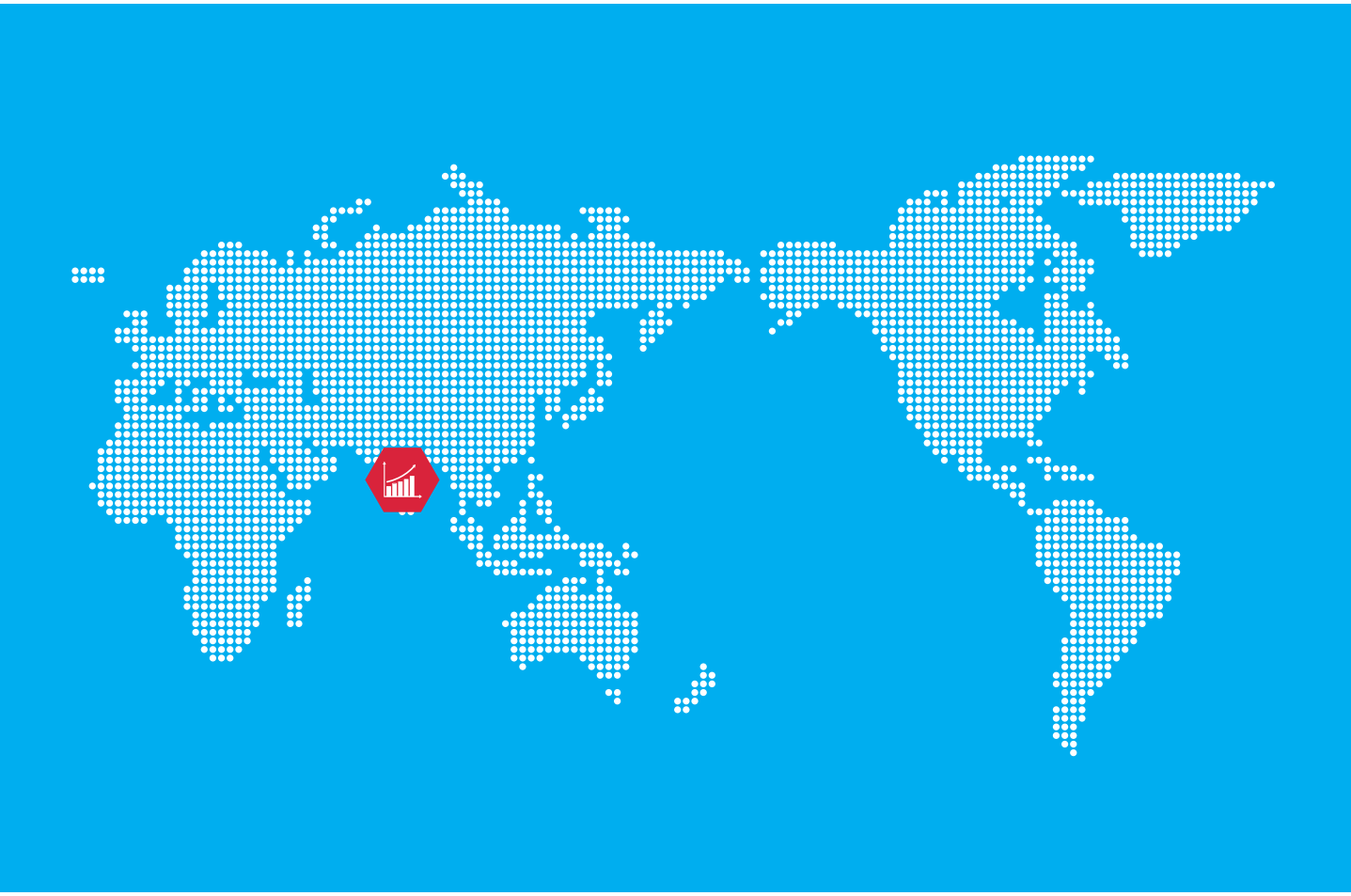
Knowledge Sharing Program

2016/17 KSP-WB Joint Consulting Project :

Strengthening Civil Registration and Vital Statistics: The Second Phase



Korea Eximbank
THE EXPORT-IMPORT BANK OF KOREA

Ministry of Strategy and Finance

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2016/17 KSP-WB Joint Consulting Project

Project Title	Strengthening Civil Registration and Vital Statistics : The Second Phase
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List of Abbreviations

ADB	Asian Development Bank
AIPJ	Australian Indonesian Partnership for Justice Program
ASEAN	Association of Southeast Asian Nations
BNP2TKI	National Board for the Placement and Protection of Indonesian Migrant Workers
BPR	Business Process Re-engineering
BPS	Indonesian Statistics Agency
CAPIL	Office of Population and Civil Registration (Indonesia)
CCBDR	Coordinating Committee on Birth and Death Registration (Myanmar)
CMCC	Civil Management Inter-Ministerial Coordination Committee
CMIS	Civil Management Information System
CR	Civil Registration
CRG	Civil Registrar General
CRVS	Civil Registration and Vital Statistics
CSF	Critical Success Factor
CSO	Central Statistics Organization (Myanmar)
CSOs	Civil Society Organizations (Indonesia)
DPOs	Disabled Persons Organizations
DPRD	Indonesian Regional House of Representatives
EDI	Electronic Data Interchange
EGDI	E-Government Development Index
EKTP	Indonesian National ID Card
EPI	E-Participation Index
EU	European Union
FRR	Family Relationship Registration
G4C	Government for Citizens
GAD	General Administration Department
GAO	Government Accountability Office
GDP	Gross Domestic Product
HMIS	Health Management Information System
HTS	Home Tax System
IAI	Initiative for Association of Southeast Asian Nations Integration
IAWG	Interagency Working Group (Myanmar)
ICR	Intelligent Character Recognition
ICT	Information Communication Technology
IDM	Identity Management

IMF	International Monetary Fund
IMRSSP	Indonesian Mortality Registration System Strengthening Project
IOM	International Organization for Migration
ISP	Information Strategy Planning
KDI	Korea Development Institute
KEXIM	Korea Export/Import Bank
KOICA	Korea International Cooperation Agency
KOMPAK	Australia-Indonesia Government Partnership
KOTRA	Korea Trade-Investment Promotion Agency
KSP	Knowledge Sharing Program
KUA	Religious Affairs Office (Indonesia)
MCF	Myanmar Computer Federation
MICT	Myanmar Information Communication Technology Park
MICTDC	Myanmar Information Communication Technology Development Corporation
MMSIS	Myanmar Statistical Information Service
MOFA	Ministry of Foreign Affairs
MOHS	Ministry of Health and Sports
MOHA	Ministry of Home Affairs
MOI	Ministry of the Interior
MOJ	Ministry of Justice
MORA	Ministry of Religious Affairs
MOSF	Ministry of Strategy and Finance
MVRS	The Modified Vital Registration System (Myanmar)
NCA	National Computerization Agency
NEIS	National Education Information System
NGO	Non-Government Organization
NHIS	National Health Insurance Service
NIA	National Information Society Agency
NIDA	National ICT Development Agency
NIHRD	National Institute of Health Research and Development (Indonesia)
NLD	National League of Democracy
NRC	National Registration Card
NSDS	National Strategy for the Development of Statistics (Myanmar)
OECD	Organization for Economic Cooperation and Development
OGP	Open Government Partnership

OSI	Online Service Index
PCS	Population Change Survey
PEKKA	Women Headed Family Empowerment (Indonesia)
PHC	Population and Housing Census
PUSKAPAUI	Center on Child Protection, University of Indonesia
RIN	Resident Identification Number
RR	Resident Registration
RRC	Resident Registration Card
RRN	Resident Registration Number
SCI	Statistical Capacity Indicator
SIAK	Population Administration Information System (Indonesia)
SIMKAH	Information Management System of Marriage (Indonesia)
SLORC	State Law and Order Restoration Council
SUSENAS	Indonesian National Social Economic Survey
TFT	Task Force Team
TII	Telecommunications Infrastructure Component Index
UN	United Nations
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
VRS	Vital Registration System
VS	Vital Statistics
WBG	World Bank Group
WHO	World Health Organization

Summary

The Civil Registration and Vital Statistics (CRVS) system was established in Korea following the enactment of the Civil Registration Act in 1962. Since then, the Resident Identification Number has served as the key unit of personal data. Vital statistics are established based on the major vital events reported by individuals during birth/death registration, and these are used for formulation of policy on health and welfare. Backed by the world's best e-government system, Korea's civil registration system serves as an effective policy instrument for timely delivery of many essential public services. Korea's CRVS system offers customized welfare services to the public after identifying each individual in the government's key database system including services through the Health Management Information System (HMIS), the Social Security Information System (Haengbok-e eum), the National Education Information System (NEIS), and the Home Tax System (HTS).

Interestingly, no thorough research has yet been done into how Korea's CRVS system has developed through the years. Historical consideration and analytical outcomes on legal institutions, political, economic, and socio-cultural barriers found at the initial stage of the system as well as success factors for overcoming these barriers could be of great assistance in the formulation of master plans and strategies dedicated to introducing Korea's CRVS system in developing countries.

Firstly, this project looks into the history, status, and challenges of the civil registration system, family relations registration system, and vital statistics system in Indonesia, the Lao People's Democratic Republic (Lao PDR), and Myanmar and offers policy proposals for institutional development in these nations.

Secondly, this project analyzes the applicable laws and the institutions for CRVS, particularly with regard to their historical change. Details of major revisions made in applicable laws such as the Family Relationship Registration (FRR) Act, the Civil Registration Act, and the Statistical Act are categorized chronologically, and changes are explained and analyzed with emphasis on major environmental changes such as transitions in government, social/economic changes,

and technological development. This project is expected to yield valuable policy proposals that are more appropriate for Indonesia, the Lao People's Democratic Republic (Lao PDR), and Myanmar.

Thirdly, based on the background of the development of Korea's CRVS system as well as analysis of the development plan and transition process, consensus is built on key factors of successful system development, crisis management, and improvement and resolution measures. The current status of the CRVS system and changes thereto are analyzed in depth with particular focus on legal institutional changes and institution of system development, and critical elements of effective planning and perpetuation of the CRVS system are presented.

Through research on existing literature and relevant data, in-depth interviews with appropriate experts, visits to partner nations and in-depth interviews with persons concerned, training programs and workshops, this project aims to deduct profound policy implications regarding challenges, improvements, and resolution measures in the course of the development and management of Korea's CRVS system. This would lead to system development and application measures appropriate for partner countries while enabling the formulation of proposals for policy sharing and cooperation with them.

Since the CRVS system entails cooperation with various government ministries, practical policy proposals for Myanmar based on success factors in diverse policy elements may be deduced by examining Korea's experience in a number of respects including measures for encouraging collaboration with pertinent government ministries or organizations, maintaining the interest of the political leadership, devising measures for human resources development for officials involved with the CRVS system, funding, and securing material and human resources for the development of the information system. Indonesia needs to put effort on revising the related legislations and improving governance, enhancing policy coherence for CRVS integration and statistical capacity, raising awareness toward CRVS service access as a right, and maintaining an efficient aid system. It is necessary for Lao PDR to establish a clear governance system by enhancing the capacity of departments in charge of CRVS and status of organizations in process. In addition, systematical legislation related to CRVS as an institutional basis should be introduced. Information sharing, formation of information infrastructure, educational training, and format standardization when the system is built based on the policy implementation can be realized.

The policy implications of this research analyzing the policy needs of the partner countries based on the development experience of South Korea's civil registration system is as follows: In the case of Myanmar, comprehensive legislation and regulation for CRVS system related legislation and institutional regulations is needed at once. In addition, system operation such

as organization operation for inter-departmental cooperation, budget and investment plans related to the system, DB establishment as well as the risk management system to minimize the side-effects of identification through national ID number is necessary.

