration, personal identification, and the NPRS are integrated.

Good practice: A population register with solid interoperability infrastructure

The NPRS is designed so that in the future it will be connected to other government ICT platforms: it will host their functional registers and take advantage of the National Data Exchange Service Bus interoperability data layer model around the Estonian X-road solution. Although these functional registers are created to deliver on a specific mandate and purpose, one of their central functions is to effectively authenticate personal data and validate individual identities to deliver efficient and targeted service through links with the population register. The NPRS is ready to take on linkages with functional registers as needed.

Three systems are linked to the NPRS:

- Ministry of Health and Social Services e-birth and e-death notification system (NAMPOL);
- Passport system; and
- Statistics Namibia Population System.

The Statistics Namibia Population System has recently started to use vital events information from the NPRS to generate the 2015 and 2016 Vital Statistics Report (not published). Identity cards, passports, and travel documents are issued based on the authority of data in the NPRS. The NPRS can support the online services that are planned under the Namibia e-Government project. The NPRS has the capability and potential for further links with functional registers within government and in the private sector.

The electoral management system makes it possible for people to register and vote for local, regional, and national elections under the provisions of the *Electoral Act 5 of 2014*. This determines whether individuals are eligible to take part in the electoral process. Verifying personal data from the NPRS – name and surname, age, place of residence, citizenship, and live status to facilitate voter registration, and validating from the ID if a voter is who they say they are to be allowed to cast their vote – is critical. The Ministry has electronic data on deaths to validate the voter role, as required by the *Electoral Act 5 of 2014*.

Namibia also has a number of social safety net programs.

- With the *National Pensions Act 10 of 1992*, aged, blind, and disabled persons are paid national pensions.
- The *Child Care and Protection Act 3 of 2015* covers payment of child maintenance and child disability grants.

- The *Veterans Act 2 of 2008* caters to the registration of veterans of the liberation struggle and their dependents.
- To provide for maternity benefits, sick leave, and death benefits, the *Social Security Act 34 of 1994* provides for the registration of employers and employees and for the voluntary registration of individuals classified as self-employed. The Act also provides for the payment of benefits relating to maternity leave, sick leave, a death benefit fund, and the operation of a National Pension Fund and Medical Aid Scheme.

A critical bottom line is that all these functional registers require links to the NPRS to:

- authenticate particulars of their respective beneficiaries;
- determine if they are eligible for the benefits against set criteria, such as age and parental details, including live status;
- generate beneficiary statistics; and
- validate holders' identities against identity cards.

Many government programs also produce cards – such as a medical aid card, voter registration card, and driver's license – that must be generated on the authority of a trusted source of personal data, such as a population register. Otherwise, some government agencies build their own personal identity registers at a huge cost that duplicate the available data – even though these agencies are not policyholders of identity information and do not have the capability for real-time updates for changes such as "live" status, change of particulars, and marriage status. They are at risk of having varying and stale personal data, leading to fraud, forgery, and ghost beneficiaries.

Systems must be internally changed to accept different requests from the service bus. They must be wired into the business logic of the service bus, connecting them to the NPRS to enable data sharing. MHAI is finalizing memoranda of understanding with government ministries or agencies to link them to the NPRS. The first phase includes these four bodies:

- Ministry of Gender Equality and Child Welfare;
- Ministry of Finance;
- Namibia Electoral Commission; and
- Ministry of Poverty Eradication and Social Services.

Other ministries will follow in the next phases. System links within government are a work in progress.

A new law on data protection is in the pipeline to ensure further protection of the data shared between government agencies. The *Identification Act 21 of 1996* only allows for sharing of data from the NPRS, not between other government databases.

4.7 Benefits of strengthening the role of civil registration in identity management systems

Many benefits exist at an individual level, functional registers level, and country level when civil registration is integrated with the population register and legal identity. Integration has produced an interoperable national population registration system that can link to other systems. Also, through this integration, Namibia has developed the ability to uniquely identify individual citizens, permanent residents, and refugees.

- Registered individuals can exercise their right to birth registration, right to identity, and right to be counted and accounted for in government records.
- Secure documents are produced from the NPRS: birth and death certificates, identity cards, and passports and travel documents.
- Individuals can prove their identity through birth certificates and identity cards to get public and private services, access social protection programs, and exercise rights, such as the right to vote for those aged 18 and over.
- Through marriage certificates, individuals can prove marital status.
- Also, the country has adopted a holistic approach for improved service delivery across government agencies.

At a macro level, it is expected that vital statistics data will go a long way in helping the country to plan and design programs. While census data has been useful in supporting programming, it produced data that was spaced over time. It could not be used to monitor the changing character, size, and dynamics of the population between censuses.

The NPRS is a platform for launching online public services that will further improve the delivery of public services once they are fully implemented. Ultimately, the NPRS will become a central source for decision-making for governance, because it will collect accurate information on beneficiaries from the NPRS.

> *"Tighter cooperation with other government-operated functional registers will lead to better targeting of the correct beneficiaries for programs. It will also ensure that planning and designing of services is based on evidence. For example, one beneficiary, the Directorate of Child Welfare Services, provides maintenance grants to orphans, disabled children or children of disabled and pensioners, or of people serving more than six months in prison, and foster parenting grants for a child identified as being in need of care."*
>
> Director, Directorate of Child Welfare Services

Conclusion

Adopting ICT was key to building the National Population Registration System (NPRS). It was a major enabler in integrating and launching electronic birth and death notification platforms. If ICT is adopted correctly and applied to redesigned business processes, it delivers an overarching and interoperable population register that is an effective tool. It has high impact for governance and public administration, as in the case of Namibia.

Although a high number of newborn children are not registered in a timely manner, an almost complete birth registration is a critical base of the NPRS. Death registration allows for timely updates on the live status of individuals, which promotes good data integrity. Complete registration of marriages and divorces is critical for updating the marriage status of individuals and completing personal profiles for children born of the marriage.

Clear national policy direction and a national agenda, as in Namibia Vision 2030, the e-Government strategy, and the civil registration and identity legal framework, created strategic focus and alignment. This is a key enabler in delivering an overarching, integrated, and interoperable national population registration system. The Vision document underscores the importance of the country achieving universal birth and death registration to generate timely, complete, and accurate data to pave the way for national sustainable development. Universal birth and death registration give critical evidence of identity and closure for legal identity.

Another key lesson learned is that, as respondents pointed out, it is important to ensure that legal frameworks and technological advancements are kept in sync as much as possible, despite the fast pace of technology innovations. Fieldwork has revealed that many respondents in public and private institutions see the potential benefits of creating the NPRS and eventually linking it to other functional registers. The system is moving in that direction, but has not caught up yet, largely because technology has run ahead of the required legal framework to govern data sharing and authenticity of electronic datasets. However, the NPRS is technologically ready to support the implementation of e-government and to launch online services. ●

Endnotes

1 Divorce is 100% registered by the High Court, but not all of this data is in the National Population Registration System (NPRS). For marriages, the registration forms are often delayed by pastors and Magistrate Courts and at times not transmitted to the MHAI at all.

2 laws.parliament.na/cms_documents/identification-159d98f225.pdf

3 Namibia Inter-censal Demographic Survey (NIDS) 2016 Report, p. 55. cms.my.na/assets/documents/NIDS_2016.pdf

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THE NETHERLANDS

CASE STUDY 5

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Acronyms

API	Application Programming Interface
BRP	Personal Records Database (Basisregistratie Personen)
CRVS	Civil Registration and Vital Statistics
GSM	Global System for Mobile Communications
ID	Identity
ICT	Information and Communications Technology
IT	Information Technology
SMS	Short Message Service
UIN	Unique Identification Number

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Executive summary

The Netherlands' current identity system is based on sound registration processes used by municipal authorities to register vital events, address of residence of the population in their territory, and other personal information that facilitates communication between citizens and public authorities. The records in municipal population registers are synchronized daily with the central population register. The central population register provides up-to-date personal information to other public administrative authorities and service providers that connect to the register through dedicated application programming interfaces (APIs).

Appointed municipal authorities are responsible for the civil registration of vital events, which include births, deaths, marriages, civil partnerships, and paternity recognition. Vital events are registered and recorded in registration books in the municipality in which they occur.

Civil registration records are one of the fundamental building blocks of municipal population registers. Completing a birth registration provides legal cause to create a new record in the population register. This record is added to the population register of the municipality in which the person maintains permanent residence. All subsequent vital events (marriage, divorce, death, etc.) are registered in the municipal population register where the person lives. If a vital event occurs in a municipality other than the municipality of residence, it is recorded in the municipality in which it occurred. Using a dedicated online messaging platform, authorities in the registering municipality will communicate the event to the municipality of residence to be included in their register.

Each of the 355 municipal population registers in the Netherlands contains personal records, including legal identity information, address, and a range of other personal information, that is used to help determine eligibility for various services and rights. Records from the population register can be used as proof of legal identity and as breeder information to receive other legally accepted proofs of identity, such as national identity (ID) cards, passports, and driver's licenses.

The Dutch central population register, the Personal Records Database (BRP), mirrors all personal records from all municipal population registers. Each municipal population register connects to the central population register at least once a day to synchronize its most recent content. The central population register simplifies the process of sharing personal information with all public administrators and service providers within a regulated environment. Under the Ministry of the Interior and Kingdom Relations (Ministry of the Interior), the National Office for Identity Data is responsible for maintaining the central population register and resolving issues related to data quality, which also provides insight into the overall data sharing processes.

To avoid unnecessary bureaucracy, public administration and public service providers are not legally allowed to ask for personal information that citizens have previously registered in the population register. When citizens present their national identity card or unique identification number, all personal information that is required for the delivery of a specific service must be retrieved directly from the central population register. A Dutch citizen's unique identification number, also known as a Citizen Service Number, is generally the only information required to access personal information. Access to personal information in the population register is designed so that for each type of service, only a specific set of personal information is provided, which is determined to be proportional and sufficient to fulfil a specific service.

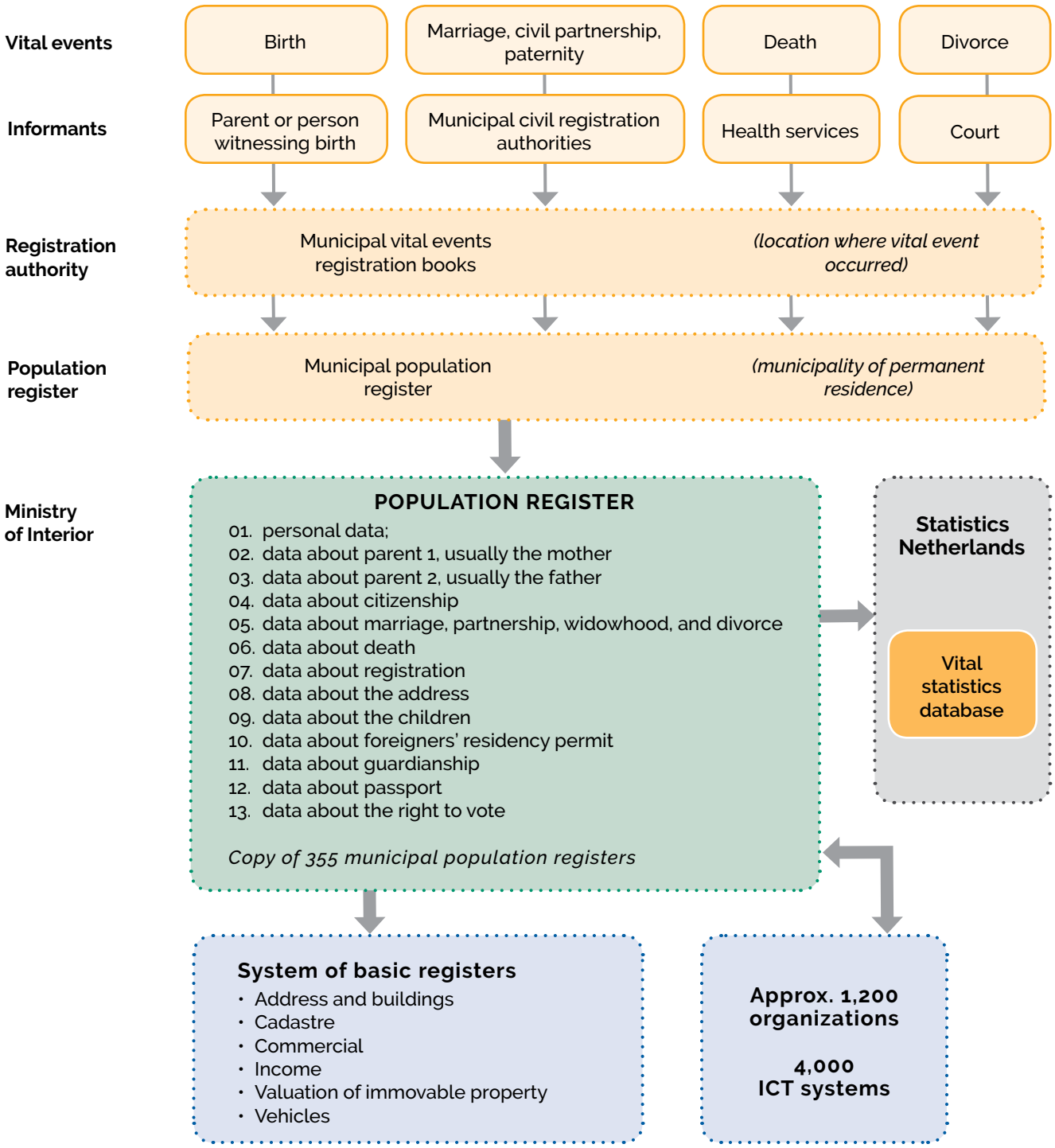

Figure 5.1: Overview of the Netherlands' civil registration, vital statistics, and identity system.