In the case of Indonesia, system management process such as organization management, system related budget and investment plans should be operated based on the CRVS related legislation and regulations. In addition, establishment of a government-wide computing and information agency as well as development of a civil registration service based on mobile was suggested.

In the case of Lao PDR, we suggested extension of communication network, computerization of civil registration information, comprehensive database establishment, and consideration of personal information and information security for each stage as it is in a stage of information system establishment for CRVS system settlement.

Ⅰ. Project Overview

1. Project Background and Objectives

1.1. The Importance of CRVS

The CRVS system records and manages important life events of individuals including birth, death, marriage, divorce and adoption, and it is essential for formulating and operating policies in diverse areas. The government must secure and process on time accurate information on every individual's CRVS. A well-functioning CRVS system registers all births, deaths, marriages, and divorces and issues the relevant certificates (Civil Registration). It compiles and distributes important vital statistics data such as causes of death (Vital Statistics). According to WHO, birth reports of tens of millions of children around the world go unregistered every year, and two-thirds of all deaths are not reported, despite the fact that the importance of CRVS is roundly acknowledged.

The accuracy, quality, and application of CRVS greatly affect the effectiveness of most government policies. Vital statistics such as life expectancy and the mortality rate are essential in formulating policies on health and population. Life expectancy and infant mortality rate are directly used in assessing the quality of life. Statistics on the birth rate and the death rate as well as the latest information on population changes are required for policy on many matters such as health, education, labor, employment, urban planning, economic development, environmental protection, population, and social security. It would not be an exaggeration to say that the success or failure of these policies would depend on how well the vital statistics are analysed and interpreted.

Civil registration, which records and processes information on an individual's birth and death, as well as family information such as marital status, provides information needed for analysing vital statistics. The quality and timeliness of analysis depend on how accurate and timely the

basic information distributed by civil registration is. Information on births and deaths that is not accurate and provided on time cannot be used to generate reliable vital statistics.

1.2. The Objectives of CRVS

The objective of this project is to (1) study in depth Korea's CRVS system as an example of advanced CRVS operation and management, (2) assist partner countries in determining CRVS policy demands, and (3) support establishment of institutions.

Likewise, this project will conduct an in-depth research on the most effective Korean practices that link the Identity Management (IDM) system with the HMIS based on the history of transition and development. Similarly, the development and management experience of relevant systems such as civil registration and HMIS will be analyzed in depth in order to facilitate the establishment and improvement of the CRVS systems in the partner countries: Lao PDR, Indonesia, and Myanmar.

This project would assist the partner countries in reinforcing their CRVS business capacity, increasing the business significance of CRVS and global awareness of success factors, and eventually lead to perpetuation of the CRVS system in these countries.

2. Project Activities and Expected Outcomes

2.1. Project Activities

1) Development of Korea's CRVS System and In-depth Study into Applicable Practices

The development of Korea's CRVS system will be examined; the development plan and transition process of the system will be analyzed; and key best practices, crisis management of Korea's CRVS system, and proposals for improvement and resolution measures will be introduced based on the experience of Korea. Policy implications that could be proposed to the partner countries will also be drawn based on Korea's practices, followed by brief introduction on cost-benefit analysis of the investment in the CRVS system to be made by partner countries.

2) Policy Proposal through Comparative Study of Practices in Partner Countries and Korea

The development of Korea's CRVS system will be examined, followed by analysis of the strengths and weaknesses of the CRVS system in partner countries through analysis of the current status of the CRVS system management system, funding, investment plans, applicable laws and regulations, enforcement of regulations, and cooperation between the government and private organizations. Policy proposals involving systems and necessary technology deemed appropriate for partner nations will be offered for the development of the CRVS systems in partner countries including statistical capacity for long-term management of the system, laws and regulations, CRVS management system, and funding and investment plans.

3) Training of Working-level Staff

Through consultation with the World Bank Group (WBG), the Korea Export/Import Bank (KEXIM), and the ministries in charge in the partner countries, agenda will be established for the training of working-level staff involved in policy-making. Training programs for the working-level staff will be organized and will include activities such as lectures by experts and field trips to appropriate organizations.

2.2. Expected Outcomes

Through collaboration with the WBG, it is expected that the CRVS projects in the Lao PDR, Indonesia, and Myanmar will come up with the policy needs related to the CRVS system and furthermore confirm opportunities to support institution establishment which meets each country's specific needs; and share the experience and knowledge of CRVS with them through case analysis on the civil registration system.

Making full use of the best practices of Korea's civil registration system should do much toward firmly establishing the global network with international organizations such as the UN, the WBG, and the ADB, in turn enabling the participation of those international organizations in the institutional reforms in each area of policy, as well as the establishment and dissemination of the information system.

Feedback from partner countries could be very helpful in resolving issues of contention in Korea such as leakage and abuse of personal information, issuance of electronic identification cards and in rationalizing Korean policy on CRVS.

3. Project Implementation Plan and Major Details

3.1. Project Implementation Plan

The project aims to identify the Critical Success Factors (CSF) and the risk factors of CRVS, formulate strategic management measures, and discover success cases of Korea's civil registration system in order to actively share its best practices, policies, and technology with the partner countries.

Close collaboration will be pursued with appropriate organizations, and mission-oriented tasks will be launched. The list of the appropriate organizations is as follows:

Korea's KSP organizations:

Ministry of Strategy and Finance (MoSF), KEXIM

Agencies in charge of Civil Registration Systems:

Ministry of the Interior, local governments at all levels

Organizations jointly using CRVS data:

policy-making government agencies including the Supreme Court and Statistics Korea

Other appropriate organizations involved with CRVS:

National Information Society Agency, Korea Local Information Research & Development Institute, Korea Statistics Promotion Institute

3.2. Major Details

1) The Development of Korea's CRVS and In-depth Study of Case Studies

Measures for improvement of Korea's CRVS system will be presented after examining the development of the CVRS system and analysing the development plan and transition process of the CRVS system, the core success factors, and crisis management. Implications for the partner countries will be gleaned by sharing Korea's experience. Measures for cost-benefit analysis of investment in the CRVS systems in the partner countries will also be briefly introduced.

2) Policy Proposal for the Development of the Civil Registration and Vital Statistics Systems in Partner Countries

The status of CRVS in the partner countries, namely Myanmar, Indonesia, and Lao PDR will be identified including the historical background of CRVS, management system, relevant budget and investment measures, applicable laws and regulations, enforcement status, analysis of strengths and weaknesses of CRVS, and statistical capacity. Laws and regulations that take into consideration the status and constraints found in partner countries including transferability, CRVS management system, budget, and investment plans, as well as offering of an adequate system and necessary technology will be proposed.

3) Training Programs for the Working-level Staff and Final Briefing Session

Training programs for the working-level staff will address subjects determined through consultation with the WBG, KEXIM, and government ministries of partner countries. Final briefing sessions will be held to share the outcome of the project.

II. Analysis of Target Partner Countries

1. The Environment and Analysis of Current Status of Civil Registration System in Myanmar

1.1. General Overview

1.1.1. General Characteristics

1) Country and Geographical Location

The official name of Myanmar is the Republic of the Union of Myanmar. The nation used to be called Burma, but its name was changed to Myanmar on June 18, 1989. Myanmar is at the southern tip of mainland Southeast Asia, also known as the Indochinese Peninsula, one of the three peninsulas stretching towards the Indian Ocean along with Arabia and India. The nation is bordered to the northwest by Bangladesh and India, to the northeast by China, to the east by Laos, and to the southeast by Thailand.

2) Macroeconomics of Myanmar

Myanmar's GDP is estimated at USD 64.9 billion (2015). Economic liberalization was pursued following anti-corruption campaigns, efforts to stabilize the foreign exchange rate, and reforms to foreign investment laws and the tax system as advocated by President U Thein Sein in 2011. The economic liberalization indeed spurred greater foreign investment, but not as much as expected. In response to human rights violations in Myanmar, the US imposed trade sanctions against Myanmar and the European Union imposed restrictions on foreign investment in Myanmar. The public corporations in Myanmar remain extremely inefficient, and the trade

volume on the black market is considerable. The level of foreign aid remains the lowest in the world. According to a report by the Government Accountability Office (GAO) of the US, Myanmar imposes heavy restrictions on foreign aid programs. These include acts by the government to obstruct or delay humanitarian activities by international organizations and to restrict free movement of international organization personnel within Myanmar. Unemployment in Myanmar is 37%, and 26% of the population is in poverty.

3) Major Industries in Myanmar

The main industry in Myanmar remains agriculture, particularly rice cultivation, which has historically and traditionally been strong. Myanmar is also the world's second largest producer of opium, which is the major input for illegal drugs such as amphetamines, and this makes Myanmar a major threat to neighboring countries including Thailand. In 2012, Thailand's largest clothing manufacturer relocated a plant to Myanmar, and clothing manufacturing has emerged as Myanmar's new key industry.

4) General Status of Myanmar

Table II-1 | General Status of Myanmar

Classification	Details
General Details	• Capital: *Nay Pyi Taw* • Population: 54,572,575 (2016) • Area: 6,770,000 ㎢ • Ethnicity: 135 ethnic groups: Burman (70%), ethnic minority groups (Kachin, Karen, etc. 25%), other groups (Chinese, Indian, etc. 5%) • Religion: Buddhism (89%), others (Christianity, Islam, traditional Chinese religions, Hinduism, etc.) • Language: Burmese (official language), English, Chinese, and Thai (in some regions)
Politics	• Presidential system • President: *U Htin Kyaw* (inaugurated in March 2016)
Economy	• GDP: USD 64.87 billion (2015) • GDP per capita: USD 1,203.51 (2015) • Real economic growth rate: 8.072% (2016) • Trade: Exports: USD 11.14 billion, Imports: USD 16.58 billion (March 2016) • Industries: Agriculture, Services, Energy (natural gas), Manufacturing

Source: Ministry of Foreign Affairs (Korea), http://www.mofa.go.kr/countries/southasia/countries/20110809/1_22955.jsp?menu=m_40_20_20Indicators of Myanmar (MMSIS), http://www.mmsis.gov.mm

5) The Modern History of Myanmar

The Konbaung Dynasty of Myanmar was defeated in the three Anglo-Burmese Wars of 1824, 1852, and 1885 with Britain, and Myanmar was eventually made a protectorate of Britain. In response to a democratization movement that began to spread through the universities in the 1920s as well as demands by Myanmar's leaders to become separate from India, Britain pledged to separate Myanmar from India in 1933. Myanmar was instructed to come up with independent legislation and became officially separated from India in 1937. General Aung San, considered the father of modern Myanmar, and his party went to Tokyo to seek Japanese cooperation. Japan was then at war against the Allied Forces including Britain. Following military training, General Aung San returned to Myanmar with Japanese troops. After a short period of Japanese control over Myanmar, Britain declared all of Myanmar free in May 1945 and Myanmar became an independent state.

U Nu became the first Prime Minister of the Union of Burma after the country gained independence and attempted to make Buddhism its state religion, but he faced severe resistance from non-Buddhists and ethnic minorities. Soon after, liberalization of religion was proclaimed, which led to fierce objections from the Buddhist monks, leading to anti-Islamic rioting. This prompted a strong reaction by the military government led by General Ne Win. General Ne Win eventually took control of Myanmar on March 2, 1962 and proclaimed the Burmese Way to Socialism, launching the era of the nation's international isolation. Thanks to the on-going efforts towards democratization by Aung San Suu Kyi, the daughter of General Aung San, and others, the era of military control in Myanmar later ended and civil government was inaugurated. However, the legal mechanism that enables military influence in Myanmar remains in place.

6) Socio-economic Situation of Myanmar

Myanmar is one of world's most impoverished countries. In addition to eradicating poverty, humanitarian aid is urgently needed in order to rebuild its corrupt and inefficient social infrastructure for health and medicine, agriculture, and nutrition, among others. Even elementary education in Myanmar is still costly, and most of the citizens do not enjoy equal and universal education. Many citizens wish to go on to higher education, but universities in Myanmar are often closed down for lengthy periods of time, and high level of education do not necessarily lead to good jobs. The health and medical system is the world's second worst (Tandon et al., 2000), and the overall health of the population is becoming an issue of concern.

7) Refugee Problems and Racial Issues

The most serious problem facing Myanmar society is the increasing emigration of people who are no longer able to tolerate the on-going internal political, economic, and social upheaval. Refugees, impoverished ethnic minorities, and dissidents are flowing into the neighboring countries, giving rise to another social issue. They sometimes bring diseases such as malaria, tuberculosis, and AIDS; they are sometimes exploited financially or sexually; and sometimes they are implicated in international criminal activities such as drug trafficking. This has also given rise to serious personal security problems in Myanmar.

Many academics are still engaged in heated discussion over the significance of ethnic groups in the history of Myanmar, and nationalism based on ethnicity is rising. Both Myanmar's ruling National League of Democracy (NLD) and the military are Burman-dominated. During the initial stage of the NLD, Aung San Suu Kyi upheld the importance of democracy rather than ethnic minorities, but with the passing of time, the issue of ethnic pluralism and ethnic minorities has assumed greater weight.

1.1.2. Demographics

As of December 2016, Myanmar had a population of 54,572,575, making it the world's 26th most populous nation. Population density is 83 persons per km, and 34.3% of the total population lives in urban areas. The median age in Myanmar is 28.2 years and the average life expectancy at birth is 64.9 years. According to the country's 2014 national census, women accounted for 51.8% of the total population and men accounted for 48.2%. According to World Population Prospects (2011), the average household had 4.4 members and the birth rate was 2.23 based on 2011 figures, relatively lower than other Southeast Asian countries such as Cambodia and Laos.

1) Demographic Characteristics Resulting from Naming Children in Myanmar

Burmese names lack the serial quality of most modern names. Myanmar has no customary patronymic or metronymic system, so people have no surname at all (Mi, 1958; Wikipedia). Burmese names range from one syllable to four syllables. Names of women are usually sequential syllables, such as 'Lin Lin Aung'. Names usually follow honorifics based on family status. Like Western names, western honorifics such as Doctor and General are used, and some honorifics are used as actual names (Steinberg, 2011). Unlike other countries where various details of information can be gleaned from the surname and names of family members,

Myanmar's unique naming system renders determination of a person's basic demographic background very difficult.

1.1.3. Features of Family Relations

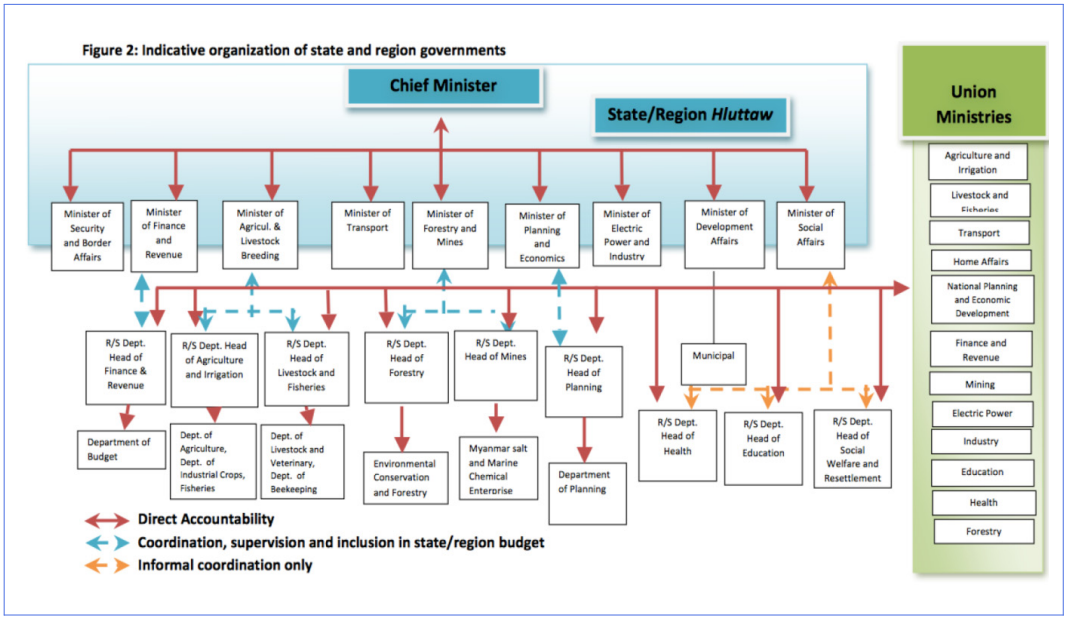
Myanmar has both patriarchal and matriarchal family systems. Men and women already had equal rights more than two thousand years before the women's liberation movement in the West. Women's have had the right to own property in Myanmar since antiquity. They were only exempted from physically arduous labor and were accorded equal treatment in non-manual work. Men were usually responsible for physically challenging work such as hunting, fishing, and logging, while women handled household affairs including cooking, sewing, and child-rearing. The women of Myanmar also handle most family affairs and play a crucial role in family finances. Most of trade in the market is conducted by women. In modern times, women have also received equal treatment in education, and women have become increasingly prominent in education and medicine.

Marriage in Myanmar means that a man and a woman of equal entity combine their strengths to create a new entity. As a result, both paternal and maternal lineages are respected, and children stay closer to their maternal relatives. Women retain their name after marriage instead of assuming the husband's surname, and children do not assume the surname of either their father or mother. There is no gender discrimination in child-rearing, and daughters inherit equally as much property from parents as sons. Parents and family members enjoy the same social and legal rights.

1.1.4. Features of the Government

As regards the legislative branch of the Myanmar government, the National Parliament (Pyidaungdu Hluttaw) comprises an upper house with 224 seats and a lower house with 440 seats. The President, Vice President, and ministers of government ministries are included in the executive branch. Members of the executive branch are prohibited by law from becoming members of the parliament. The President is assisted and supported by two vice presidents, six ministers from the Office of the President, and 32 ministers from other government ministries. The organization of Myanmar's government is as follows:

Figure II-1 | Organization of the Myanmar Government



Source: The Asia Foundation, 2013

The state authority and role of Myanmar's leadership are informed by the traditional state prevalent in Southeast Asia and the Confucianism unique to Northeast Asia. The state authority of Myanmar is based on the conceptual model of families. The government is regarded as assuming the role of parents to its people, and the people are required to be obey the government. The government ministries do not have much autonomy, and the executive branch still tends to be political.

1) Structure of State and Region Governments

Myanmar comprises seven states, seven regions, six self-administered zones or divisions, one union territory encompassing the capital city of Nay Pyi Taw, and neighboring districts. There are state governments and regional governments, each consisting of a unicameral, partially elected state/region hluttaw, an executive led by a chief minister and a cabinet of state/region ministers and state/regional judiciary(The Asia Foundation, 2013).

Table II-2 | Roles and Duties of the State and Region Governments under the Constitution of Myanmar

Relevant Clauses	Detailsl
Article 188	• The Region or State *Hluttaw* shall have the right to enact laws for the entire or any part of the Region or State
Article 249	• The executive power of the Region or State Government extends to the administrative matters over which the Regional or State Hluttaw has power to make laws.
Article 252	• The Region or State Government shall, in accord with the provisions of the Constitution, submit the Region or State Budget Bill based on the annual Union Budget to the Region or State Hluttaw concerned.
Article 254(a)	• The Region or State shall collect taxes and revenues in accord with law and deposit them in the Regional or State fund.
Article 256(a)	• The Region or State Government shall, in carrying out the functions of the Region or State Ministries or their subordinate governmental departments and organizations, manage, guide, supervise, and inspect in accordance with the provisions of the Constitution and the existing laws.
Article 257(b)	• The Region or State Government may, for enabling the performance of the functions to be carried out in accordance with the Union Law for Civil Services, form civil services organizations as necessary.

Source: The Asia Foundation, 2013

Through the plan to join the Open Government Partnership (OGP), the government of Myanmar has recently endeavored to make the government more open and transparent and to encourage the voluntary participation of society in governance. The need for technology for implementing advanced OGP such as social integration, fiscal transparency, and information technology has been cited by various quarters.

Myanmar has diverse diplomatic implications for the neighboring countries. The country is situated between China and India, which are both undergoing rapid economic growth, and the ethnic Chinese and Indians living in Myanmar have enormous financial influence. This is causing the majority of Burman in Myanmar to harbor hostility toward them. As a member of Association of Southeast Asian Nations (ASEAN), Myanmar maintains both positive and negative relations with the advanced countries including the European Union, Japan, China, the US, Australia, and New Zealand. Relations with Middle Eastern countries and India, which stretches towards the Malacca Straits, are significant political and diplomatic factors in policies towards Japan and China.

2) The Military Regime of the Past and the Influence of the Military within the Civilian Government

General Ne Win took control of Myanmar through a coup d'état on March 2, 1962. He entrusted the authority of the Revolutionary Council to the Burma Socialist Programme Party on March 2, 1974 and simultaneously dissolved the Revolutionary Council and reorganized it as the State Council. He became the Chairman and the President. Protests took place throughout Myanmar in opposition to the Ne Win regime. Despite a proposal by the dissident Socialist Programme Party including Aung San Suu Kyi to form an interim union government, the ruling government staged a coup and announced that the military would take over the regime, led by Army Commander, General Saw Maung. Saw Maung proclaimed himself the Chairman and Prime Minister of the State Law and Order Restoration Council (SLORC) organized by the military and emphasized nationalist traits by changing the country name to Myanmar from Burma. He placed Aung San Suu Kyi under house arrest on charges of sedition to restrict her movement. Meanwhile, Myanmar's military government moved the seat of government to Pyinmana, 320 km north of Yangon, and renamed it Nay Pyi Taw. The relocation of the capital is interpreted as a means of liquidating the vestiges of the colonial era and part of the democratization effort to overcome colonialism. Nay Pyi Taw is divided into two areas: the Parliament (Pyithu Hluttaw), which includes a housing complex for the government officials and a housing complex for general employees, and a military district.

The military is granted supreme authority. The Military Commander in Chief is officially under the President at the vice presidential level; has the right to exercise supreme command over the military; and makes decisions independently over the administrative and judiciary matters relating to the military. In the event of division of the union, break-up of the nation, or loss of national sovereignty, the President can declare a state of emergency for one year upon consultation with the National Defense and Security Council of Myanmar, but the Military Commander in Chief has the authority to nominate candidates for the Union Minister for Military Affairs, Union Minister for Home Affairs, and Union Minister for Border Affairs. Myanmar has put in place the legal mechanism under which the influence of the military cannot be excluded even within the civilization government: authority can be shifted to the Military Commander in Chief.

1.2. Family Relationship Registration and Civil Registration System in Myanmar

1.2.1. Household Registration System

Myanmar's CRVS systems consist of the household registration system which includes information of family relation and residence and civil registration system which includes vital statistics information such as birth, death, and so on. First, to register as a member of a household in Myanmar, one must fill out the family member registration paper. This document is called 'Form-66/6'. The front page includes information on the residence, detailed information (household number, floor number, room number), along with the name, birth date, gender, father's name, relationship with the head of the family, occupation, identification number, nationality, and religion of each family member (Refer to Figure II-2). The back page of the document lists details about the building including when the building was built, the main construction materials of the building, and the number of floors and rooms in the building. The document also includes the number of the family members, the name of the investigator, and the identity number and signature (Refer to Figure II-3).