Source: Author

Summary of good practices

Original civil registration records are stored in dedicated vital event books and are referred to as the 'golden reserve of identity information.' When information on vital events is recorded in the population register, this digital record becomes sufficient proof of registered vital events and can be accessed online by all public administration authorities and service providers. Identity information stored in the population register reflects registered vital events and stands as the only legally valid source of identity data that can be used to personalize national ID cards, travel documents, or driver's licenses. Generally, a paper certificate is only required in exceptional circumstances, for which an official copy is provided. Original certificates remain with the municipality.

The primary role of the central register is to allow external users to access data contained in all municipal population registers from a single location. The National Office for Identity Data also controls the quality of registrations stored in municipal population registers to ensure the integrity of the registration process across all municipalities.

In 2018, there were some 135 million searches and 315 million exchanges of information to and from the population register. These figures illustrate the register's importance to the functioning of public administration and government services, particularly in key sectors, such as health and welfare, pension funds, public order and security, social security, statistics, and taxes and other fees.

5.1 Introduction

General information

Country name	The Netherlands
Surface	41,500 km^2
Geographic location	Western Europe; bordered by the North Sea to the north and west, Germany the east, and Belgium to the south. The country also shares maritime borders with France and the United Kingdom.
Total population	17.08 million (Eurostat 2017)
Share of urban population	91%
Official language	Dutch
Civil registration and identity management agency	Ministry of Justice (civil registration), Ministry of the Interior (identity management), municipalities
Birth registration rate	Complete
Death registration rate	Not available
Identification coverage	Not available

Table 5.1: Netherlands country information.

Figure 5.2: Netherlands geographical map.

Disclaimer: The boundaries used on this map do not imply official endorsement or acceptance by the United Nations.

With 17 million people and a population density of 488 people per km^2, the Netherlands is the most densely populated country of the European Union, and one of the mostly densely populated countries in the world. The total size of the Netherlands is 41,500 km^2. Although Amsterdam is the capital, the government resides in The Hague. The Netherlands is known as a politically stable country with sound financial policy. It has one of the most open economies in the world and is one of the world's top 10 biggest exporters.

The Dutch tradition of registering vital events stems from Napoleonic times. In addition to registering births, deaths, and other vital events, the Dutch introduced a population register on January 1, 1850 to record personal information about its citizens. This register records identity information through civil registration and collects information on residents' address of residence. Each municipality was required to create its own population register. Originally kept as books, population registers adopted a paper card system in 1938.

KEY DATES

1811 Napoleon introduced the civil registry in the Netherlands. The population register was introduced soon after.

1850 All municipalities were required to maintain a population register, ordered by address of the citizens.

1920 Family cards replaced address books.

1938 Personal cards replaced family cards.

1994 All municipalities were legally required to automate their population registers.

2007 Unique identification number (Citizen Service Number) introduced as part of the population register.

2014 The scope of population registers expanded by adding active enrollment of non-residents (i.e. Dutch citizens residing abroad).

Figure 5.3: A timeline of civil registration and identification.

Digitization of population registers began in the early 1990s. On October 1, 1994, municipal population registers began operating as digitized databases. Digitized registers have since undergone a number of technological and infrastructural changes. Most notably, these include the establishment of a central population register, the Personal Records Database (*Basisregistratie Personen* or BRP), administered by the Ministry of

the Interior. The BRP retains copies of all personal data collected by municipal population registers. It also provides access to personal data to all other public administrators. The BRP is part of the system of basic registers run by the Dutch government.

Other basic registers in the system cover firms and enterprises, buildings and addresses, and vehicles, among others. These interconnected registers aim to provide all governmental agencies in the Netherlands with up-to-date legal identity data and other personal information that define the relationship between the state and its residents as they relate to services and guaranteed rights. Population statistics that are compiled by Statistics Netherlands are based on digitized municipal population registers.

5.2 Legal and institutional arrangements

Legal framework

Under the Civil Code, vital event registration records are completed and stored in the municipality in which the vital events have occurred. There is a designated Registrar of Births, Deaths, Marriages and Registered Partnerships in each of the Netherlands' 355 municipalities. The Registrar is responsible for creating, processing, and retaining vital event registrations.

The *Basic Registration of Persons Act*[1] regulates entry and processing of personal information in population registers. It also defines the characteristics and components of the population register system. The details of the system are further prescribed in regulations at the ministerial level. These regulations guarantee that all municipalities apply the *Basic Registration of Persons Act* rules in a similar way.

In addition to registering residents' legal identity information and any legal identity data layers throughout a person's lifetime, the population register's key purpose is to keep up-to-date information on a person's address of residence. Dutch government officials rely on address of residence information to determine tax responsibilities and to provide health, education, social security, and welfare services.

The *Basic Registration of Persons Act* defines two types of population registers: one for residents and one for non-residents. Resident population registers are maintained in each municipality for people who live within its territory. Non-resident population registers are maintained by the Ministry of the Interior for Dutch citizens who live abroad and for non-Dutch citizens, such as migrant workers and students who reside in the Netherlands for a short period of time.

Institutional arrangements

Under the Civil Code, the Ministry of Justice and Security is responsible for coordinating and creating policies for the civil registration process in the Netherlands, while individual municipalities are responsible for registering vital events and maintaining records.

Municipalities also issue national ID cards and travel documents in coordination with the Ministry of the Interior. Applications for these documents are created by municipal authorities using identity data retrieved from the municipal population register and are forwarded with the person's photo to the Ministry of the Interior, where the documents are personalized.

Although the idea of establishing a central population register database has been debated since municipal registers became digitized, the keeping of population registers remains the responsibility of municipalities. Over time, all

municipal population register databases became interconnected using a national data transfer infrastructure. This means that when a person moves from one municipality to another, their digital personal record is transferred digitally to their new municipality and updated with the resident's new address. This is a straightforward activity that is carried out about 600,000 times a year.

All six Dutch Caribbean islands make use of the PIVA[2] system, or *Persoonsinformatievoorziening Nederlandse Antillen en Aruba*, the population information system for the [former] Netherlands Antilles and Aruba. The islands of Bonaire, Saba, and Sint Eustatius are recognized in the population registration system as specific Dutch municipalities. Their PIVAs are synchronized with the BRP to prevent duplicate enrollment. As independent countries within the Kingdom of the Netherlands, the islands of Aruba, Curacao, and Sint Maarten maintain their own population registers which are not connected to the BRP.

When people move away from a specific municipality to live abroad, their records are transferred to the non-residents' population register, which is operated by the Ministry of the Interior.

The *Basic Registration of Persons Act* appoints the Ministry of the Interior to maintain a central population register that aggregates and synchronizes all personal records daily with 355 municipal residents' population registers and the non-residents' population register. This process is designed to bridge any technical challenges that could arise from linking municipal population registers to public administration and service information and communications technology (ICT) platforms. The central population register facilitates access and information sharing with all other public administrators and service providers within a regulated environment. The National Office for Identity Data is responsible for overseeing the data sharing process and resolving any issues related to data quality. Table 5.2 details responsibilities and tasks.

Responsible	Task
Ministry of the Interior and Kingdom Relations	Policy and law, travel document regulations, population registry
National Office for Identity Data under the Ministry of the Interior and Kingdom Relations	Administrative office, travel document system management, population registry
Ministry of Foreign Affairs and embassies	Passports for Dutch citizens living abroad
Ministry of Justice and Security	Policy and law, regulations civil registry, registrations of foreigners without permits
Municipalities	Front office identification, travel documents, civil and population registry

Table 5.2: Civil registration and population registration institutional arrangements.

The main function of the central population register is to ensure that other public administrators and service providers can access and verify residents' personal information. This approach reflects the 'register once' principle, which relies on the premise that if the government possesses registered information, it should create an environment where this information can be retrieved any time the resident interacts with public authorities and service providers. The burden of providing identity information lies with authorities each time they interact with citizens. In direct interactions with citizens, authorities ask for a UIN (Citizen Service Number) and ID document to verify that the UIN belongs to person claiming it. All other personal information is retrieved directly from the population register.

5.3 Civil registration

Civil registration in the Netherlands is regulated by the Civil Code and is the responsibility of the municipal Registrar of Births, Deaths, Marriages and Registered Partnerships. Except in the case of death registration – which requires submission of a certificate from health authorities or from an undertaker – birth registration does not require presentation of a medical certificate and it is registered upon request. Marriages and registered partnerships are registered upon request, and paternity can be declared with municipal officials. Divorces are registered within a week following the court decision.

Every child born in the Netherlands must be registered at the municipal population affairs office within three days following birth. If parents miss this deadline, they may only be able to register the birth by court decision. The registration act (record) is created after one of the child's parents, or someone else who was present at birth, provides a parent identity document and a statement of the general practitioner or midwife with their request. The completed registration is recorded in a designated registration book.

If a birth or other vital event occurs in the same municipality where the person lives, the registration information is entered directly into the municipal population register to create a new personal record for the child. If the vital event occurs in a different municipality, the registration will be recorded in the registration book at the municipality in which the vital event took place. An electronic notification is sent to the person's municipality of residence, where a personal record is updated, or in the case of a newborn child, a personal record is created in the population register.

When parents register a birth, their identity information is automatically updated from the central population register and added to the personal record of their child.

The Registrar of Births, Deaths, Marriages, and Registered Partnerships is responsible for creating birth registration records, which are legal proof of a child's birth. The birth certificate is filed in the birth registration book and a copy is provided only if requested, for a fee. Population registration in the Netherlands has made online verification of identity information beneficial to the Dutch government and its citizens. Over time, the population register has eliminated the need for birth certificates from all government communications.

Although people may move several times throughout their lives, information on their place of birth or other vital events is permanently maintained in the personal file, making it possible to look up the original act in the municipality where it was originally drawn up.

Registration of marriages, registered partnerships, and divorces that take place within the Netherlands can involve authorities at the local, ministerial, or judicial level. Following the same approach, registration records remain with the authorities who registered the event. Information about the event is communicated to the person's municipality of residence to update that population register.

In addition to maintaining digital registration records in the population register and preserving original certificates in registration books, digitized registration certificates are also kept for backup purposes.

Good practice: Creating a 'golden reserve of identity information'

Original civil registration records are stored in dedicated vital events books and are referred to as the 'golden reserve of identity information.' When information from a vital event record is added to the population register, this digital record is sufficient proof of a registered vital event and can be accessed online by all public administration authorities and service providers. Generally, an official paper copy of a certificate is only required in exceptional circumstances. For instance, where people who register their vital events in the Netherlands and later move abroad, they may require a paper certificate as a proof of identity for authorities in the destination state. In this case, a person can request a paper certificate from the municipality in which the event was originally registered.

5.4 Population register

Originally, the goal of the population registration system was to ensure coverage of all citizens residing in the Netherlands. This meant that all newborns were registered in the system as long as their mother was a resident. In terms of residency status, the system was extended to include all visitors to the Netherlands who intend to live in the Netherlands for at least two-thirds of the next six months. Should residents decide to remain abroad for at least two-thirds of the next 12-month period, they must notify their municipality of residence and de-register from the population register. In these cases, their personal record is moved to the non-residents' register.

In 2014, the population registration system expanded to include non-residents. That means that any person who has a relationship with Dutch government agencies is registered in the population register, whether they are citizens or residents of the Netherlands or not, such as people who studied in the Netherlands or received social benefits. The Ministry of the Interior shares this data with other government agencies, such as the Dutch Tax and Customs Administration, Dutch Institute for Employee Benefits Schemes (UWV), Ministry of Foreign Affairs, and National Health Care Institute (Zorginstituut Nederland the Sociale Verzekeringsbank), which implements national insurance schemes in the Netherlands and ensure that child benefits, pensions, or survivor benefits are allocated correctly and on time.[3]

Municipal population registers

Each municipal population register contains personal records that include identity and address, as well as a range of other personal information to facilitate decision-making on eligibility to various services and rights. Personal records in a municipal population register consist of specific categories of personal information (Table 5.3).

01.	Personal data
02.	Data about parent 1, usually the mother
03.	Data about parent 2, usually the father
04.	Data about citizenship
05.	Data about marriage, partnership, widowhood, and divorce
06.	Data about death
07.	Data about registration
08.	Data about the address
09.	Data about the children
10.	Data about foreigners' residency permit
11.	Data about guardianship
12.	Data about passport
13.	Data about the right to vote

Table 5.3: Categories of personal data stored in the population register.

The population register database is designed to retain previous identity data as new information is updated (i.e. change of family name). The only exceptions to this rule are data categories 7, 12, and 13, where old data is replaced with new data when it is entered in the population register. Old data is not retained for the registration of a transgender person nor for a child who has been adopted. Upon personal request, data on a person's former gender or the biological parents of an adopted child are erased from the register.

While the citizen service number (CSN) is used in general interactions between citizens and government agencies to confirm identity data in the population register, the system also uses sectoral identifiers, or administrative personal identification numbers (AdmPINs). AdmPINs are only used within the electronic system to link different data categories pertaining to a specific person. In technical terms, the population register can store AdmPINs for related individuals (spouse, parents, and children) within the same record, allowing the system to link to current data on the UIN, name, sex, date of birth, country of birth, and place of birth of related individuals.

The information in the population register is either supplied by relevant authorities or concerned individuals. Local municipal registrars supply information on births, deaths, marriages, and registered partnerships. Similarly, courts supply information on divorces, and the Ministry of Justice provides information on changes in citizenship. Finally, concerned individuals are required to personally report to municipal authorities when moving residence within the country, immigrating or moving abroad, or to record any vital events that happened abroad. While residents generally report vital events in a timely manner, they may face a fine of 325 EUR if they deliberately fail to report a new vital event of residency status.

Personal Records Database

The Personal Records Database is the Dutch central population register. It is designed as a database that mirrors all personal records from 355 municipal population registers and the register of non-residents. Each municipal population register connects to the central population register at least once daily to synchronize its content with its municipal counterpart.

Good practice: Using a central population register as a single source of identity information

The primary role of the central register is to allow data users to access information in all municipal population registers from a single location. The National Office for Identity Data controls the quality of registrations stored in the municipal population register to ensure the integrity of the registration process across all municipal population registers. However, it has no authority to change information in the central or municipal registers.

The National Office for Identity Data defines the technical and software requirements for the implementation of municipal population registers. It monitors externally procured ICT solutions and ensures that they meet the necessary requirements and standards. The Office also defines standards and protocols for application programming interfaces to allow external users to access the central register.

While access to the central population register is limited to public authorities and services, each request for access is individually assessed and access is granted accordingly. This function reveals the full value of the population registration system. As of 2019, approximately 1,200 organizations operating within government structures benefit from access to personal data in the central population register. This further extends to approximately 4,000 individual ICT systems within these organizations. For instance, while the Notary Office appears as a single organization accessing personal data, in practice, there are 900 individual Notary ICT systems connected to the central population register via the National Notary Hub.

As residents become users of specific services, service providers have ongoing access to changes in relevant identity and address data that affect service delivery. This information is equally important to all authorities that grant access to specific rights and entitlements determined on the basis of residence or other personal information criteria.

External access to the central population register

1,200 organizations

Approx. **4,000** ICT systems

Figure 5.4: Number of external government data users with access to the central population register.

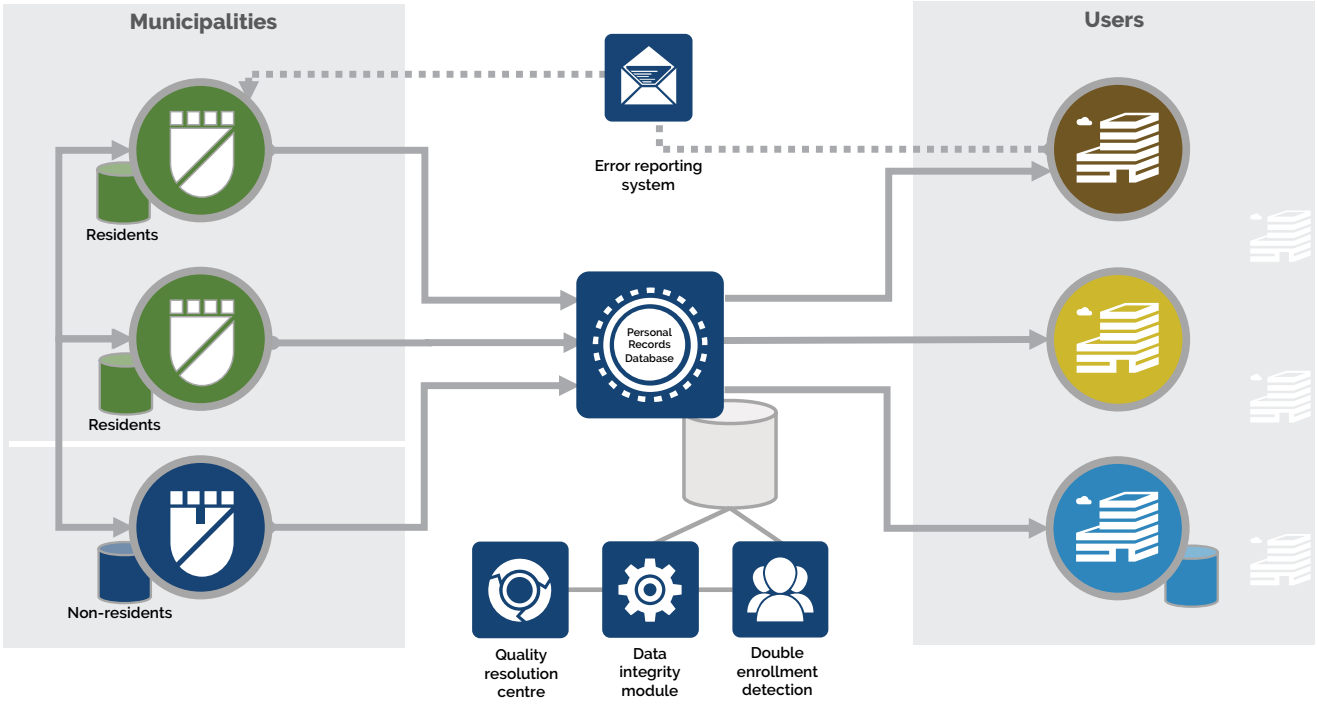

Figure 5.5: The flow of personal identity data in the Netherlands' identity system.

Source: National Office for Identity Data

The National Office for Identity Data defines the technical standards and protocols for data sharing with external users. Functional registers maintained by external users copy predefined sets of personal information from the central population register, either automatically as people become eligible, or as they apply for services. When a person is enrolled in a specific functional register, the system creates a flag in that person's record in the population register. This flag is used by the system to indicate that the institution that keeps information of that person in its functional register is "subscribed" to receive updates about changes in personal data copied in the functional register. As changes in personal information are communicated from the municipal population register to the central population register, these changes are shared with all subscribed organizations.

To ensure ongoing improvement in the population register, users of population register data also report any inconsistencies in the data that they originally received. For example, since birth registration is an entirely declarative process, parents could register a fictitious birth. Indeed, there have been instances where parents registered the birth of twins when they had only one child. Such fraud attempts are usually attempts to gain additional child benefits. The population registration system will record this information, which is then shared with health authorities who will arrange initial vaccination for the newborn within four days. If a child is not brought for vaccination and subsequent house visits confirm that the child does not exist, this information will be communicated to the municipality where the fictitious identity was registered. If confirmed, municipal authorities will deem the identity fictitious and annul the birth registration.

Another example of user feedback involves death reporting. Reflecting a death in the population register can be a challenge for people who move abroad. In these cases, when a death occurs, it is often reported to civil registration authorities in the destination country. Pension authorities require that their beneficiaries residing abroad report back regularly using a designated form to ensure they are still alive. If pension authorities determine that the person has died, the information is also communicated to the non-resident population register. This notification can be used as sufficient proof to mark a person as deceased.

If there is uncertainty about whether the person has moved from their reported address or resides at a different address, municipal authorities may conduct spot checks to determine whether allegations are justified.

The integrity of the population registration system is further verified through internal data quality checks:

- **The Data Integrity Module** contains a business rules engine with approximately 3,000 data integrity rules, which are run on a weekly basis to check the entire database. Any violations are reported to responsible municipalities.
- **The Quality Resolution Centre Module** is a web application for all municipalities that contains results from the Data Integrity Module, the questionnaire for yearly self-evaluation, and other quality control instruments.
- **The Double Enrollment Detection Module** inspects all new enrollments into the database to detect double enrollments using smart profiles: name changes, transliteration problems, etc. Results are reported to the responsible municipalities.

Citizen Service Number

A Citizen Service Number (or unique identification number, UIN) is assigned to each resident and non-resident when their personal record is created in the population register. This number is used by all public ICT systems to ensure fast and accurate identification of personal records in their functional register, or to retrieve updates from the central population register. Agencies that do not store personal information can use the UIN to directly access the population register and obtain legal identity data for the person.

When a person starts working, their employer usually only needs the employee's UIN to manage formalities with institutions like the tax administration and pension fund. The Dutch healthcare system also uses the UIN for their ICT systems, and as such, it may be required at a hospital, a pharmacy, or to apply for home care. Personal information required for any of these services is drawn directly from the central population register.

Generating a unique identification number (UIN)

The UIN is designed as a random number that can be mathematically verified as valid number, but does not contain personal information that can be attributed to the person. UINs are generated by the National Office for Identity Data and distributed to municipalities in batches of 500 UINs to be allocated locally.

Privacy and data protection framework

Privacy protection legislation provides general guidance on the conditions for sharing information from the central population register with other public administrators and service providers. Only services under government authority can legally benefit from access to the central population register. To gain access to specific personal information in the population register, the requesting authority must prove that their service is defined by relevant sectoral law and that the service requires the use of personal data. A dedicated review board set up by the National Office for Identity Data assesses the merits of each request and defines, in consultation with the requesting authority, the types of personal data that are required for service provision. Data can be shared by copying personal data into a service's designated functional register or by looking up the personal information directly in the population register when a request for service is made. Each decision to grant access to the population register for a specific purpose is published on the Ministry of the Interior's website.

Privacy legislation requires that the Ministry of the Interior logs each request for personal information made by external users and public authorities. Citizens have the right to access information on the agencies that have used their personal information, and for what purpose, within a specific timeframe.

According to privacy legislation, Dutch citizens have the right to

- inspect the data recorded about them;
- have data corrected, if incorrect; and
- know which organizations have used their data, when, and for what purpose.

Vital statistics

Following the established procedure for granting access to a specific set of personal data in the population register, Statistics Netherlands has been authorized to receive all data required to compile population statistics, including vital statistics, in line with the United Nations Department of Economic and Social Affairs (UN DESA), Eurostat, and Council of Europe requirements and standards. To compile vital statistics, Statistics Netherlands has acquired several types of authorizations that collect information by triggering the release of personal information, such as date of birth or date of death, to Statistics Netherlands when a new vital event is recorded. Data on marriages and divorces are obtained in a similar fashion.

Access to specific data is approved once it has been deemed necessary to produce specific statistical analysis and that the amount of data that is shared is consistent with the amount required. Data sharing with Statistics Netherlands is achieved by subscribing the agency to authorized data types. Registration of new information in the subscribed data type also triggers an electronic message communicating new information to Statistics Netherlands.

5.5 Identity management system

Municipal authorities are responsible for issuing legal identity credentials, such as national identity cards, passports, and driver's licenses. Biometric data, such as photos for national ID, passports, and driver's licenses, are stored in a separate database kept by the issuing agencies. However, all other personal information printed on these documents is drawn directly from the central population register.

When information is entered into a personal record in a municipal population register that is different from the information on identity credentials, or marks a person as deceased, that information is shared via the central population register. The information would generally originate when a person registers vital life events. This information is shared via the central population register to be marked as invalid with the database that issued the most recent identity credentials. The Ministry of the Interior maintains a separate database of stolen, lost, and invalidated ID credentials. The police and Border Control have full access to this database and can use mobile units to communicate with the central database via GSM mobile networks.

Public administrators and service providers primarily use national IDs for identification purposes and to collect personal data that they require directly from the population register.

Private service providers rely heavily on verification of legal identity information and the validity of issued identity credentials for their business processes, especially if they enter into contractual agreements with individuals. Commercial organizations can verify the authenticity of issued identity credentials and the validity of issued documents by accessing the database of identity credentials.

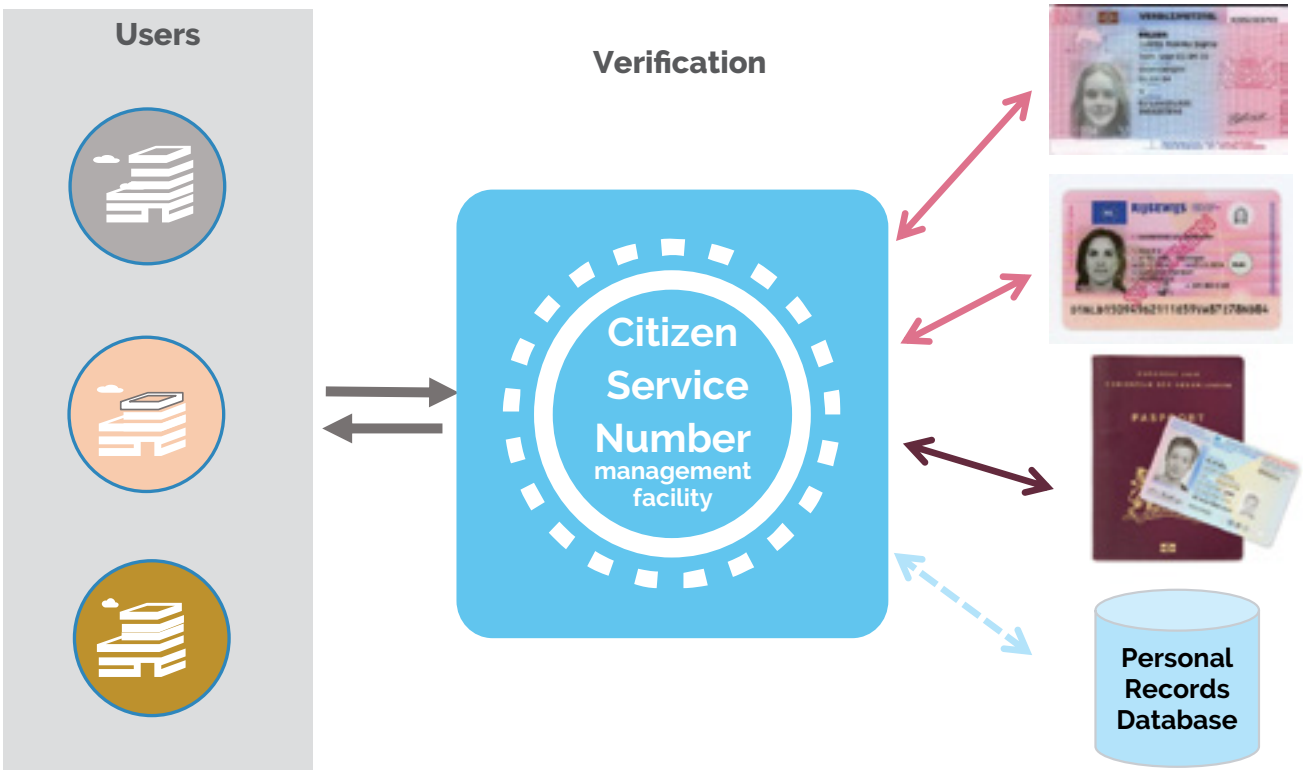

Figure 5.6: Process to verify the validity of identification credentials in databases of invalid identification credentials.

Source: National Office for Identity Data

However, access to personal information by commercial organizations is strictly limited. Their query in the database of invalid identity credentials will yield a response of "valid document" or "invalid document." This service is widely used by

- banks;
- insurance companies;
- medical organizations;
- mortgage lenders/credit companies;
- notaries;
- rental companies; and
- telecom companies.