Figure II-2 | Document on Household Registration (Front Page)

Form 66/6

Republic of the Union of Myanmar
Ministry of Labour, Immigration and Population
List of Family Members

Household Number
House Number
Floor Number
Room Number
Building Number
Filling Date

Name of Division _____ City _____ Ward _____ Street
Township _____ Police Office _____ Group of Village _____ Village

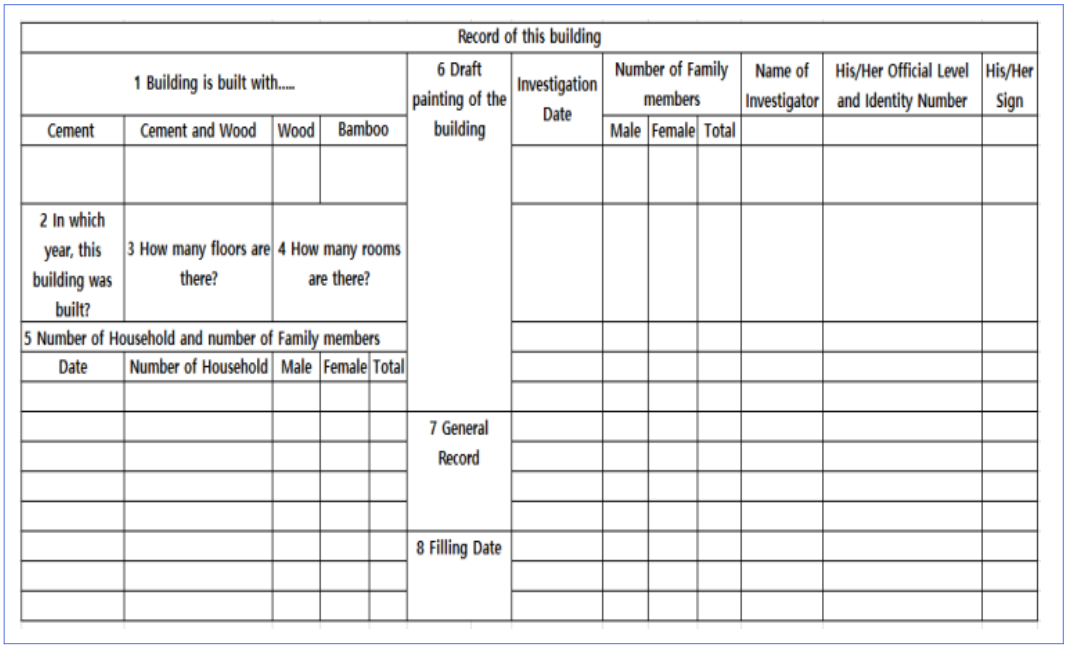
No.	Name	Birth			Sex		Father Name	Relation with the main leader of the family	Job	Identity Number			Nationality	Citizen	Religion	Others
		Date	Month	Year	Male	Femal e				Township Sign	Citizen	Foreigner				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17

To Back

Source: internal data

When there is a change in the number of family members, the head of the family must visit the regional immigration office in person to report such change. In cases that a physical visit is impossible, a member of the family over 18 years of age must visit the regional immigration office and file a notice of entry of appearance (EOA) as attorney or representative.[1)]

Figure II-3 | Document on Household Registration (Back Page)



Record of this building

1 Building is built with.....				6 Draft painting of the building	Investigation Date	Number of Family members			Name of Investigator	His/Her Official Level and Identity Number	His/Her Sign
Cement	Cement and Wood	Wood	Bamboo			Male	Female	Total			
2 In which year, this building was built?	3 How many floors are there?	4 How many rooms are there?									
5 Number of Household and number of Family members											
Date	Number of Household	Male	Female	Total							
					7 General Record						
					8 Filling Date						

Source: internal data

When a family member plans to move away, he or she must obtain a confirmation letter that can certify the residential details from the administration office of the jurisdiction in advance to moving. 'Form-10' serves this purpose. In addition to Form-10, an application filled out by the head of the family and a confirmation letter that verifies that the new address matches the current residence from the administration office are required in the process. If an entire family moves, an application by the head of the family, an original document and a copy of a list of the family members, and a confirmation letter issued by the administrative office that proves the family's previous residential details are required.

The documents required to register an added member of the family are: an application form, Form-10 with previous residential details, a consent from the head of the family, an original copy of Household Residence Registration Certificate that includes the name of the head of

1) The procedures above apply to the following cases described hereinafter in common; moving to another region; registering an added member of the family; registering a new-born infant; removing the name of the deceased from the list of residents; and registering a separation of family and marriage.

the family, and a confirmation letter from the local administrative office. When the number of household members decreases, a consent from the head of the family, an original copy of Household Residence Registration Certificate that includes the name of the head of the family and an applicant, and a confirmation letter from the relevant administrative office in the area where he or she currently resides are required.

To register a new-born infant, the required documents include an application from the head of the family, and an original and a copy of a Household Residence Registration Certificate showing the names of the parents. When there are two separate lists of the household members due to the separation of the parents, the process requires an original and a copy of Household Residence Registration Certificate from both sides. A confirmation letter of concerned ward or village administrator, and Thwe-1-A, and an original and a copy of Birth Certificate are also needed.

If a family member ceases, one of the family members must visit the administration office and request a confirmation letter of certifying death. When the death certificate is submitted to a regional immigration office, the name of the deceased will be officially removed from the list of residents in the region by a clerk in the office. Required documents include: Thwe-2-A, an original and a copy of death certificate, an original and a copy of Household Residence Registration Certificate including the name of the applicant and the deceased family member, and a confirmation letter that proves he or she used to live in the mentioned region from the concerned ward or village administrator.

As for registering a separation of the family, required documents include: consent from the head of the family, an original and a copy of Household Residence Registration Certificate with the names of the applicant and the head of the family, and a confirmation letter from the relevant administrative office in the area where he or she currently resides. As for marriage, he or she should visit the immigration office and remove the previous document on the registration of the family member, and request a registration document with a list of the new family members. An administrative office does not have the right to add or remove a member of the family from the list; only the regional immigration office has the right.

1.2.2. Civil Registration System

CRVS in Myanmar has been developed as follows. Official registration of births and deaths in Myanmar began in 1907, and in accordance with the Villages Act of 1908, the village chief was obliged to register all births and deaths in the village. This system was temporarily suspended during World War II. In 1962, the Vital Statistics Section under the Ministry of Health took charge of vital registration, and of generating vital statistics with birth and death

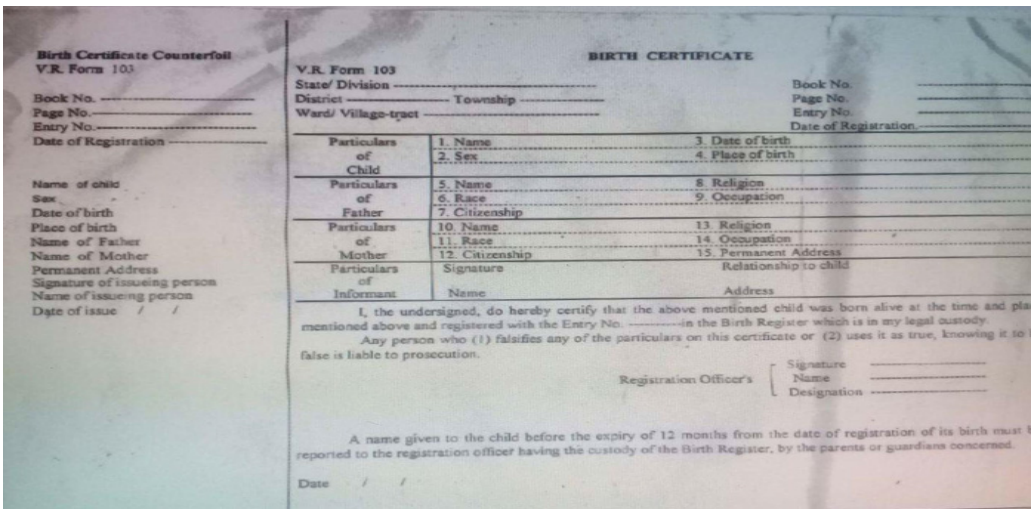
information that was delivered by health administrators from each village and region. Vital statistics were generated following processing of additional information. With the help of the United National Population Fund (UNFPA), Myanmar's Central Statistical Organization conducted sample survey on the degree of completion of VRS in order to ascertain the general status including credibility of the nation's Vital Registration System (VRS). Around 40% of births and 60% of deaths were found to go unreported (CSO Internal Data, 2017). The Myanmar government thus became aware of the need to reinforce the existing VRS in order to ensure the reliability of data on births and deaths (CSO Internal Data, 2017). With support of the United National International Children's Emergency Fund (UNICEF) in 1999, the Modified Vital Registration System (MVRS) format, which superseded the VRS format, was successfully tested at the sample townships (CSO Internal Data, 2017). The CSO managed to expand the implementation of the MVRS throughout the nation during the UNICEF Myanmar Country Program implemented from 2001 to 2005.

According to the 2015 United Nations International Children's Emergency Fund (UNICEF) data, Myanmar's birth registration rate recorded 79% but disparities between the urban and rural areas reached 28%, and the death registration rate stands at only 30%. The Myanmar government has endeavored through cooperation among the government ministries to expand civil registration services. The hardcopy-based system was replaced by a digital archiving system; servers were installed; and the regional registration offices were connected to the internet. However, difficulties due to the existence of old or misplaced data where digital storage systems are not yet established are inevitable.

Myanmar's birth registration system remains paper-based, and reporting of births is mandatory. Three documents are needed to obtain a birth certificate: ① a statement of the birth date of the newborn baby with documentary evidence of where the baby was born; ② a copy of the national identity card of the mother or father; and ③ the national identity card or the resident registration card. These documents are needed to file a report with the Rural/Urban Health Care Center within the corresponding region.

A birth certificate issued in Myanmar is referred to as V.R. Form 103. Items to be entered in the document include the state/division, district, township, ward/village-tract, name, gender, birth date of the child; the place of birth, name, religion, ethnic group, occupation, citizenship of the parents; and the permanent address of the mother. At the bottom of the document is space for writing the name of the informant, the relationship with the child, and the signature and the address. The child whose birth has been registered must be given a name within 12 months of the registration date (recorded in the document), and the name must be reported to the department handling birth registration either by the parents or the guarantor (refer to Figure II- 4).

Figure II-4 | Birth certificate: V.R. Form 103



Birth Certificate Counterfoil
V.R. Form 103

Book No. ----------
Page No. ----------
Entry No. ----------
Date of Registration ----------

Name of child
Sex
Date of birth
Place of birth
Name of Father
Name of Mother
Permanent Address
Signature of issueing person
Name of issueing person
Date of issue / /

BIRTH CERTIFICATE

V.R. Form 103
State/ Division ---------- Township ----------
District ----------
Ward/ Village-tract ----------

Book No. ----------
Page No. ----------
Entry No. ----------
Date of Registration ----------

Particulars of Child	1. Name 2. Sex	3. Date of birth 4. Place of birth
Particulars of Father	5. Name 6. Race 7. Citizenship	8. Religion 9. Occupation
Particulars of Mother	10. Name 11. Race 12. Citizenship	13. Religion 14. Occupation 15. Permanent Address
Particulars of Informant	Signature Name	Relationship to child Address

I, the undersigned, do hereby certify that the above mentioned child was born alive at the time and pla
mentioned above and registered with the Entry No. ----------in the Birth Register which is in my legal custody.
Any person who (1) falsifies any of the particulars on this certificate or (2) uses it as true, knowing it to
false is liable to prosecution.

Registration Officer's
Signature ----------
Name ----------
Designation ----------

A name given to the child before the expiry of 12 months from the date of registration of its birth must
reported to the registration officer having the custody of the Birth Register, by the parents or guardians concerned.

Date / /

Source: internal data

1.2.3. National Scrutiny Card and ID Card (Passport)

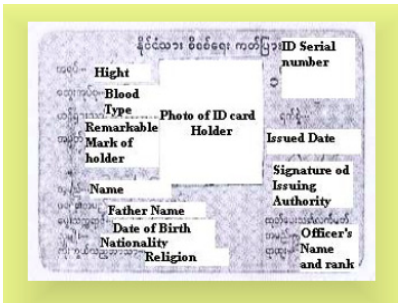
Myanmar's National Scrutiny Card is called "Naing Ngan Thar Sisityay Card" in the Burmese language. It was issued to the citizens residing in Myanmar following the enactment of the Myanmar Citizenship Law on October 15, 1982. As of March 1, 1985, the people of Myanmar were given certain obligations of citizens, which included applying for birth and death certificates, and obtaining the National Security Card when coming of a certain age (Tun, 2007). Just as the Resident Registration Card of Korea, unique codes are given to individuals. For example, for 10/Malama (Naing), "10/Malama" represents information on the region such as the corresponding residing area and the number of townships within the region. The word in brackets is the Burmese language indicating that the person is a citizen of Myanmar.

Procedures for applying for the National Scrutiny Card are based on the Myanmar Citizenship Law. Any citizen who has attained the age of 10 years must register for his or her citizenship card at the residing Township Immigration Office with his or her birth certificate or any document certifying birth, three photos, and household residence registration certificate. When attaining the age of 18 years, the citizen must visit the local Township Immigration Office again, submit the National Scrutiny Card issued when the person was 10 years old, three photos, and household residence registration certificate and receive a new card.

Household residence registration is handled by the Head office of National Registration and Union Citizenship Division and Township Immigration Office where the National Scrutiny Card

was issued. During the residence registration process, the name, gender, age, date of birth, place of birth, nationality, address, and marital status of the resident are collected (Tun, 2007).

Figure II-5 | National Scrutiny Card (front side) - Sample ID Serial No.9/MAYATA (Naing) 100100

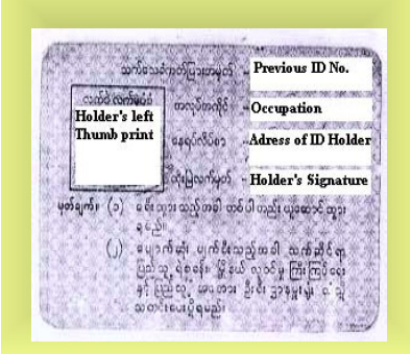


Source: Tun Tun Aung, 2007

The front side of the National Scrutiny Card shows the serial number representing the specific residential district where the card was issued, date of issuance, photo of the ID card holder with official seal, seal and signature of the issuing authority, name of the bearer, name of the father, date of birth, nationality, religion, height, blood type, significant marks, and the holder's signature. (Tun, 2007). (Refer to Figure II-5)

The back side of the card shows the previous identification number of the bearer, occupation, address, and fingerprint of the left thumb. The resident is obliged to carry the ID card at all times when traveling and to report to the police or the immigration office when the card is lost or damaged. When the bearer reaches 18 years of age, the resident must get a new card (Tun, 2007) (refer to Figure II-6).

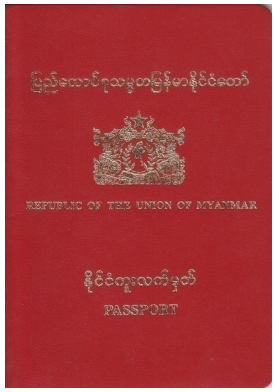
Figure II-6 | National Scrutiny Card (back side)



Source: Tun Tun Aung, 2007

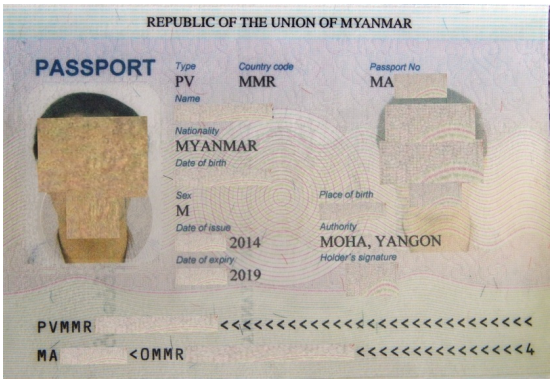
The government of Myanmar issues passports to its citizens to show their nationality. In 2002, Myanmar began issuing electronic passports. A microchip is contained in the passport and help identifying the passport holder's information (BBC, 2002; Wikipedia). There are three types of Myanmar passports, and all are issued by the Ministry of Home Affairs. Government officials are issued with a green passport, diplomats with a blue passport, and all other citizens receive a red passport. Currently, ordinary passport holders can travel to India and Macau with a visa and to Cambodia, Laos, the Maldives, the Philippines, Thailand, and Vietnam without a visa. The Myanmar passport has been changed from a hand-written to machine readable passport in April 2010 (Pacific Asia Travel Association; Mon, 2013; Than, 2013; Hudoyo, 2014; Official Gazette from Department of Foreign Affairs, Philippines Government, 2014; Wikipedia). (Refer to Figures II-7 and II-8).

Figure II-7 | Passport (cover)



Source: Wikipedia, https://en.wikipedia.org/wiki/Burmese_passport

Figure II-8 | Passport (inside)



Source: Wikipedia, https://en.wikipedia.org/wiki/Burmese_passport

1.2.4. Applicable Laws and Institutions on CRVS

The history and status of the legal system related to Myanmar's civil registration system are shown as follows in Table II-3.

Table II-3 | The History and Status of Legal System on Myanmar's Civil Registration System

Applicable Laws	Clauses
The Constitution of the Union of Myanmar (1947)	• (Article 10-2) There will be but one country of citizenship in the Republic of the Union of Myanmar. • (Article 11) Defines citizenship of Myanmar and specifies qualifications to obtain citizenship
The Union Citizenship (Election) Act (1948)	• Qualifications for Myanmar citizenship are presented in detail • (Article 4-2) A person who has resided for at least two generations within the territories of the Republic of the Union of Myanmar and a person and whose parents were born within the territories of the Republic of the Union of Myanmar have established the right to elect for citizenship. • (Article 5) A person whose parents are citizens of Myanmar following the enactment of the Constitution in 1947 has the right to elect for citizenship • (Article 6-1) The Minister may grant citizenship of the Republic of the Union of Myanmar to a person meeting the above qualifications at his discretion
The Residents of Burma Registration Act (1949)	• Mandatory clauses to register as citizens of Myanmar
The Residence of Burma Registration Rules (1951)	• Procedures for collecting data on the people of Myanmar and for making registration are illustrated
Myanmar Citizenship Law (1982)	• In accordance with this Law, procedures to become certified as a citizen of Myanmar began in 1985. A person who has attained the age of ten years must be issued with the Citizenship Scrutiny Card (Naing-3.A) and a person who has attained the age of 18 years must be issued with the Citizenship Scrutiny Card (Naing-6.A).
The Municipal Act (1989)	• The authority to enact legislation in order to register all the births and deaths occurring as prescribed in Chapter 6 (Powers for Sanitary and Other Purposes, Articles 132 and 133) and to keep permanent records of the census • It is mandated that birth and death registration be made and recorded in the census for protective inoculation and to take measures for various sanitation purposes
The Towns Act (1907)	• Set roles of Headmen and managers, as well as regulations for enrolled residents in the designated area to maintain order and safety of the town
The Villages Act (1907)	• Set roles of Headmen, Committee and managers. as well as regulations for enrolled residents in the designated area to maintain order and safety of the village
The City of Rangoon Municipal Act (1922)	• (Article 25-8) One of the obligations of the city of Rangoon is birth and death registration • (Article 235-37) All births and deaths occurring in the city of Rangoon must be recorded and recorded in the census registration
The Development Affairs Act (The Development Committees Law) (1993)	• In order to perform the obligation and function of the Development Committee organized by the Ministry of Home Affairs, a person with appropriate citizenship must be selected in electing members of the Committee.
The Child Law (revised in 1993 and 2007)	• Under Chapter 6 (Rights of a Child, Article 10), children of Myanmar have the right to elect for citizenship of Myanmar
Ward or Village Tract Administration Act (2012)	• (Article 13) The ward or village tract administrator shall carry out the following functions and duties in accord with the relevant laws, rules and procedures. (s) compiling the register of birth and death, move for leaving and move for coming of the family and population list • (Article 19) The persons residing in the ward or village tract shall: inform birth, death and move for leaving and move for coming of the family

Source: The Child Law, 2007; The City of Rangoon Municipal Act, 1922; The Development Committees Law, 1993; The Municipal Act, 1898 (displacementsolutions.org); Country Presentation on CRVS Workshop (25 May 2017)

1.3. The Governance of CRVS System

1.3.1. Supervising Organizations

The CRVS affairs are currently handled by five ministries. The major shortcoming of the system is the absence of a department wholly dedicated to CRVS. For cooperation and management of the five departments, the Coordination Committee on Birth and Death Registration, chaired by the Minister of Health and Sports (MoHS) since 2016, was organized. MoHS handles birth and death registration and issues certificates, and the Ministry of Labor, Immigration and Population, along with the Ministry of Home Affairs, handles national and household registration. The Supreme Court handles records on marriage, divorce, and adoption, and the Ministry of National Planning and Economic Development stores data and publicly announces vital statistics.

Figure II-9 | Myanmar's CRVS Governance Structure

Classification	Household Registration (HR)	National ID	Civil Registration (CR)		Vital Statistics (VS)		
Responsible organizations	MoLIP	MoLIP, DINR	MoHS	Supreme Court	CSO	GAD (under MoHS)	DINR (under MoLIP)
Information processed	Family relations information and domicile information	Resident registration number	Birth / Death	Marriage, divorce, adoption	National statistical data	Statistical birth data	National ID and household list data
Work procedures	The applicant registers in person at the Township Immigration Office	The applicant registers in person at the Township Immigration Office at ten and 18 years of age	For birth, the medical attendant or the village chief registers at the Township Medical Office and receives the birth certificate		Receive data from MoHS	Receive data from MoHS	Receive data from GAD and use it for National ID management and administrative purposes

Figure II-9 represents Myanmar's CRVS governance structure. It shows the overseeing government organizations, information processed by each organization, and performance procedures.

Figure II-10 | CRVS System in Myanmar

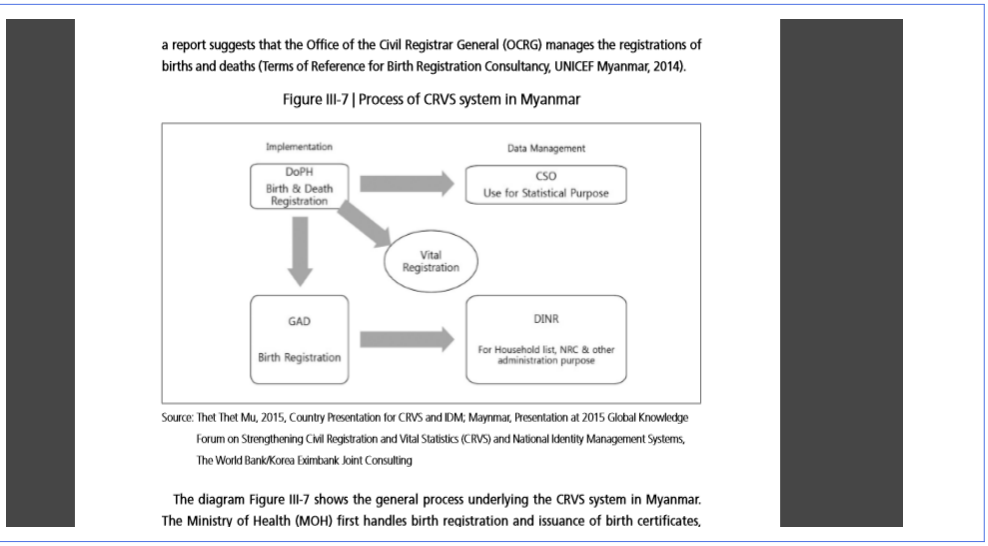

a report suggests that the Office of the Civil Registrar General (OCRG) manages the registrations of births and deaths (Terms of Reference for Birth Registration Consultancy, UNICEF Myanmar, 2014).