Figures 5.7 and 5.8 summarize the most recently available data, which shows that the number of queries from commercial organizations reached 20.1 million in 2018. This represents a steady increase over 9.1 million queries in 2011. More importantly, Figure 5.7 demonstrates the number of valid or accurate ID documents in circulation. When a request for validation of presented of ID documents was made in 2018, the system flagged 130,000 invalid document responses – almost four times higher than in 2011.

With many services becoming digitized, the Ministry of the Interior has developed digital systems to identify people who apply for government services online.

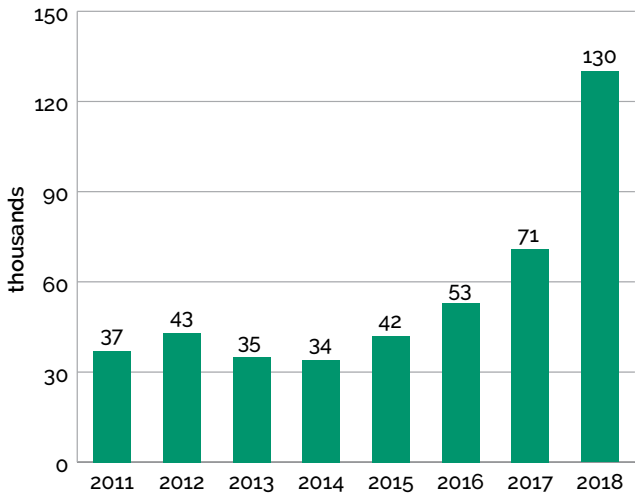

Figure 5.7: Number of requests for verification that returned an "invalid document" response.

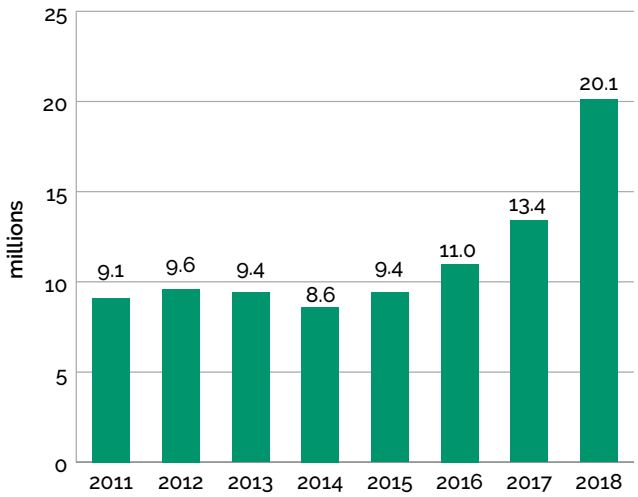

Figure 5.8: Number of requests for verification of identity credentials from commercial entities.

DigiID is a digital identity credential that has been used in the Netherlands since 2007. Its use has grown to mirror the increase in government services available online. DigiID is issued upon request to residents and non-residents who are enrolled in the population register. It consists of a username and a password, which is mailed in a sealed, non-transparent envelope to the resident's registered address. Non-residents can obtain a DigiID at the airport when visiting the Netherlands. Identification involves matching the authenticated username and password with up-to-date identity data and other personal data from the population register. Changes to identity information through civil registration do not require a new DigiID, as the population register always provides the most up-to-date personal information to authenticate DigiID credentials.

Over time, two-factor authentication was introduced using short message service (SMS), or texting. Currently, a system is being developed to allow for two-factor authentication using a mobile app.

DigiID by the numbers

305 million authentication requests were processed in 2017.

14 million residents and non-residents have a DigiID.

650 organizations accept DigiID as identification.

20 requests were made per person in 2017.

Figure 5.9: Statistics on the use of DigiID by citizens and external data users.

5.6 Sharing information with other functional registers

When legal identity data is recorded in the population register for a birth, this information is communicated to other stakeholders to trigger specific services, such as the newborn vaccination program. Upon receiving birth data from the population register, health authorities issue an invitation for vaccination within four days following the birth. The child's parents are notified at specific intervals for subsequent vaccinations.

Good practice: Legalizing the 'register once' principle

Throughout a person's lifetime, they will interact with the state administration more frequently, which increases the amount of personal data that is linked across several digitized registers. In the Netherlands, there are 10 separate, fundamental, and interconnected registers that operate on agreed system standards to ensure interoperability between them. The main purpose of the system of basic registers is to allow the Dutch government to collect data only once and retain it in one register. Each time a government agency requires information, they must retrieve it from the appropriate basic register. For example, if the Dutch Tax and Customs Administration needs someone's address, they are not permitted to ask the person for the information. They will instead collect it from the Personal Records Database (BRP). Legally, citizens must only provide data once, and all government agencies must use the same data.

Figure 5.10 below illustrates how personal information from the central population register is used as a source of personal data for other basic registers, linking directly to 6 out of 10 basic registers:[4]

- **Addresses and Buildings Key Register** contains municipal basic data on all addresses and buildings within the municipality. Kadaster – the Netherlands' Cadastre, Land Registry and Mapping Agency – manages the register and provides data to public offices, institutions, companies, and private citizens.
- **Income Register** contains the total income or taxable annual income of everybody who files an income tax return. Government organizations use the register to determine supplements, subsidies, or benefits.
- **Valuation of Immovable Property Register** consists of a range of data of immovable property that help establish the value of the property.
- **Commercial Register** contains information on all businesses and legal entities. All other economic players are also listed in this register, which guarantees legal security when doing business. All government agencies are required to use this register. For instance, a municipality will consult the commercial register when searching for company information.
- **Vehicles Register** lists data on vehicles, vehicle registration documents, and people to whom the vehicle registration document was assigned. The Netherlands Vehicle Authority provides this information to authorities, citizens, and businesses.
- **Cadastre Register** consists of the cadastral registration and the cadastral map. Cadastral data is used by many clients as the foundation for their own work processes.

Other basic registers, such as the Topography Register, the Large-Scale Topography Register, and the Subsurface Register, are not directly linked to the central population register.

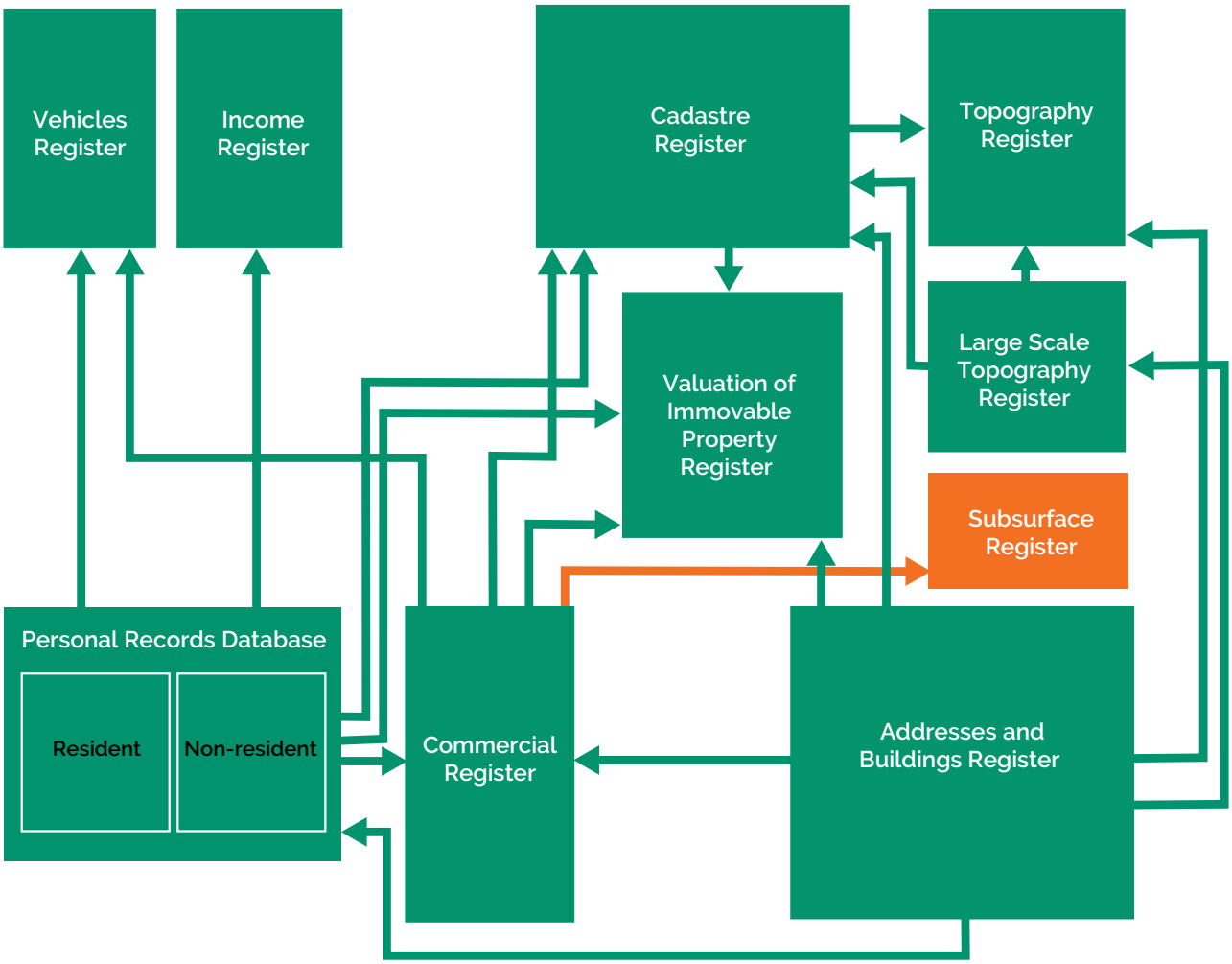

Figure 5.10: Ten basic registers operated by the Netherlands government and the direction of data sharing between individual registers.

Source: National Office for Identity Data

5.7 Benefits of strengthening the role of civil registration in the identity system

In the Netherlands, vital event registration is universal and takes place as vital events occur for everyone who resides in its territory. With population registers in use for almost two centuries, it has become the norm to obtain identity information from vital event registrations. Further, Dutch authorities continue to register additional personal information layers until a person dies and their personal record is permanently moved to the non-resident category and marked as deceased.

All communications between citizens and the state rely on this information, with administrative systems designed to draw from the population register. This process was effective when the population registration was entirely paper-based, and it remains reliable now that information is processed digitally. Digitization has reduced the importance of mass mailing as a means of communicating information to citizens. As a result, address information has become less important, although it is still extremely relevant in determining the value of state benefits that depend on the number and type of residents who live in a specific household.

Operating the Social Fund efficiently through a digitized population register

The Dutch Social Fund, which distributes 40 billion EUR in pension benefits and 3 billion EUR in child benefits each year, depends entirely on information from the population register. For instance, all residents qualify for a state pension when they reach age 65. Residents receive written notification six months in advance to let them know when their pension payments will start. Personal information, such as date of birth, allows the Fund to plan expenditures and enroll new beneficiaries. When existing pensioners report that they are moving abroad, their record is transferred to the non-residents' register, which triggers the Social Fund to transfer pensions to a designated account abroad. The Social Fund also combines data on parents' income, marriage status, and the number of residents at an address to determine the value of child benefits. All of this happens with very little intervention from citizens. On the operational side, digitizing population registration has allowed the Social Fund to cut its workforce by 50%, as most of the processes are automated. Social Fund officials estimate that digitizing the benefits process saves some 120 million EUR annually.

Good practice: Generating census data from the population register

The Netherlands is one of the countries in Europe that does not run a national census as a separate project with a massive budget. Instead, census data is produced directly from data in the population register and other digital registers.

Financial considerations

Under the law on central population register, the Ministry of the Interior and agencies that use data from the population register share the responsibility of governing its operation. This requirement is designed to ensure mutual understanding on how the population register should operate. In the event of a lack of agreement on specific points, the Ministry of the Interior is authorized to make a final decision.

The financial benefits to keeping a population register in the Netherlands are taken for granted, and long ago stopped being calculated. External users provide a portion of financing for population registration that is determined through the decision processes in the Consultative Council.

A Consultative Council is responsible for implementing this decision-making arrangement. This council includes six representatives from the Ministry of the Interior, three municipal representatives, three officials from municipal and non-municipal agencies that supply the Ministry with data about non-residents, and six representatives from agencies that use population data.

Good practice: Determining financial contributions by agencies to the BRP population register system

One of the most important tasks of the Consultative Council is to determine the amount of financial contributions required to support the operation of the central population register. Contributions cover operational and human resource costs required to maintain and operate the register. According to Dutch law, the amount of information that an agency acquires from the population register will determine its level of financial contribution. Contributions are directly proportional to the volume of information obtained from the central population register.

Statistics Netherlands falls under the sector named Statistics Netherlands and other agencies. Other members of this sector include the Netherlands' Cadastre, Land Registry and Mapping Agency; the 12 Netherlands provinces; Chamber of Commerce; and the Royal Dutch Association of Civil Law Notaries. Statistics Netherlands represents this sector in the Consultative Council.

Conclusion

The Netherlands' identity system demonstrates a deeply rooted understanding of how interactions between public authorities and citizens can be supported by a robust system that recognizes, registers, and manages identity information. It further illustrates how a government's overall efficiency depends on access to readily available, up-to-date identity information, including address of residence.

Registering identity and address of residence information in municipal population registers is a longstanding tradition in the Netherlands. While the system has remained fundamentally unchanged since its inception, it has gradually been upgraded to take advantage of new ICT technologies as they emerge.

Municipal population registers in the Netherlands have traditionally reflected a holistic approach to civil registration, vital statistics, and identity management. Each new layer of identity information from birth until death is recorded in the population register using information on registered vital events. This information is used as a source of identity data to issue ID documents and update identity data in other government functional systems.

The Netherlands' identity system is built around the 'register once' principle. In practice, this means that residents and non-resident citizens need to register new identity information only once. The system is designed to ensure that new identity-related information is made available to all government systems that require the information, which at present includes approximately 1,200 government organizations and 4,000 government ICT systems. The 'register once' principle is so critical to the functioning and efficiency of the system that legal provisions have been implemented to prohibit government authorities from seeking personal information data from citizens if that information has been previously registered.

Civil registration and vital statistics systems are fundamental to the Netherlands' identity ecosystem. Registered vital events are used in the digitized population register and later processed by other government systems. While civil registration paper records are still meticulously kept and preserved, they are used only as a 'golden reserve of identity information' for situations where identity information cannot be accessed digitally. ●

Endnotes

1 Wet basisregistratie personen (*Basic Registration of Persons Act*), Government of the Netherlands. wetten.overheid.nl/BWBR0033715/2019-02-03

2 Persoonsinformatievoorziening Nederlandse Antillen en Aruba (Personal information provision in the Netherlands Antilles and Aruba). rvig.nl/caribisch-gebied/persoonsinformatievoorziening-nederlandse-antillen-en-aruba-piva

3 Prins, K. Population register data, basis for the Netherlands' population statistics. Statistics Netherlands, 2016. cbs.nl/en-gb/background/2016/01/population-register-data-basis-for-the-netherlands-population-statistics

4 Digital Government. Government of the Netherlands. nldigitalgovernment.nl

PERU

CASE STUDY 6

Contents

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Acronyms

CLB	Certificate of live birth
CRVS	Civil registration and vital statistics
EsSalud	*Seguro Social de Salud* (social health insurance)
ID	Identity
OREC	*Oficina de Registros del Estado Civil* (Office of the Registries of the Civil State)
RENIEC	*Registro Nacional de Identificación y Estado Civil* (National Registry of Identity and Civil State)
UIN	Unique Identification Number

Acknowledgements

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Executive summary

After operating a disperse system of civil registration and an identification system closely tied to electoral purposes for more than a century, Peru established a single national agency (*entidad*) in charge of both functions in 1993. Against a backdrop of intense political violence, Peru's *Registro Nacional de Identificación y Estado Civil* (RENIEC), or National Registry of Identity and Civil State, was created under the Constitution to become the governing body on matters related to civil registration and identification.

Over the past 25 years, RENIEC has articulated a widely decentralized system, increasing the coverage of vital events registration, identifying citizens, and integrating civil registration and vital statistics (CRVS) and identity management systems. By establishing standard processes and guidelines, introducing digital technology, and digitizing civil registration and identification records, RENIEC has successfully built two main databases: the civil registration database and the identification register.

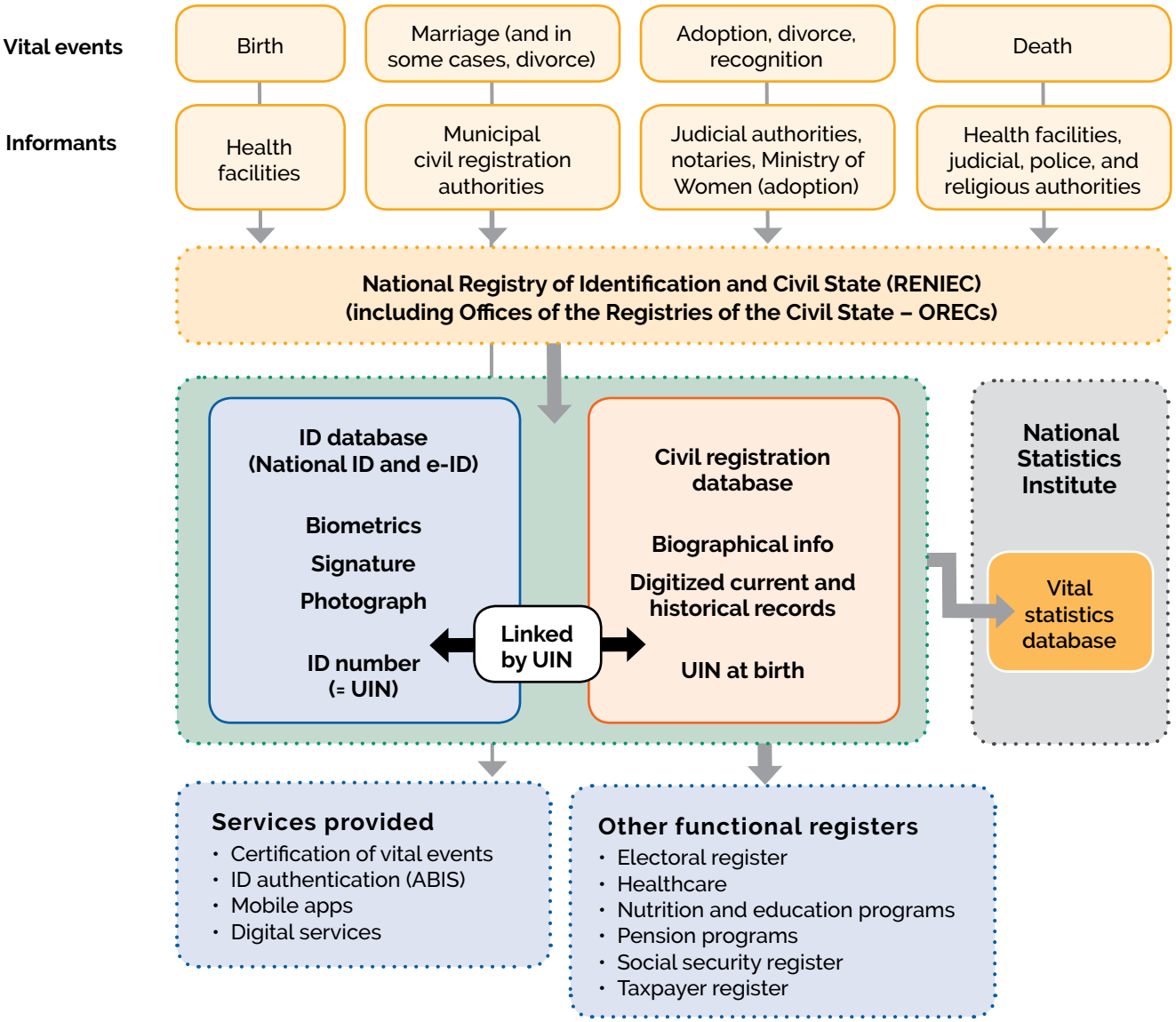

Figure 6.1: CRVS and identity management systems in Peru.

Throughout the process, RENIEC has increased collaboration between public and private organizations through the exchange of data, and has become Peru's primary resource for identity authentication. Information provided by RENIEC allows for more efficient and inclusive services since it helps to improve identification of beneficiaries and targeting of social benefits, reduce leakages, and eliminate duplicate and fraudulent registrations that result in undue payments from social programs.

The management of nutrition subsidies is one example of how civil registration information can significantly improve service provision and save time and money. RENIEC has been instrumental in guaranteeing that more newborns get nutrition support in time by reducing the application process from two months to 72 hours, and reaching 71% of beneficiaries within the first month, up from 36%.

Summary of good practices

RENIEC has worked to make civil registration the backbone of ID management, implementing many good practices that have strengthened the CRVS system and service provision:

- Constitutional independence and autonomy;
- Digitized records;
- Information exchange between public and private sectors;
- Integration strategies combined with information technology (IT); and
- Online services at health facilities for birth and death certification and registration.

To reach the most vulnerable segments of the population and close gaps in registration and identification, RENIEC has also introduced good practices to ensure that everyone is counted:

- Improved services for Indigenous communities;
- Inter-institutional alliances and cooperation; and
- Mobile registration units.

As a result, RENIEC has become Peru's most trusted institution. RENIEC's ability to provide reliable data, combined with its contribution to service provision efficiency and inclusivity, illustrates how integrating CRVS and identity management systems is fundamental to guaranteeing citizens' access to rights and implementing better policies.

6.1 Introduction

General information

Country name	Peru
Surface	1,285 million km^2
Geographic location	Andean region of South America; it borders Ecuador and Colombia to the north, Brazil to the east, Bolivia to the southeast, Chile to the south, and the Pacific Ocean to the west.
Total population	31,237,385 (2017 census)
Share of urban population	79.3%
Official language	Spanish, Quechua, Aymara, and all other Indigenous languages (estimated at 48 in total)
Civil registration and civil identification agency	RENIEC (National Registry of Identity and Civil State)
Birth registration rate	98.3% (RENIEC 2017, based on total estimated births by the National Statistics Institute)
Death registration rate	78.1% (RENIEC 2017, based on total estimated deaths by the National Statistics Institute)
Identification coverage	99.3% (RENIEC 2018)

Table 6.1: Peru country information.

Figure 6.2: Peru geographical map.

Disclaimer: The boundaries used on this map do not imply official endorsement or acceptance by the United Nations.

Historical context

Civil registration was instituted in Peru in 1852 with the first Civil Code, which created the *Registros del Estado Civil* (registries of the civil state), replacing parochial registry, where births, marriages, and deaths were registered through the Catholic church.

With the creation of municipalities in 1856, mayors became responsible for managing and maintaining civil registration records. The civil registration system was widely decentralized and heterogeneous, scattered across more than 2,500 offices, with no national agency acting as governing or regulatory body. To some extent, Peru's current civil registration system remains decentralized.

In contrast, identification has traditionally been tied to elections. In 1931, the *Registro Electoral del Perú* (Peruvian Electoral Registry)[1] issued the first identification (ID) credential for all Peruvian adult males, the only segment of the population that was eligible to vote. Until the creation of the current civil registration and identification agency, Peru's electoral registry maintained responsibility for issuing electoral credentials. During the second half of the 20th century, electoral credentials were used as the primary national ID document for all adult citizens, and the main proof of legal identity when interacting with public and private organizations. Within this system, minors were not identified and, in the absence of clear guidelines and standard procedures, irregularities in registration were common.[2]

From 1980 to 2000, Peru faced intense political violence. As a result of confrontations between Peru's military and security forces, and the Shining Path and Tupac Amaru Revolutionary Movement, more than 69,000 people died or disappeared. The conflict resulted in the destruction of local government buildings. Local government documents were burned to sever the link between individuals and the central government.[3]

Fear of violence and the destruction of records added to existing difficulties in accessing civil registration services and information. As a result, thousands of Peruvians were undocumented, especially in remote rural areas and Indigenous communities. The conflict internally displaced approximately 600,000 people, who in many cases either did not have identification documents or did not carry them. Some created duplicate records by later registering in different offices. Others changed their names to protect their physical integrity, or altered their identity by changing their date of birth to avoid penalties for failing to report to military service on time.[4]

In the midst of political turmoil in 1993, the Peruvian government approved a new Constitution, which currently remains in effect. It established the *Registro Nacional de Identificación y Estado Civil* (RENIEC), a civil registration and identification organization with national jurisdiction.

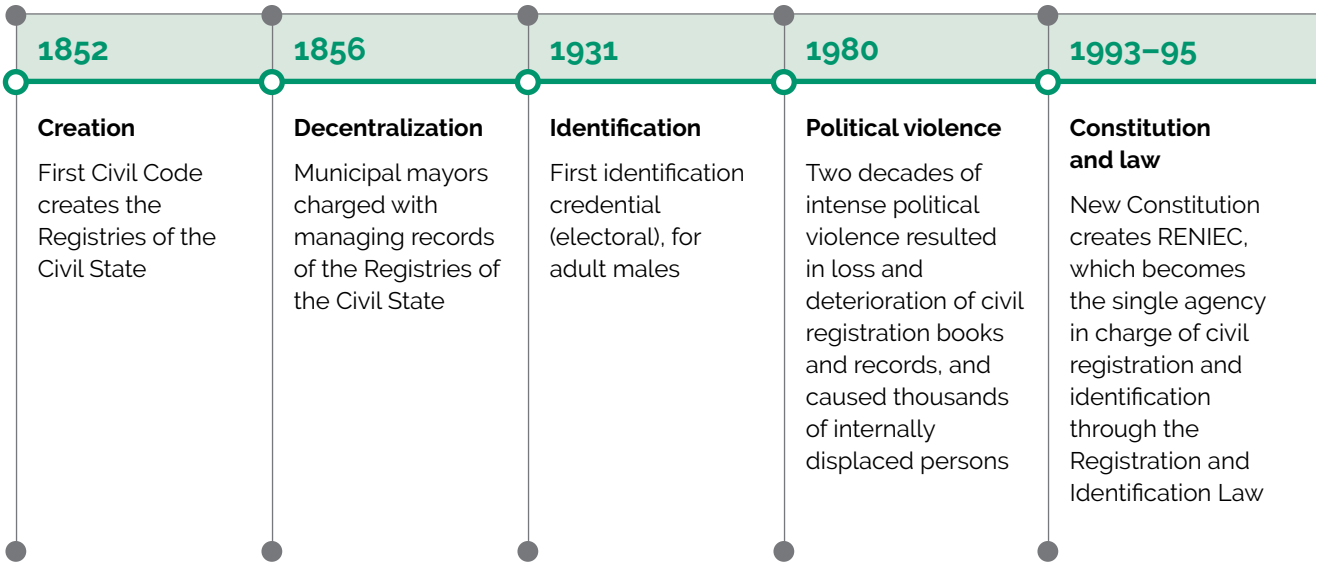

Figure 6.3: Timeline of civil registration and identification before RENIEC.

6.2 Legal and institutional arrangements

When RENIEC was created in 1993, the responsibilities for civil registration and identification fell under a single national agency. However, RENIEC was only officially established in 1995, with the enactment of Peru's Organic Law.

Good practice: Establishing constitutional independence and autonomy

RENIEC was created as an autonomous agency with constitutional independence. RENIEC's National Chief is elected by the National Board of Justice through a public competitive examination of candidates and can only be removed by the Board. The National Chief is appointed for a four-year period, with an option to renew for a second tenure. Given the unstable political conditions under which it was created, RENIEC's independence and autonomy are considered crucial to its stability and sustainability.