Figure III-7 | Process of CRVS system in Myanmar

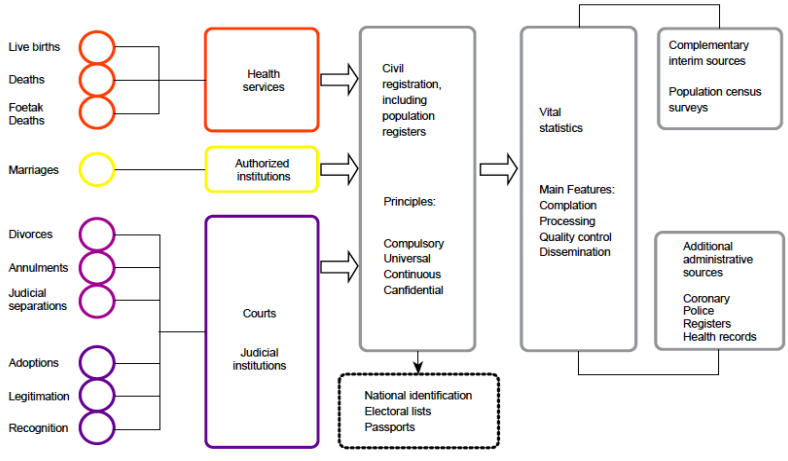
Source: Thet Thet Mu, 2015, Country Presentation for CRVS and IDM; Maynmar, Presentation at 2015 Global Knowledge Forum on Strengthening Civil Registration and Vital Statistics (CRVS) and National Identity Management Systems, The World Bank/Korea Eximbank Joint Consulting

The diagram Figure III-7 shows the general process underlying the CRVS system in Myanmar. The Ministry of Health (MOH) first handles birth registration and issuance of birth certificates,

Source: Thet Thet Mu, 2015 (CRVS Workshop - Country Presentation Myanmar)

Figure II-10 shows the general process underlying the CRVS system in Myanmar. The Ministry of Health and Sports (MoHS, then DoPH) first handles birth registration and issuance of birth certificates, then conveys them to the General Administration Department (GAD) and the Central Statistics Organization (CSO). The CSO manages these data for statistical purposes while the DINR uses the data for generating the National Registration Card (NRC) or handling other administrative tasks.

Figure II-11 | CRVS System and Authorities in charge of CRVS in Myanmar



Source: UNICEF Myanmar, 2015

Figure II-11 shows the processing and authorities in charge of CRVS including birth, death, marriage, and divorce. Government ministries and organizations on public health and medical care including the MoH and the CSO play the major role in birth and death registration. Based on the manual for vital registrations drafted in 2002, the CSO compiles registration forms on birth and death and provides them to the people of Myanmar. Township medical officers from the MoH are in charge of issuing birth certificates and death certificates. Marriage and divorce registrations are handled by the Supreme Court, and vital statistics collected from each department are used for identifying individuals, issuing passports, and as basic data for vital statistics.

At present, Myanmar's civil registration system is operated by two or more government ministries. There is, as a result, a lack of standardization or consolidation with the central government as CRVS is handled by independent statistical divisions in the regional government. The Central Statistical Organization (CSO) of Myanmar stores and manages data on civil registration collected through these government ministries and publishes vital statistics. Major government ministries currently involved in vital statistics include the Ministry of Health and Sports, the General Administration Department, and the Directorate of Immigration and National Registration (CSO internal data, 2017). Due to ambiguity in assignment of responsibilities and role sharing among the ministries, the system fails to function effectively when faced with many different variables. UNICEF has, therefore, proposed that the Civil Registrar General (CRG) be put in charge of overall management of birth and registration in Myanmar (Terms of Reference for Birth Registration Consultancy, UNICEF Myanmar, 2015).

Table II-4 | List for forms for Myanmar's Vital Registration System

Types	Forms (Document number)
Vital Forms (CSO for Statistics)	• Birth Information form (Live-birth/Still-birth) (101, 152) • Death Information form (Cause of death included) (201)
Register Books (For MoHS)	• Birth Register (102) • Death Register (202)
Four Certificates (For informant)	• Birth Certificate (103) • Still-birth Certificate (153) • Death Certificate (203) • Burial Certificate (included for still-birth) (204)

Source: CSO internal data, 2017

Myanmar's Vital Registration System (VRS) collected data using the eight forms as presented in Table II-4. The CSO collects data on birth and death registration, which is then stored in the vital registration database. Those who intend to access the database must have a legitimate

need therefore and must obtain permission to do so. Booklets and CD-ROMs on statistics are periodically published (CSO internal data, 2017).

As part of the effort to expand the application of e-government, the CSO is reinforcing web-based technology and statistical management capacity by sharing more information through the internet (CSO internal data, 2017). Some of the selected statistical data is disclosed to the public and international organizations through the website of the CSO[2].

1.3.2. Cooperation with Relevant Organizations and the Private Sector

1) Inauguration of the Coordination Committee on Birth and Death Registration (2014)

Since 2013, UNICEF Myanmar has been actively cooperating with the Myanmar government to reinforce birth registration. In January 2014, the Coordination Committee on Birth and Death Registration was organized by the President for birth and death registration, which was chaired by Deputy Minister of Labor, Immigration and Population. The main objective of the Coordination Committee, established at the level of the central government, state/region, district, township, ward, and village tract, is to strengthen cooperation among the relevant government ministries and to promote active collaboration between the health and medical ad ministrators and regional government. Through endeavors on the part of the Coordination Committee at the regional level, the birth and death registration coverage in Myanmar is expected to increase (Terms of Reference for Birth Registration Consultancy, UNICEF Myanmar, 2015). Through the Coordination Committee, the Myanmar government distributed guidelines on policies and procedures on updating and maintaining data collection technology, reporting, and relevant statistics. Discussed here were the data on birth and death registration and statistical management technology submitted from the Regional/State Coordination Committee on Birth and Death Registration. Meanwhile, the National CRVS Strategic Plan was formulated in May 2014 and published in the National Forum on Accelerating Birth Registration in Myanmar in July 2014. This became an opportunity to officially advocate and emphasize the need for birth registration at the level of regional governments along with relevant government ministries, CRVS government officials, development partners, media, NGOs, and parliamentary members. In addition, it provided momentum for increasing public participation. October 20 to 24 was designated as Birth Registration Week to raise awareness of CRVS, and electronic platforms were established in 44 townships under the sponsorship of the EU and UNICEF.

2) Official website of Myanmar's Central Statistical Organization: http://www.csostat.gov.mm

2) Formulation of the National Strategy for the Development of Statistics (NSDS)

Accurate and reliable statistics are essential to formulating government and regional plans. The rapid changes in the social environment including the shift towards the market system and the rise in demand for better-quality statistics have rendered Myanmar's Central Statistical Organization more important than ever before. Formulation of development plans and policies as well as establishment of the statistical system on the governmental level for effective monitoring has become extremely important (CSO internal data, 2017). To function effectively in the new environment, the CSO established the National Strategy for the Development of Statistics (NSDS) with technical support from the World Bank and the United Nations Statistics Division (CSO internal data, 2017). The CSO has strived to ensure the quality of statistical data through the NSDS.

The NSDS was implemented in two stages: development of a set of core strategies and development of implementation plans in cooperation with cluster groups (CSO internal data, 2017). A total of eight clusters[3] for the implementation of the NSDS were discussed with the relevant government ministries, and the report for the NSDS was published in September 2015 (CSO internal data, 2017). Core strategies largely address the general objective and direction. More specifically, they address increased efficacy of the decentralized system, reinforcement of the CSO as the statistical organization at the government level, improvement of the relationship between the user and the supplier, and enhancement of the major statistical production program (CSO internal data, 2017). The Myanmar government hopes to establish a more systematic and long-term plan for the development of the statistical system in Myanmar through the NSDS (CSO internal data, 2017).

3) Staff Capacity Building Programs

The quality of staff is essential to producing reliable statistical data. In order to enhance the competence of the staff, Myanmar's Central Statistical Organization offers diverse educational and training programs on statistics and computers. In 2005, statistical experts from the Asia Development Bank organized educational and training sessions on calculating diverse statistical figures including Gini's coefficient using STATA software (CSO internal data, 2017). The CSO also encourages its staff to participate in educational and training programs, workshops, and seminars sponsored by the Myanmar government and international

3) National Account Statistics Cluster, Survey Coordination and Statistical Standard Cluster, Social and Vital Statistics Cluster, Agricultural and Rural Sector Statistics, Energy Statistics Cluster, Environmental Statistics Cluster, Trade and Investment Statistics Cluster, Macroeconomic Monitoring and Financial Statistics Cluster

organizations to gain in-depth understanding of statistical methodology and build knowledge and expertise in the field (CSO internal data, 2017).

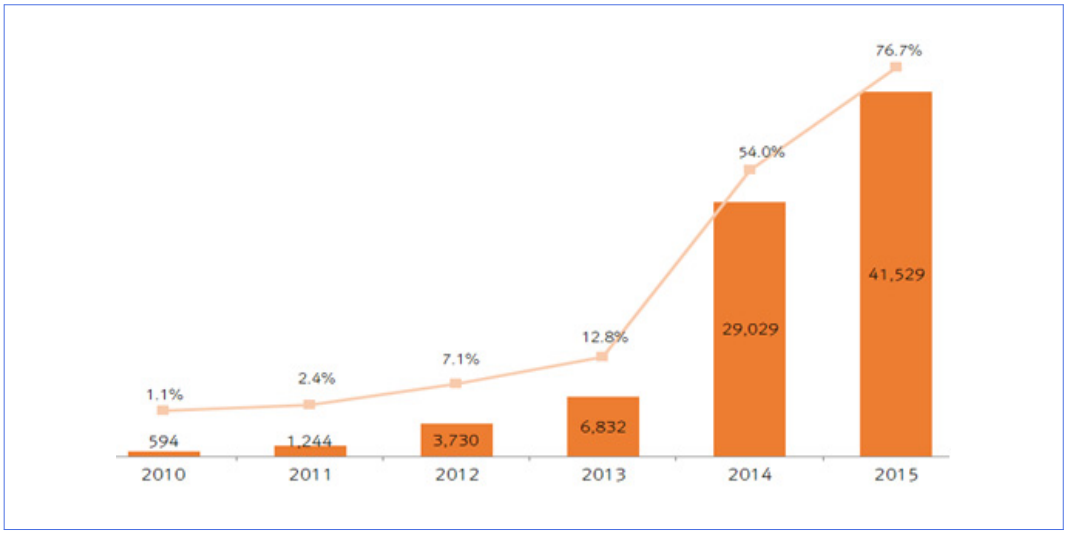
1.4. Information Age in Myanmar

1.4.1. Telecommunications Market

1) Telecommunications Industry

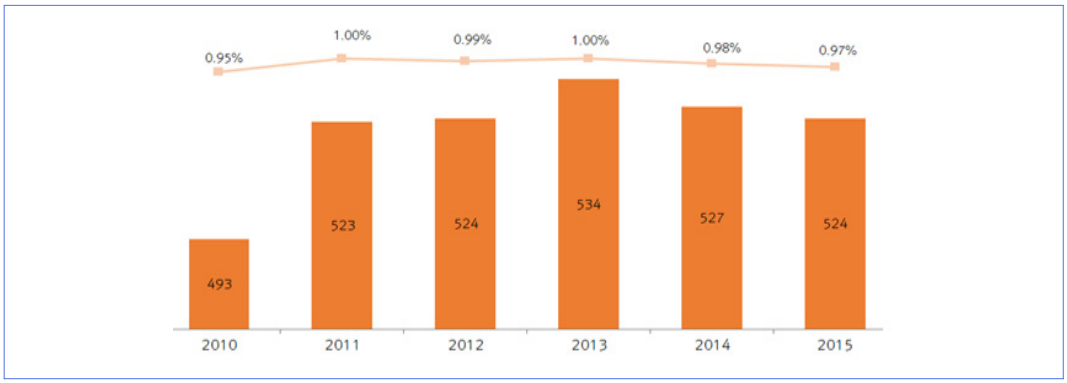
Myanmar's telecommunications industry including the telecommunications network for cellular phones is far behind in its development compared to not only the advanced countries but also to developing countries in Southeast Asia of comparable economic standing. The mobile phone and internet networks are patchy, and network speed is extremely slow. The ratio of persons with access to stable mobile phone networks is low; but the penetration of mobile phones is steadily on the rise; and infrastructure continues to be put in place. The number of mobile and wired telecom subscriber lines and penetration rate in Myanmar are shown in Figure II-12 and Figure II-13, respectively.