RENIEC is supported by a constitutional mandate and the Organic Law, which is higher in legal hierarchy that ordinary laws. This provides a solid legal basis for RENIEC to operate and lead the integration of civil registration and identification systems.

RENIEC is the only agency that is constitutionally mandated to provide civil registration services, assign a unique identification number (UIN), and issue national ID cards – or *Documento Nacional de Identidad* – to all Peruvian citizens in the country or abroad. RENIEC manages and maintains the *Registro Único de Identificación de las Personas Naturales*, Peru's unique identification register. Identity information is recorded in the database when citizens receive their first national ID card. This register is RENIEC's main database and is used by multiple public and private stakeholders to authenticate identity.

RENIEC also manages the integrated civil registration and microforms system, or *Sistema Integrado de Registros Civiles y Microformas.* This digital civil registration database serves two relevant purposes:

- It provides an online platform where civil registrars can register vital events in RENIEC offices, at civil registration offices located in provincial and district municipalities, and in rural areas and Indigenous communities that have not been fully incorporated into RENIEC and still function with some decentralization. Offices require an internet connection to use the platform.
- It works as a digital archive for current and historical records, combining digital images of original documents (certified microforms) with digitized text, making data easily searchable and retrievable.

The registers are linked using unique identification numbers, which are assigned during birth registration and help connect a person's vital events within the civil registration database. Together, these registers are indispensable to RENIEC in the integration of civil registration and identification data.

Other relevant laws that relate to RENIEC's work are:

- *Digital Signatures and Certificates Law* (2000);
- *Law that Regulates the Reconstruction of Birth, Marriage, and Death Records due to Negligence, Accidents, or Criminal Activity* (2009);
- *Personal Data Protection Law* (2011); and
- *Digital Government and Digital Identity Law* (2018).

For almost 25 years, RENIEC has prioritized providing national ID cards over civil registration. Originally decentralized, Peru's civil registration system included various procedures and forms that were scattered across the country, with no systematic or centralized mechanism to transfer or archive civil registration records. RENIEC has made significant progress, standardizing principles and guidelines for registration, modernizing processes, integrating diverse systems, and more recently, providing services in Indigenous languages. Some key steps include:

- Introducing overarching legislation to regulate civil registration and identification processes;
- Centralizing the production and distribution of standardized forms;
- Developing a common digital platform for online vital event registration;
- Approving specific criteria for the designation of civil registrars;
- Developing detailed procedure manuals and clearly defined responsibilities for civil registration officials; and
- Creating an internal registry training centre (*Escuela Registral*) to provide ongoing training to civil registration staff.

In addition, RENIEC created the Civil Registrar Web Portal,[5] an online tool that keeps registrars updated on legislative and regulatory changes, and civil registration processes and procedures. The portal also provides access to signature registers and the many forms registrars need to perform their duties. By supporting civil registrars, RENIEC seeks to provide more efficient services to the community.

Although RENIEC has exclusive authority over identification functions, in some cases, the agency has delegated the responsibility for civil registration. Once part of the decentralized network of civil registration offices that existed before RENIEC, these offices are called *Oficinas de los Registros del Estado Civil* (OREC), or Offices of the Registries of the Civil State. Although they have not been fully incorporated into RENIEC, they provide civil registration services.

It is worth mentioning that RENIEC has leveraged available digital technology to automate many of its civil registration and identification processes. There are more than 1,300 decentralized civil registration offices under municipal governments, which represent 21% of the total number of offices, but whose reach extends to more than two-thirds of the population. Currently, these offices can register vital events online, which automatically update the civil registration database and link to the identification register through a unique identification number.

RENIEC's network of service providers

RENIEC offers civil registration and identification services through its own offices and platforms, and through Offices of the Registries of the Civil State (ORECs), which have not been fully incorporated into RENIEC (Table 6.2). In total, RENIEC provides services at more than 4,800 offices, either directly or in cooperation with municipal governments.

In 1996, RENIEC delegated civil registration responsibilities to OREC offices, as it was not possible to integrate thousands of records in the short term. However, RENIEC has since implemented an integration strategy to gradually incorporate all offices. To date, birth, marriage, and death registration records from 70 offices have been digitized and integrated into RENIEC's centralized database.

RENIEC has legally revoked the delegation of civil registration duties to some OREC offices, but these offices still provide certified copies of the records they maintain. In other OREC offices, civil registrars in can register vital events directly into RENIEC's online system, with civil registration records automatically recorded in the civil registration database and linked to the identification register.

Type of office	Number	Civil registration services		ID services	
		Registration	Certified copies	Request	Delivery
Civil registration and ID agency	78	✔		✔	✔
Registration Office	63	✔	✔	✔	✔
Auxiliary Registration Office (in health centres)	186	✔		✔	✔
Permanent Support Centre	117			✔	✔
Temporary Support Centre	22			✔	✔
Multi-Service Virtual Platform*	11		✔	✔ (duplicate)	
Citizen Support Centre**	6		✔	✔	✔
Total	**483**				

Table 6.2: Network of RENIEC offices (August 2019).

Source: RENIEC

* Automatic machines similar to ATMs where individuals can pay RENIEC fees; request duplicates for deteriorated, lost, or stolen national ID cards; obtain certified copies of records that have been digitized into the RENIEC system; and update their marital status (from single to married).

** One-stop windows where multiple institutions, including RENIEC, provide services to citizens.

Type of office	Total number	Fully incorporated	Integration strategy		Partially incorporated	Pending Incorporation
			Partial duties	Connected online		
Provincial	196	15	6	173	179	2
Districts	1,678	54	9	1,046	1,055	569
Communities (*Centrospoblados*)	2,494	1	–	107	107	2,386
Indigenous communities	470	–	–	1	1	469
Total	4,838	70	15	1,327	1,342	3,426

Table 6.3: Network of Offices of the Registries of the Civil State (OREC) (August 2019).

Source: RENIEC

This integration strategy, coupled with digitized civil registration processes, has significantly improved civil registration in Peru. More than 85% of vital events are now registered online, which ensures faster and more secure information sharing between the civil registration database and the identification register. This has strengthened links between civil registration records and the process of issuing national ID cards, resulting in up-to-date identity information, particularly for vital events registered in the last two decades. A considerable number of older historical records have not been integrated.

Almost 5,000 offices have yet to be integrated, the vast majority of which are in remote rural and Indigenous communities. As these offices serve close to 20% of the population, the information takes longer to digitize and update. However, despite the technical difficulties, keeping offices in the field rather than concentrating services in connected centres helps make services more accessible to particularly vulnerable populations.

Good practice: Combining integration strategies with IT

Integrating a system that is scattered across more than 4,800 offices is costly and time consuming. So far, more than 1,400 offices have been totally or partially integrated. Although this figure may seem low in relation to the total number of offices, these offices represent 80% of the population and demand for services. RENIEC has fully integrated 70 offices and has adopted complementary measures to connect as many offices as possible. RENIEC has partially revoked civil registration duties for some offices, although they can still provide certified copies of civil registration records. However, the most widespread integration was achieved through RENIEC's online platform, allowing more than 1,300 offices to provide quality registration services in provincial and district capitals, and in smaller communities (centros poblados). As a result, 85% to 90% of registrations are now completed online.

6.3 Civil registration and vital statistics

Registration cycle

Peru's Constitution states that all persons have the fundamental right to identity (Article 2). Under the Civil Code, all individuals have the right to a name and a surname. This right is materialized through birth registration (Articles 19 and 25). Birth registration provides proof that the individual is recognized by the state and establishes nationality and filiation. This is a crucial step in achieving full access to civil, social, economic, and cultural rights.

As the agency responsible for registration and identification, RENIEC is part of a citizen's entire life.

By law, RENIEC is responsible for registering the following:

- Birth;
- Marriage;
- Death;
- Divorce and marriage dissolution;
- Recognition;
- Adoption;
- Forced disappearance, presumed death, and recognition of existence;
- Name changes;
- Naturalization; and
- Loss and restitution of nationality.

It is worth mentioning that in Peru, marriage is not considered a vital event, but an event that modifies a person's marital status. The concept of vital event is reserved for birth and death. However, in keeping with internationally accepted terminology, and given that RENIEC registers marriages, marriage is considered a vital event in this report to facilitate comparison with other case studies in the compendium.

Births, marriages, and deaths are the main vital events that RENIEC registers for free. In 2018 RENIEC registered 578,769 births (94% online); 89,128 marriages (89% online); and 149,066 deaths (93% online). These preliminary figures demonstrate that with the introduction of technology, online registration in Peru is now possible in more offices and has become the main way in which registration is completed. Table 6.4 details the legal registration period, requirements, and observations for birth, marriage, divorce, and death registrations.

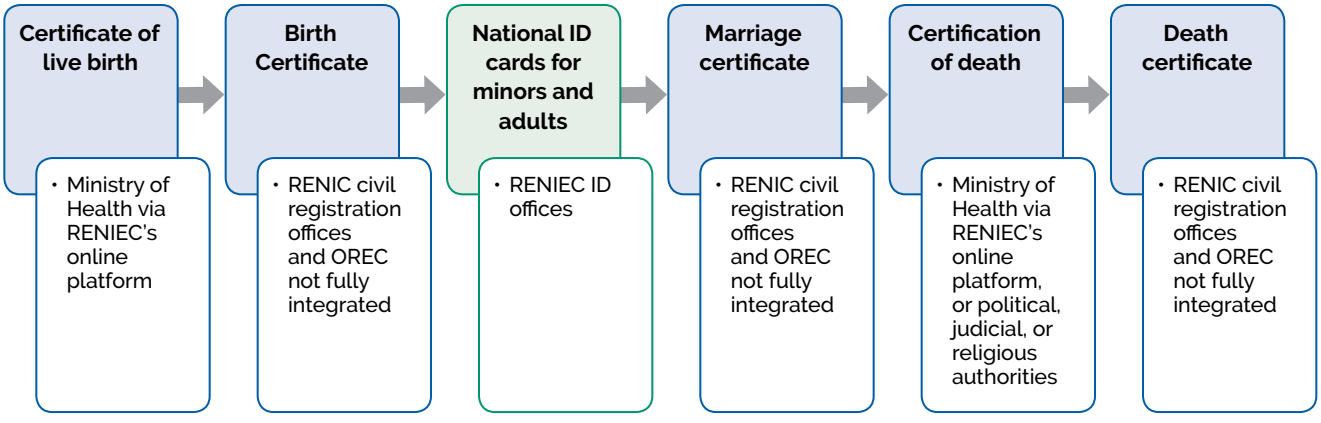

Figure 6.4: Registration and documentation cycle.

	Legal period	Requirements	Observations
Birth (timely registration)	Up to 60 days after birth; up to 90 days in remote or border areas, Indigenous, and rural communities.	1. Certificate of live birth (free) issued by a health professional or a sworn statement by a political, judicial, or religious authority when no health professional is available. 2. National ID card. Migration card, passport, or other document acknowledged by Peruvian authorities for foreigners. 3. Certificate of marriage for children of married couples (unless marriage record is digitized in the civil registration database).	Births that occur in health facilities where there is an auxiliary civil registration office are expected to be registered within 3 days.
Birth (late registration)	After 60 days or after 90 days in remote areas.	1. Certificate of live birth (free) issued by a health professional or a sworn statement by a political, judicial, or religious authority when no health professional is available. • When this certificate is not available, any of these documents can be presented: • Certificate of baptism; • Proof of school enrollment (with mention of last grade attended); and • Declaration of two adult witnesses, who must present their ID cards. 2. National ID card. Migration card, passport, or other document acknowledged by Peruvian authorities for foreigners. 3. Certificate of marriage for children of married couples (unless marriage record is digitized in the civil registration database).	Adults register their own births. In some cases, parents can complete the registration with explicit authorization from the adult son/daughter in the presence of the civil registrar.
Marriage	No legally established period (see observations).	1. Certified copy of marriage celebration record issued by a municipal authority. 2. National ID card. Migration card, passport, or other document acknowledged by Peruvian authorities for foreigners.	When marriage is celebrated in municipal offices without civil registration duties, these offices must send notification of celebrated marriages to the closest civil registration office every 15 days. One or both spouses must request registration.

continued

	Legal period	Requirements	Observations
Divorce	No legally established period (see observations).	1. Written request of registration of dissolution of marriage. 2. Judicial resolution of divorce, or certified resolution issued by notary or highest municipal authority. 3. National ID card. Migration card, passport, or other document acknowledged by Peruvian authorities for foreigners. 4. Payment of fee (US$2.50).	Once a divorce is registered, the marriage record is updated. Individuals must update the civil status on their ID cards within 30 days of the change. An updated marriage certificate is needed.
Death	No legally established period for deaths that occur in Peru.	1. Certificate of death signed by a health professional or a sworn statement by a political, judicial, or religious authority when no health professional is available. 2. Present and return ID card of deceased person or sworn statement of lost ID card signed by the declarant. 3. National ID card.	Deaths of Peruvians that occur abroad must be registered at any consular registration office.

Table 6.4: Birth, marriage, divorce, and death registrations.

Source: Civil Registration and Identification Organic Law (1995) and RENIEC website[6]

As shown in Table 6.4, individuals cannot register their child, their marriage, or the death of a close relative without a national ID card. Since the civil registration database and the identification register are interconnected, information on applicants can be retrieved online to authenticate identity and to automatically populate online registration forms.

According to the Constitution (Article 52), all individuals born in Peruvian territory (*ius soli*) and those born abroad to a mother or father who is Peruvian by birth (ius sanguinis) have the right to Peruvian nationality. Ius soli is applied regardless of the parents' migratory situation. If a birth occurs in Peru and applicants bring proof of birth (certificate of live birth or sworn statement by a community authority), the newborn will be registered as Peruvian. To register the child's birth, a foreign applicant can present their migration card, passport, or the national ID from their country of origin.

Civil registration and identification are further interconnected, as each individual must present a birth certificate when requesting a national ID card. A physical copy is not required if the birth certificate has been digitized and recorded in the digital civil registration database. Given that 85% to 90% of births are currently registered online, physical copies will soon be a thing of the past.