Figure II-12 | Mobile Communication Registration and Distribution Rate in Myanmar (one thousand, %)



Source: CONEX, 2016

Figure II-13 | Wire Communication Registration and Distribution Rate in Myanmar (one thousand, %)

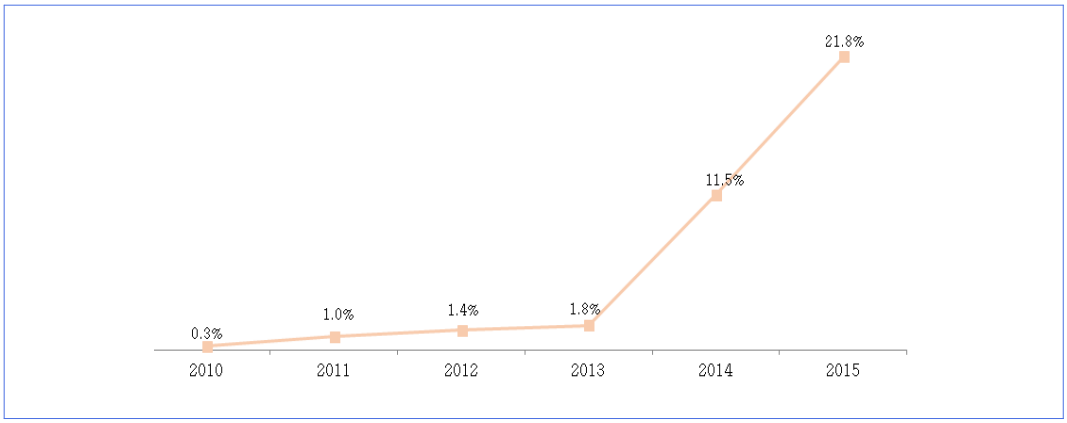


Source: CONEX, 2016

2) Internet Access

Access to internet networks is not widespread relative to the level of Myanmar's international development, but internet cafes and hotels with access to Wi-Fi from remote locations can easily be found. The internet connection speed, however, remains very slow, especially in rural areas. The disparities between urban and rural areas are huge. As a result of bandwidth restriction, the internet connection speed can vary significantly in any one place even on the same day. In the past, the Myanmar government had placed restrictions on websites that can be accessed on the Internet, but such restrictions have recently been eased, and access is possible to most websites and online services. The trend of internet usage rate in Myanmar is shown in Figure II-14.

Figure II-14 | Personal Internet Usage Rate in Myanmar (%)



Source: CONEX, 2016

1.4.2. Status of National ICT Project and Implementation Strategies

1) Applicable Laws

In 1996, the government of Myanmar enacted the Myanmar Computer Science Development Law and actively pushed ahead with policies aimed at developing Information Communication Technology (ICT), and designated it as the priority task for the economic and social development of Myanmar. Through the enactment of this law, three separate associations were integrated into the Myanmar Computer Federation in 1998, and under the initiative of the Federation, the Myanmar ICT Park (MICT) was built. The construction of MICT Park was launched in March 2001. The Myanmar ICT Development Corporation (MICTDC), which oversees the management of MICT Park and corporate assistance, is pushing ahead with various pilot projects planned by the e-National Task Force dedicated to the development of the ICT industry at the government level.

2) Cooperation with Korean Organizations

As part of the Initiative for ASEAN Integration (IAI) devoted to integrating the ASEAN, the Korea International Cooperation Agency (KOICA) formulated the 'Project to Support the Formulation of the Master Plan for the Development of Myanmar Telecommunications' in 2008 for the Ministry of Science and Technology and the Ministry of Communications Posts and Telegraphs, the agencies in charge of overseeing the information projects in Myanmar. This project initiated by KOICA assisted the Korean government in supplying the ICT equipment to MICT Park, the matrix of Myanmar's ICT industry, invited staff to Korea for training, installed equipment, and dispatched experts. These efforts are considered as having played a crucial role in the development of Myanmar's ICT industry. The goal of the project addressed the installation and management of equipment installed in the MICT Park, use of software and development of systems, and technological transfer of network management, among other matters. Following consultation with the MICT Task Force Team regarding local purchase of commodities such as components for equipment, KOICA concluded a contract with local companies for delivery schedules, technological support, and maintenance, and pledged to provide assistance for necessary components and A/S even after the completion of the project. This project has made progress toward the development of telecommunications capacity of ministries concerned with ICT, reinforcement of the system, formulation of the Master Plan as well as on the overall ICT industry, infrastructure, e-government, e-Commerce, e-Education, ICT legal institutional framework, and ICT standardization. The project has also initiated the basic study on computerizing Myanmar's government ministries and achieving e-government, which are the superordinate goals in the ICT project. From a mid-to long-term

perspective, the project has encouraged ripple effects throughout the entire government of Myanmar.

3) Myanmar Government's Determination to Implement the ICT Project

As part of the effort to report and record maternity deaths and to take corresponding measures, the Myanmar government actively introduced the ICT system in order to build a community system. In order to manage electronic data aimed at innovating the ICT technology and encouraging establishment of an electronic health and medical system (e-health), the government has designated specific regions and states and a pilot project district, and introduced the ICT technology on a trial basis. Plans were implemented to expand the application of the ICT technology to all the regions and states around Myanmar by the year 2015.

4) E-platform

In an effort to raise public awareness on the importance of effectively compiling permanent records of births, the Myanmar government established e-platforms in 44 residential districts of Myanmar in 2014. Network servers at the government level to process vital statistics on e-platforms are currently being installed and equipment such as computers and printers is being set up in all the regions, states, districts, and townships in Mon, Chin, and Magwe (Country presentation for Myanmar CRVS, 2015). Thanks to these accomplishments and efforts, the Myanmar government began to consider the possibility of expanding the national birth registration campaign and e-platform on vital statistics registration throughout the entire country. The main advantage of the vital statistics system based on the e-platform is real-time data processing, permanent recording of data, cost reduction in document handling due to the shift from a hardcopy to a digital archiving system, and production of data required for formulation of policies on health and medical care (Country presentation for Myanmar CRVS, 2015).

1.4.3. Level and Current Status of E-government

Table II-5 represents the level of Myanmar's e-government as presented in the United Nations e-Government Survey 2016.

Table II-5 | Level of Myanmar's E-government (year)

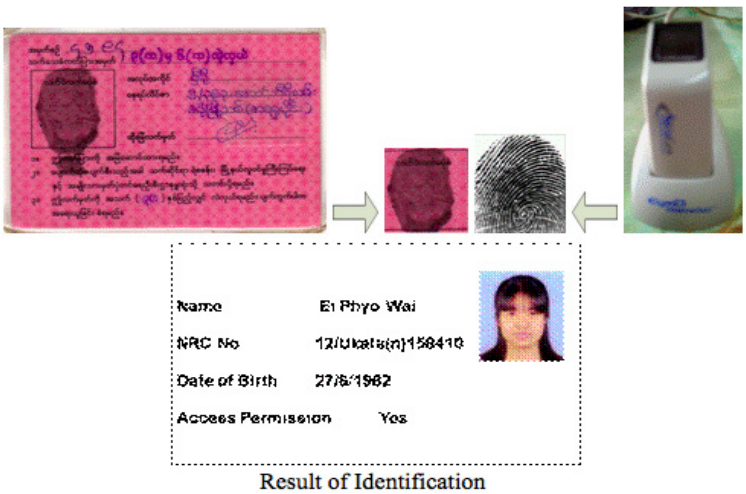
Category	Index	Remarks
E-Government Development Index, (EGDI)	0.2362 (Low EGDI) (standard for low EGDI: under 0.25 out of EGDI scale from 0 to 1)	World's 169th
Online Service Index (OSI)	0.1594 (Low OSI) (standard for low OSI: under 0.25 out of OSI scale from 0 to1)	
Telecommunications Infrastructure Component Index (TII)	0.0655	Ratio of internet using individuals: 2.10
		Usage rate of wireline telephones per 100 residents: 0.98
		Usage rate of cellular phones per 100 residents: 49.47
		Usage rate of wireline broadband per 100 residents: 0.27
		Usage rate of wireless broadband per 100 residents: 1.00
E-Participation Index (EPI)	0.1017	World's 170th

Source: United Nations, 2016

1.4.4. Application of Biometric Identification Technology on the ID Card

Myanmar's National Scrutiny Cards include registered fingerprints, but these prints are unclear and inaccurate at times, making them difficult to use and unreliable. This has led the University of Computer Studies in Yangon to conduct research to develop technology that allows fingerprint recognition and other biometric recognition technologies to be used for identification. Their research aims at developing technologies to accurately recognize and record fingerprints, irises, etc. and to efficiently use immutable biometric information for the purpose of personal identification.

Figure II-15 | Development of Biometric Technoligy through Fingerprint Recognition



Source: University of Computer Science, Yangon, http://www.ucsy.edu.mm/ucsy/humanbio.do

1.5. Statistical Capacity Analysis and Educational & Training Measures for Long-term Management

The Statistical Capacity Indicator evaluated by the World Bank was used for analysis of the statistical capacity for long-term management of Myanmar's Population Registration and Civil Registration systems. Statistical capacity referred to in World Bank's Statistical Capacity Indicator is the capacity to collect, analyze, and disseminate quality data on population and economy. The World Bank's SCI is assessed and published with focus on developing nations. This indicator is used to assess the statistical capacity in developing nations and to formulate strategies for development.

The SCI is determined by the average score of the three criteria. Scores on methodology, data sources, and periodicity and timeliness are calculated, and the overall scores are then calculated as averages and the general score is calculated. These three indicators are once again organized into 25 specific indicators. The SCI assessment indicators are listed in Table II-6. The definition of each indicator is specified in the appendix.

Table II-6 | World Bank's Statistical Capacity indicator

Indicators (a scale of 0 to 100)	Detailed Indicators
Methodology:	• National accounts base year • Consumer price index • Balance of payments • Government finance accounting • Industrial production • External debt reporting • Import and export price indexes • UNESCO reporting • National immunization coverage • Special data dissemination standard
Data Sources:	• Agricultural census • Health survey • Population census • Poverty survey • Vital registration system coverage
Periodicity and Timeliness:	• Access to water • Child immunization • Child malnutrition • Child mortality • Gender equality in education • HIV/AIDS • Income poverty • Maternal health • Per capita GDP growth • Primary completion

Source: World Bank (2012). Note on the Statistical Capacity

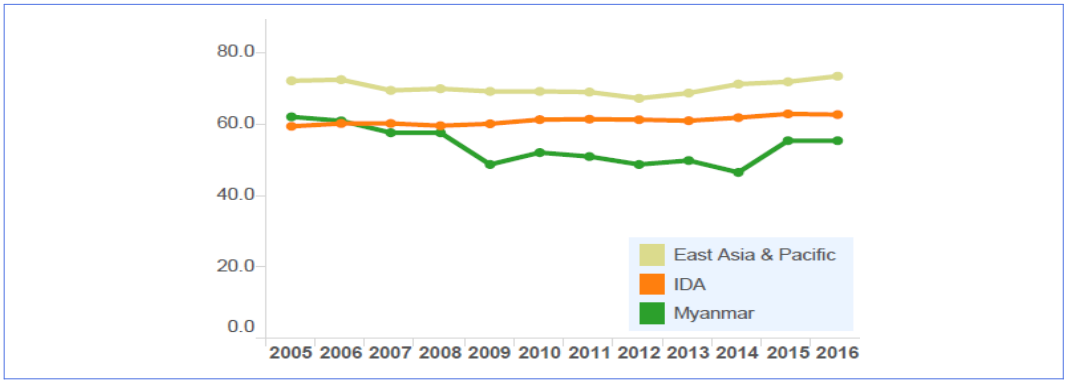
Table II-7 listed below indicates Myanmar's SCI scores, while Figure II-16 represents Indonesia's SCI trend in comparison with the scores of IBRD nations, East Asian countries and Pacific nations participating in the SCI.