Using a unique identification number

A unique identification number (UIN) is assigned with every birth registration. Since 2005, UINs are included on paper registration forms and in the civil registration online platform, and will accompany individuals throughout their lives. UINs are 8-digit sequential numbers with an additional verification digit at the end. These do not reveal date of birth, location, or gender. This number becomes the national ID number and, along with biometrics, is used by RENIEC to build and link civil registration and ID databases, and to authenticate identity.

As soon as children receive their UIN, they begin to receive coverage from the *Sistema Integrado de Salud*, Peru's integrated health system. Furthermore, UINs must legally be used as the only valid identification number in tax and military registers, driver's licenses, passports, social security credentials, and in all institutions and procedures where a register must be adopted. RENIEC, in collaboration with the *Ministerio de Salud* (MINSA), Peru's Ministry of Health, is exploring the possibility of adding UINs to certificates of live birth to initiate the identification process immediately at birth.

Peru is moving towards a more integrated ID management system, using UINs to improve linking and information sharing between registers. This could save citizens and institutions time and money by facilitating identity authentication. It could also serve as the basis for creating a population register.

RENIEC is working to consolidate a digital identity system that allows citizens to increase their interactions with public institutions through an online hub, starting with electronic IDs and digital certificates. The UIN is one of the basic identity features upon which the system is built.

Vital events can be registered manually or online. Currently, registrars enter most registrations online using an electronic signature. Paper-based strategies are mostly limited to decentralized civil registration offices where RENIEC's online platform is not yet available due to connectivity issues.

Paper-based registration

All information is entered manually by civil registrars in pre-printed standard registration books provided by RENIEC. These books are kept in Lima and distributed to consulates and different offices in Peru. All records are registered with a duplicate, and supporting documents are attached to the corresponding record. Currently, between 10% and 15% of vital events are registered manually, mainly by offices in remote rural and Indigenous communities.

Digitized online registration

In RENIEC offices and in decentralized offices that are connected to RENIEC's online platform, information on vital events is entered electronically. Since the online civil registration platform is connected to the identification register, it automatically retrieves identification data through the UIN. For example, since the national ID number is the same as the UIN, using a mother's UIN on a birth registration form generates information on her complete name and address. Registrars sign certificates using an electronic signature. A certified copy is printed and handed to the applicant. Information recorded in the civil registration database can later be retrieved when people request a national ID card.

Good practice: Providing online registration services at health facilities

Following an agreement signed by RENIEC and Peru's Ministry of Health in 2012, health facilities have access to the *Sistema de Registro del Certificado de Nacido Vivo en Línea* (certificate of live birth online registration system). This online platform, designed by RENIEC, allows doctors and obstetricians who assisted the mother to register a birth and generate the certificate of live birth (CLB). This system helps reduce the risk of false or duplicate identities, and securely identifies the mother and health professionals with their ID numbers. This simplifies the birth registration process by making CLB information, which is required for birth registration, available through RENIEC's civil registration database using the mother's UIN.

Birth registrations and requests for minor ID cards, issued for citizens under age 18, can be completed in one of 183 civil registration offices located in public and private health centres. This has increased timely registration rates, with approximately 85% of births currently registered online.

In 2015, in agreement with the Ministry of Health and the National Statistics Institute (INEI), RENIEC developed the *Sistema Informático Nacional de Defunciones* (national computerized death certification system). That year, only 56% of deaths had a medical death certificate and around 30% of causes of death were considered ill-defined.[7]

This platform, accessible via the Internet, allows for online death certification, decreases the time required to issue printed death certificates, and creates a single, current national database of deaths. Medical personnel can search and select the ICD-10 (World Health Organization's Statistical Classification of Diseases and Related Health Problems) code to assess the cause of death. They can also access the deceased person's and medical professional's ID information from RENIEC's register using the UIN, thus reducing the steps required to complete the form.

The platform automatically blocks death certification for a person whose death has already been recorded, and can be used by institutions to cancel payments for deceased beneficiaries. Since death certificates are easily produced and rapidly handed to the family, this also facilitates death registration. This tool is available to all medical personnel, including forensic professionals in judicial institutions.

From August 2016 to April 2017, 135 workshops were organized to train more than 2,500 doctors to use the platform to complete a death certificate. RENIEC, the Ministry of Health, and the National Statistics Institute are working together to improve implementation in health facilities and coverage of death registration.

Digitizing birth and death registration has strengthened the partnership between RENIEC and the National Statistics Institute, as RENIEC designed both platforms to include information the institute required to produce timely and complete vital statistics. Digital technology has reduced delays created by transferring paper-based data and mitigated the risk of errors and inconsistencies.

In 2016, the National Statistics Institute published its "Fertility, Mortality, and Nuptiality in Peru" report using information provided by RENIEC. While it still relies on a variety of sources to produce vital statistics on births and deaths (RENIEC, Ministry of Health, sample surveys, census, etc.), information on marriages is drawn exclusively from civil registration data. According to the National Statistics Institute, information on these three vital events is crucial to study population growth, implement public health programs for reproductive and maternal and child health, and plan and implement housing policies and child protection programs.[8]

Processing civil registration records

Records from online registration

Processing and linking information for vital events that are registered online is relatively straightforward. When information is entered directly into the civil register, it is automatically linked with the identification register through the UIN. Printed copies of registration records are delivered to RENIEC headquarters to be scanned and used as backup for civil registration registries.

Good practice: Digitizing records

Incorporating records into the digital civil registration database helps streamline processes and save citizens and institutions time and money:

- Centralizing records creates reliable civil registration records by facilitating the cancellation of duplicate registrations and the identification of fraudulent records.
- Incorporating civil registration information into the database guarantees that information is shared with the identification register to update identity data.
- Once civil registration records have been digitized, physical copies are no longer required for interactions with public institutions.
- If physical records are required, citizens can obtain a copy from any RENIEC or decentralized office that is connected online, or through RENIEC's automatic machines. If the records have not been digitized, citizens must request a copy from the office where the vital event was originally registered.
- Consolidated and up-to-date information allows other public institutions to build indicators to better plan policies and monitor implementation.

Records from paper-based registration

Physical records are historical civil registration archives and documents that are generated from manual registration procedures in the Offices of the Registries of the Civil State (OREC). Physical documents and civil registration books are delivered to RENIEC headquarters in Lima, where they are classified and digitized. Digitization involves entering data from paper records and creating digital images that are turned into microforms.

Current records

Paper-based registration is a slower process that involves more steps. This type of registration is done mostly in ORECs, and records must be physically transported and later digitized in central facilities. Unless they are fully integrated with RENIEC or located in health facilities, all offices must submit a monthly report that includes all vital events registered during that period, including supporting documents, duplicate records, and records of modifying annotations made to original documents.

Historical records

RENIEC has implemented a strategy to integrate all ORECs, which includes retrieving and digitizing historical civil registration records from municipalities to include them in Peru's civil registration database and centralized archives. This effort will take several years and requires a significant financial investment. Because there was traditionally little information sharing between local civil registration offices and a centralized authority, it is more difficult to fully integrate civil registration and identification information and ensure the reliability of identification records and authentication services.

In 2010, an internal resolution required all Peruvian civil registration offices to send actas de reserva, or duplicate records, dating back to 1997 to be incorporated into the digital civil registration database. RENIEC estimates that approximately 60 million civil registration records were maintained by municipal governments, of which around 14 million have been digitized.

	%	Baseline	Progress	Pending
Total	**100**	**59,076,571**	**13,765,660**	**45,310,911**
Provinces	38	22,229,652	6,140,446	16,089,206
Districts	56	33,047330	7,620,582	25,426,748
Remote communities	5	3,229,162	4,632	3,224,530
Indigenous communities	1	570,427	0	570,427

Table 6.5: Processing historical records (by April 5, 2019).

Source: RENIEC

In addition, a law enacted in 2009 gave RENIEC the mandate of reconstructing civil registration records for registry books that deteriorated or were destroyed due to negligence or criminal actions. RENIEC has digitized 91% of a total of 1.2 million identified records, including birth (72.3%), marriage (7.3%), and death (20.4%) registration records.

Despite these efforts, 77% of historical civil registration records have not yet been incorporated into RENIEC's database, which prevents up-to-date integration of civil registration and identification data. The good news is that vital events are increasingly registered online, which strengthens the integration of the civil and identification registers. In recent years, RENIEC's management has committed additional financial resources to accelerate the process of incorporating paper-based records into the civil registration database, to help bring the ID management system closer to its full functioning potential.

RENIEC also received financial support from the Inter-American Development Bank (IDB), which allowed the full incorporation of historical civil registration records for the province of Cajamarca in northern Peru. More recently, Peru signed a US$80million loan with the IDB, which includes a US$25million investment to include historical civil registration records from 179 decentralized offices. This represents 50% of the archives still to be incorporated into RENIEC's system. These efforts mirror financial plans led by the Municipal Modernization Program and the Incentives Plan to Improve Municipal Management to allocate specific resources to strengthen municipal governments. Carried out during the 2010–2013 period, these initiatives included multiple indicators to help municipal offices provide civil registration services and comply with RENIEC reporting requirements.

6.4 Integrating CRVS and ID management

The national ID card is the only identification credential legally valid for all civil, commercial, administrative, and judicial interactions. It is the fundamental key to accessing public services and social programs. It is required to vote, interact with fiscal and judicial authorities, register a child or obtain a marriage certificate, register for the social security system, access benefits from social protection programs, obtain a passport or a driver's license, or register a vehicle or property. It is also required to open a bank account or register a cellphone SIM card. According to RENIEC, 99.3% of the population is identified,[9] improving the inclusivity and efficiency of public services and the management of social programs.

All Peruvian nationals must legally have a national ID card at birth. To receive an ID card, citizens must visit any of RENIEC's ID offices (see Table 6.2). For newborns, requests can be presented at RENIEC offices set in health facilities. Peruvians living abroad can obtain their national ID at consular offices. Requirements include:

- Receipt of payment;
- Certified copy of birth certificate (if not recorded in the civil registration database);
- ID of parents for minors;
- Proof of residence for adults; and
- Photo (for offices where picture is not captured electronically by RENIEC staff).

RENIEC issues two types of national ID cards: minor's ID (birth to 18 years) and adult's ID for ages 18 and over. The cost of an adult ID card is approximately US$10 or US$12 for an e-ID (which is optional), and US$5 for a minor's ID. The document is free for vulnerable populations and adults aged 65 and over.

It is worth noting that RENIEC does not provide identification for legal foreign residents.

Integrating databases

Digital technology is making the integration of civil registration and identification systems faster and more complete. RENIEC's civil registration and identification registers are linked through the use of the UIN (assigned at birth), which helps ensure that changes in civil registration are reflected in a citizen's identity.

Changes in civil registration information are not automatically reflected in the identification register. All citizens are legally required to inform RENIEC offices of any change in their personal information and request rectification. Failure to do so carries a financial penalty equal to 0.2% of the *Unidad Impositiva Tributaria*, or taxation unit (approximately US$2.60). Mandatory reporting of changes ensures accurate information on citizens' identity and creates a strong ID management system based on current, reliable civil registration information.

Although changes are not automatically updated, once a vital event is recorded in the civil register, the system generates an alert in the identification register to notify officials that a new civil registration record is available. For marriage registrations, spouses must notify RENIEC to update the identification register. If they do not, the alert will be flagged, and they will be unable to renew or replace their national ID card (in case of loss or theft) until the rectification is made.

A new card must be issued to reflect changes of residence, name or surname, marital status, and the decision to donate organs on the ID card. Citizens must visit a RENIEC office to provide supporting documents, unless the marriage certificate has been recorded in the civil registration database. They must also provide proof of rectification fees payment, which ranges from US$5 to $7. Because gender and name changes require a judicial process, applicants must present a certified copy of the judicial decision with their request. Administrative corrections to a name and/or surname can be made if the change is due to clerical error.

Before digital technology, changes in civil registration information were rarely communicated to update identification data. This caused many problems in maintaining updated electoral, social security, and social program registers, such as identifying dead beneficiaries or tracking how many relatives were covered by an insured worker. Once RENIEC began digitizing historical records, they conducted a thorough clean-up process that included cancelling duplicate or irregular registrations and returning civil registration records to their original offices for correction.

Polygamy and fraud in Peru

In 2010, RENIEC requested that decentralized offices send all records dating back to 1997 to be incorporated into the civil register. Before long, RENIEC officials began noticing irregularities. After receiving records from only half of Lima's municipalities, they discovered that more than 217,000 married citizens still appeared as single on their national ID cards. Even more alarming, they found close to 2,000 cases of bigamy and more than 200 cases of polygamy in Peru.

One of these cases involved Wilfredo Beltrán, who had six simultaneous marriage certificates in different districts of the capital, with three marriage registrations in one district alone. This duplication was attributed to a lack of systematic connection between decentralized civil registration offices. Mr Beltrán was later detained in Colombia, where he was accused of swindling women after persuading them to marry him. Officials learned that he had also been married in Venezuela, Brazil, Ecuador, and Panama.

Another example included a former congressman who, between 1984 and 2000, falsely registered as single to protect his marital property from five judicial processes.

A specialized unit within RENIEC is responsible for cleaning up the civil registration database. Members of this unit review records included in the database both ex-officio and at the request of an interested party. Corrections or cancellations may be made due to

- errors in records that affect the legality of the registration;
- duplicate registrations;
- errors and omissions in civil registration records; and
- suspicion of fraudulent registrations that result in investigation.

This unit compares records against duplicates coming from RENIEC and the Offices of the Registries of the Civil State (OREC), records coming from the National Archives, and information in the identification register.

De-duplication in the identification register is carried out using the UIN and an automatic biometric information system. Biometric data includes 10 fingerprints and a 21-point facial recognition system, which are obtained when a national ID card is issued. In 2017, as part of maintaining the identification register, 11,429 records were amended following investigations related to multiple registrations, false information, identity theft, registration with cancelled birth certificates, and outdated addresses and civil status. In addition, 165,636 records of deceased citizens were removed.[10]

Sharing Information with other functional registers

RENIEC enjoys wide public recognition and is currently the institution that Peruvians trust most, according to recent surveys.[11] RENIEC is also considered the primary source of identity authentication for both the public and private sectors. By building an increasingly robust identity management system, RENIEC has made service provision more effective and efficient. It has also helped ensure broader inclusion in social programs and benefits.

RENIEC has become the central checkpoint for identity authentication by making national ID cards mandatory identification for social programs and social security benefits, and by granting access to the identification register. RENIEC's systems guarantee more rapid, appropriate, and transparent allocation of public services and benefits, resulting in fewer leakages, duplications, fraudulent registries, and undue payments. RENIEC has signed numerous agreements with local, regional, and national institutions and organizations that require access to the identification register to authenticate identity. On average, RENIEC receives 1.2 million queries daily.

Type of access	Number of queries
Data web service	12,501,760
Dedicated line	242,224,554
Biometric verification	125,565,446
Online access (RENIEC website)	16,439,856
Cotejomasivo (massive cross-check)	508

Table 6.6: Annual queries to the identification register (2018).

Source: RENIEC (2019)

These formal agreements include specific terms about the type of ID information that can be shared from the database. In addition, RENIEC must comply with Peru's Data Protection Law, which was approved in 2013 and updated in 2017.

Good practice: Exchanging information with the public and private sectors

From 2015 to 2018, RENIEC signed a total of 2,201 agreements with public and private institutions to grant access to the identification register. Of these, 1,547 provide access through the internet, 404 share biometric verification, 159 allow access through a dedicated line, and 91 allow web access.[12] During that period, the number of queries to the identification register grew an average of 49%.

Some services are provided for a fee, particularly those used by private companies. In addition, RENIEC regularly shares lists of deceased citizens, including ID number and date of death, with public institutions responsible for implementing social programs to update their functional registers.

The impact of identification and identity verification on the provision of social benefits can be seen in programs for everyone, from newborns to the elderly.

Improving the provision of nutrition subsidies[13]

EsSalud (Seguro Social de Salud) is the public health insurance agency that provides health coverage for 11 million workers in Peru. One of EsSalud's programs is the subsidio de lactancia, or nutrition subsidy. This program provides one-time financial support to mothers of newborn children whose parents are insured workers.

EsSalud discovered that subsidies were not reaching all potential beneficiaries. Further, those who received the subsidy were not getting it in the first weeks, as the program intended. To apply for the program, mothers were required to visit an office shortly after giving birth, fill out an application form, get evaluated, and wait for final authorization to collect the money from the bank. On average, the process took up to two months.

In 2018, EsSalud signed an agreement with RENIEC to access the institution's database of live birth certificates registered in health facilities using the online platform. This allows EsSalud to check the database daily, retrieve mothers' identification information, and immediately complete the eligibility evaluation. If the evaluation is positive, the system sends a payment authorization to the National Bank (public banking institution with a nationwide network of offices) so that beneficiaries can collect their money. This process now takes 72 hours on average.

Overall, the new process shows substantial progress in timeliness and inclusiveness:

Former process (Reference period: August 28, 2017 – March 24, 2018)			**New process** (Reference period: August 28, 2018 – March 24, 2019)		
Days since birth	Applications	%	Days since birth	Applications	%
1–7	5,410	6.6	1–7	59,319	57.8
8–14	8,405	10.3	8–14	5,769	5.6
15–21	7,795	9.6	15–21	4,463	4.3
22–28	7,930	9.7	22–28	3,808	3.7
29–60	31,498	38.7	29–60	14,953	14.6
61–90	11,856	14.6	61–90	7,109	6.9
91+	8,472	10.4	91+	7,246	7
Total	81,366	100	Total	102,668	100
Total amount granted	US$20,051.06		Total amount granted	US$25,300.53	

Table 6.7: EsSalud's new process for completing eligibility evaluations for the nutrition subsidy.

continued

As a result, the subsidy now reaches almost 60% of babies in the first week, compared to 7% with the former process. Further, there has been a 26% increase in beneficiaries. EsSalud estimates that previously, 5% to 7% of insured mothers did not complete an application. This means they did not receive financial support for their newborn children.

With this new process, mothers no longer need to go to an office. The system assigns bank offices to disburse the subsidy according to the location of the hospital where the birth was registered. The current arrangement has also helped solve problems of multiple-pregnancy cases, eliminating suspicion of duplicate registrations from the same mother. RENIEC includes a field to report multiple births in the certificate of live birth, so information can easily be validated.

Although there is no precise quantification, EsSalud estimates the changes have decreased undue payments and resulted in financial savings. In addition, EsSalud offices have processed 124,000 fewer on-site applications.

For this approach to work, births must be certified online. According to EsSalud, roughly 90% of health facilities are connected to the online system. EsSalud is also responsible for granting a subsidy for funeral expenses and has been working on a similar procedure for death certifications. However, since less than 80% of deaths are certified online, EsSalud cannot guarantee that death benefits will be received as quickly as nutrition payments.

Other examples of improved service provision include the Padrón Nominal (nominal children register) and *Pensión 65* (Pension 65) programs.

Nominal children register

In 2012, RENIEC collaborated with the Ministry of Economy and Finance, Ministry of Health, and local governments to create the nominal children register, a database of children aged 0 to 6 that collects information on 30 socioeconomic variables. It includes information on residence, household income, health, education, mother's language, and membership in social programs, as well as identification data coming from the civil and identification registers.

Starting with information available from the certificate of live birth online registration system, this database tracks children using their mothers' ID number. It monitors registration and identification of minors to help RENIEC locate and reach this population in their household – and to guarantee documentation. Continuously updating the database allows for targeted services and benefits provision, such as nutrition, vaccination, and school attendance. Once a birth is registered, this data is also included in the nominal children register to complete information. Information from the certificate of live birth and the birth registration are crucial to monitoring children, ensuring their identification, and identifying potential programs to assist children and their mothers.

Pension 65

Introduced in 2011, Pension 65 is a social program that grants a monthly subsidy to persons over age 65 who live below the poverty line. RENIEC collaborated with the *Ministerio de Desarrollo e Inclusión Social* (MIDIS), or the Ministry of Development and Social Inclusion. Together, they organized targeted campaigns to waive registration fees for national ID cards for people aged 70 and older to facilitate their registration in the program. RENIEC also deployed staff to provide services in homes, hospitals, and care homes for citizens who had difficulties getting to an office. When the program was implemented, officials discovered that lists included deceased beneficiaries, which created the possibility of identity theft, resulting in undue payments estimated at US$225,000.[14]

In 2018, the Ministry of Development and Social Inclusion and RENIEC signed an agreement to provide e-ID cards to Pension 65 beneficiaries to improve the authentication processes. The agreement includes four-channel access to the identification register (online consultation, dedicated line, data web services, and massive cross-check), and daily reports on the deceased population.[15] However, RENIEC officials recognize[16] that these issues will not be fully resolved until death registration coverage improves.

The widespread use of national ID cards and UINs by social programs has improved information exchange among institutions and enabled targeted provision of benefits. However, some concerns have arisen in recent years about data protection. In June 2018, a civil society organization called *Hiperderecho* claimed that a security breach allowed the download of national ID card pictures of all Peruvians.[17]

Electoral Register

According to the Constitution (Article 177), RENIEC is part of Peru's electoral system, together with the *Jurado Nacional de Elecciones* (National Jury of Elections) and the *Oficina Nacional de Procesos Electorales* (ONPE), or the National Office for Electoral Processes. As such, one of RENIEC's constitutional mandates is to help maintain an updated electoral register. RENIEC's Electoral Register Unit uses four main variables to monitor and update the electoral roll using its databases:[18]

- **Date of birth** – To monitor citizens' eligibility to vote and include everyone who turns 18 by the date of celebration of the electoral process.
- **Date of death** – To remove deceased voters from the register.
- **Address** – To verify residence according to the last reported address in the identification register.
- **Legal situation** – To monitor final court judgements that result in the loss of political rights.

RENIEC sends updates on the electoral roll to the National Office for Electoral Processes every three months. A first version of the electoral roll is set 365 days before an election and includes all citizens that will turn 18 by the day of the election. Registries can be cancelled and addresses changed on the preliminary list prior to the election, but new inclusions are not permitted.

If an address is not verified, the system creates an alert in the identification register to require that citizens update it. The final version of the electoral register includes biographical information, photo, and fingerprints for every registered voter, including those living abroad. According to RENIEC officials, the slow processing of manual death registrations is the hardest gap to fill in updating the electoral register, as records are not quickly integrated into the civil registration and ID databases.

Conclusion

Tackling challenges with good practices

Integrating civil registration and identification in Peru has brought many tangible benefits. RENIEC has expanded its service network and integrated civil registration offices. This integration has made service provision more efficient and inclusive by allowing targeting of social benefits. It has also reduced leakages, duplicate and fraudulent registrations, and undue payments in social programs.

Civil registration as the backbone of identity management

Peru's decentralized civil registration system made it challenging to fully integrate civil registration duties under a single institution. RENIEC officials are aware of the crucial role that civil registration plays in building a solid identity management system. This report has identified good practices that, thanks to RENIEC's commitment, have strengthened Peru's CRVS system and improved service delivery.

From legal and institutional arrangements to the introduction of digital technology and collaboration with other institutions and organizations, RENIEC has made significant progress in making CRVS a key part of the ID management system. As a result, RENIEC has become the main source of identity information in Peru.

Closing the last gaps

RENIEC has made remarkable progress in the last two decades, reaching almost universal coverage of birth registration and identification. However, some segments of the population remain left out, especially in communities with overlapping vulnerabilities, such as geographic isolation, Indigenous minorities, and poverty.[19] People in rural and remote areas face obstacles to registration and identification services during the entire documentation cycle:

- **Certificate of Live Birth** – More than 90% of births occur in a health facility, but figures show substantial regional variations. In areas characterized as rural forest, this percentage drops to 60.4%, which creates difficulties in obtaining a certificate of live birth. In urban areas, 97.3% of the population has a certificate, compared to 76% in rural areas. For births that occur outside of health facilities, a sworn statement by a community authority is accepted as proof of birth, but it is not always processed.
- **Birth registration** – Although registration is almost universal at 98.3%, improvements are needed to increase timely registration. Regional differences show that rural forest areas have lower rates of timely registration (80% to 83% in 2018, in contrast with the national average of 92%). Similarly, birth registration records coming from offices in Indigenous communities contain more errors (from 20% to 45% of analyzed records).
- **National ID** – Currently, 99.3% of Peruvians have a national ID, but there are two main variables that relate to documentation gaps considerably bigger than the national average of 0.7%:
  - Age, where the gap is 4.4% for children 0–3, and 1.3% for seniors 75 and older; and
  - Geography, where gaps range between 2.6% and 3.3% in the rural forest, and 1.8% to 3.7% in border areas (especially the Amazon border).

Some obstacles to closing these gaps include:

- Lack of awareness and information for beneficiaries and authorities;
- Long distances to facilities (health centres, civil registration and identification offices);
- Insufficient financial and human resources in health facilities and civil registration offices;
- Lack of internet connectivity and computer equipment;
- Insufficient and inadequate training in remote health facilities and decentralized civil registration offices;
- Illegal requests for fees; and
- Difficulties in obtaining records that have not been integrated into the digital civil registration database.

To address these remaining gaps, RENIEC has implemented concrete measures that are considered good practices in reaching out to vulnerable populations:

- Mobile registration units;
- Improved services for Indigenous communities; and
- Inter-institutional alliances and cooperation.

Mobile registration units (Registroitinerante)

RENIEC's Identity Restitution and Social Support Department organizes monthly deployments to rural and Indigenous communities to bring civil registration and identification services closer to remote and isolated areas. In 2018, this Department carried out 10,917 campaigns across Peru, most of which consisted of two-day deployments. In this period, they processed hundreds of thousands of service requests, including more than 450,000 requests for national ID cards. These services, aimed at vulnerable populations, are provided for free.

Improved services for Indigenous communities

The Identity Restitution and Social Support Department is also developing a project to provide customized training to civil registrars in Indigenous communities. This is because training material and methodologies used in large urban settings do not necessarily work with Indigenous communities' traditions and lifestyle. This initiative could prove effective as a means of guaranteeing good quality service and reducing registration errors.

Peru has 48 Indigenous languages that are spoken by approximately 16% of the population. Since 2014, RENIEC has worked to promote the use of Indigenous languages in civil registration services. In addition to removing barriers to accessing civil registration, this also contributes to promoting linguistic rights and preserving the languages. RENIEC began providing civil registration services in 2014, starting with *Jaqaru*. By 2019, it had expanded to offer services in 10 Indigenous languages.

RENIEC has developed an intercultural management model that can issue bilingual birth, marriage, and death certificates. By June 2019, more than 100,000 certificates had been issued. With an intercultural vision, RENIEC provides an online registration platform, civil registry books, civil registration forms, dissemination and training material, and certified copies of civil registration records in Indigenous languages. Available in RENIEC offices and in Offices of the Registries of the Civil State alike, this service has helped reduce registration errors, promote inclusion, reduce under-registration, and contribute to reaching the United Nations' Sustainable Development Goals, particularly target 16.9 that applies to universal birth registration.

Inter-institutional alliances and cooperation

RENIEC has systematically built alliances with other public institutions to expand its reach across Peru and increase awareness about the importance of civil registration and identification among the population. Due to the mandatory use of national ID cards to access social programs and benefits, campaigns related to enrollment in these programs have created valuable opportunities to offer registration and documentation services, with some services provided free of cost. Cooperation with the Ministry of Health (MINSA) has brought important results:

- Establishing auxiliary offices in health centres to allow faster and easier registration and identification of children;
- Online birth and death registration using a RENIEC designed online platform; and
- Creation of the nominal children register, which also helps monitor documentation of minors, in collaboration with the Ministry of Economy and Finance (MEF), local governments, and social programs.

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