Table II-7 | Trend of Myanmar's Statistical Capacity Indicator

Indicators	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Methodology (0 - 100)	50.0	50.0	50.0	50.0	50.0	40.0	40.0	40.0	40.0	50.0	50.0	50.0	50.0
Periodicity and Timeliness (0-100)	-	86.7	83.3	83.3	83.3	76.7	76.7	73.3	76.7	70.0	70.0	66.7	66.7
Data Sources (0-100)	50.0	50.0	50.0	40.0	40.0	30.0	40.0	40.0	30.0	30.0	20.0	50.0	50.0
Statistical Capacity Indicator (overall average)	50.0	50.0	50.0	40.0	40.0	30.0	40.0	40.0	30.0	30.0	20.0	50.0	50.0

Source: World Bank Statistical Capacity Indicator Dashboard.
http://datatopics.worldbank.org/statisticalcapacity/SCIdashboard.aspx

Figure II-16 | Trend of Myanmar's SCI and Comparison with other Nations

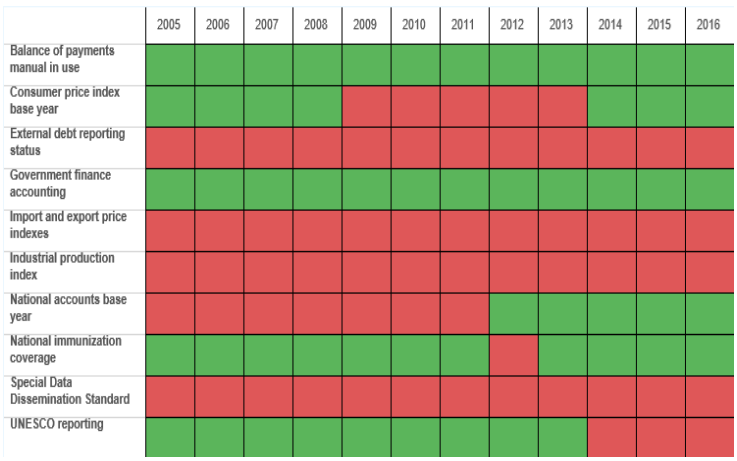


Source: World Bank Statistical Capacity Indicator Dashboard.
http://datatopics.worldbank.org/statisticalcapacity/SCIdashboard.aspx

The average score of Myanmar relating to general statistical capacity declined continuously from 2004 to 2009. It has remained stagnant through 2014. Statistical capacity score rose slightly in 2015, but continued to record lower score than the average of nations in East Asia & Pacific and IABARD. It can thus be confirmed that the general statistical capacity of Myanmar is weak. The data sources, in particular, recorded significantly low figure, and it is only recently that the figure became similar to the average of other nations.

1.5.1. Methodology

Figure II-17 | Myanmar's SCI: Trend of Methodology Scores



* Red indicates 0, while green indicates 1.
Source: World Bank Statistical Capacity Indicator Dashboard.
http://datatopics.worldbank.org/statisticalcapacity/SCIdashboard.aspx

Figure II-17 represents the score on the area of methodology in Myanmar's SCI. All specific indicators are assessed by a score of 0 or 1. With the exception of government finance accounting and national immunization coverage, more than half of the indicators are reporting low scored. Particularly, the areas of external debt reporting status, import and export price indexes, industrial production index, national accounts base year and special data dissemination standard continue to record low scores regardless of accomplishment. UNESCO reporting indicator continued to record good scores until 2014.

1.5.2. Data Sources

Taking a look at the scores of specific indicators corresponding to Data Sources in Figure II-18 population census and vital registration system coverage, which are the indicators related to the key themes of this project, continued to have weak capacity. As regards the vital registration system coverage, a score of 1 is given if the Statistics Division of the UN Department of Economic and Social Information and Policy Analysis deems that the pertinent nation has an adequate registration system for compilation of birth and death statistics, and 0, if not. Based on this evaluation criteria, Myanmar's registration system for vital statistics such as births and deaths has been rated inadequate for the past ten years. There showed gap in capacity for health survey according to each year. Poverty survey showed relatively good scores until 2008 but showed weak capacity since 2009. Accordingly, measures should be sought to secure good capacity on a continuing basis in the future.

Figure II-18 | Myanmar's SCI: Trend of Data Sources Scores

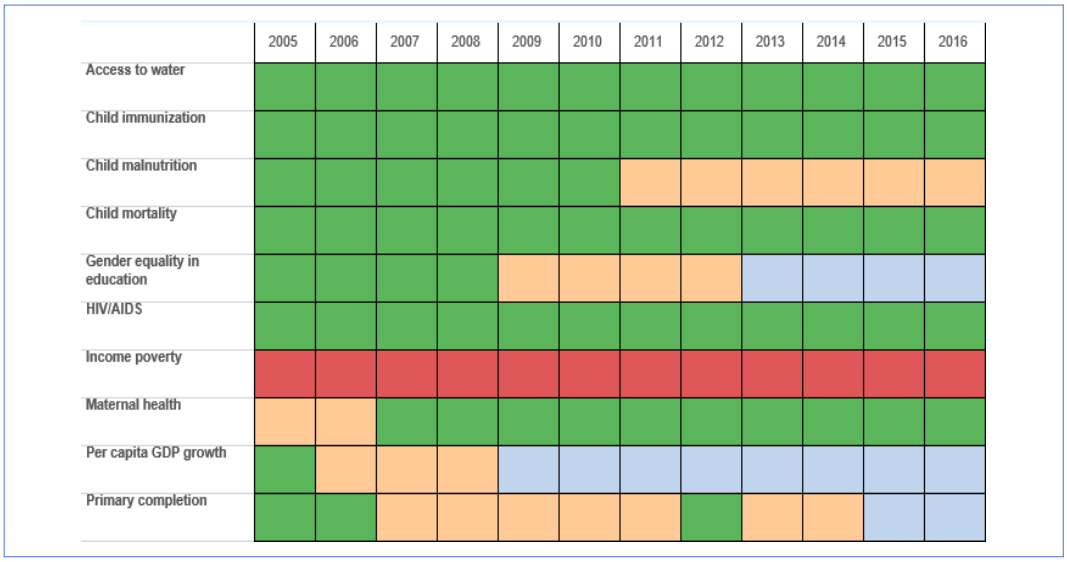


* Red indicates 0, orange 0.6 and green, 1.
Source: World Bank Statistical Capacity Indicator Dashboard.
http://datatopics.worldbank.org/statisticalcapacity/SCIdashboard.aspx

1.5.3. Periodicity and Timeliness

Figure II-19 below represents the trend of Myanmar's scores on Periodicity and Timeliness of statistics. Myanmar is showing relatively good scores in overall indicators, but indicators relating to income and poverty continue to show low scores, and securing periodicity and timeliness remain the most crucial challenge. Unlike the two indicators mentioned previously, this indicator does not have 0, and the lowest score is 0.6. Indicators such as child malnutrition, gender equality in education and primary completion continues to record lower scores with the passing of time.

Figure II-19 | Myanmar's SCI: Trend of Periodicity and Timeliness Scores



*Red indicates 0, grey 0.3, orange 06 and green, 1.
Source: World Bank Statistical Capacity Indicator Dashboard.
http://datatopics.worldbank.org/statisticalcapacity/SCIdashboard.aspx

1.6. Analysis of Strengths and Weaknesses of Myanmar's CRVS

The greatest hindrance of Myanmar's CRVS is that there is neither a comprehensive legal framework to cover the entire CRVS system in Myanmar in general nor any law specifically governing CRVS (2015 KSP CRVS Report). Clauses on CRVS are dispersed in the following laws and are not organically linked: The Residents of Burma Registration Act (1949), Myanmar Citizenship Law (1982), The Municipal Act (1898), The City of Rangoon Municipal Act (1922), and the Child Law (1993, modified in 2007) (2015 KSP CRVS Report).

From an administrative perspective, the lack of a single organization overseeing CRVS tasks administered by numerous government agencies is also an obstacle to the effective functioning of the CRVS system.

As mentioned previously, the statistical capacity index of Myanmar remained at a relatively low level in all the areas of methodology, data sources, periodicity, and timeliness. The average score for the general statistical capacity of Myanmar has also remained weak since 2005 compared with other countries. In response, the Myanmar government has actively strived to reinforce the foundation of its statistical system through cooperation with various international organizations including UNICEF and the EU. E-platforms were established in 44 residential districts of Myanmar in 2014 for the purpose of digitalizing the nation's birth records. The Central Statistics Organization (CSO) established the National Strategy for the Development of Statistics (NSDS) for the development of statistics in Myanmar, which paved the way for long-term planning at the government level for securing more accurate, higher-quality statistical data. The firm determination and active efforts on the part of the government are the starting point for Myanmar to effectively reinforce its operational capacity for statistics.

1.7. Policy proposal and educational & training measures through comparison with Korea

1.7.1. Improvement of the CRVS governance system and Legal Institutions

As mentioned above, many departments are in charge if the work related to CRVS. Improvement of uncertain duties and ambiguous responsibility followed by is one of the important challenges. In order to improve the situation, enacting legislation to cover the CRVS is necessary. Main department in charge should be designated within the legislation and duties and process among departments should be regulated. Regarding this issue, UNICEF have suggested the enactment of the Office of Civil Registration General (OCRG) as the main department of CRVS.

1.7.2. Granting of national ID number upon birth

In Myanmar, there is the personal identification number called the 'national ID number'. It is similar to Korea's resident registration number. However, unlike Korea and other countries where the RRN is issued immediately after birth, the people of Myanmar are given this number for the first time when they turn ten years of age, and it is re-issued when they turn 18

years of age. The institutional vacuum in time from birth to age ten renders difficult the determination of the status of children in Myanmar and the guarantee of their fundamental rights. Measures could be considered so that the national ID number is given upon birth registration to enable tracking and managing of residents from birth.

1.7.3. Interface among the organizations building key database

Many developing countries experience difficulty in consolidating and managing personal information gathering through registration affairs, and this hinders their ability to make effective policy decisions and implement policy. There is a need to summarize and build a key database of the scattered information collected through the Ministry of Labor, Immigration and Population (household registration: family information, residential information, national ID registration); the Ministry of Health (birth/death), and the Supreme Court (marriage/divorce). To this end, the most essential information needs to be identified among the data on civil registration and put into a digital database. Of course, efforts to modify and update the information should be made on an on-going basis even following the establishment of the key database. In the long-term, information should be shared among the government ministries and between central and local governments through the internet. Standardization of the system should also be considered from the initial stage of design for interoperability of the system.

1.7.4. Efforts to reinforce civil registration information coverage

One of the biggest challenges facing the government of Myanmar is the people's low level of understanding of the need for civil registration. An obligatory survey like the one Korea administered in the past could be an effective means of improving the coverage of key civil registration data, but due to the ethnic and regional peculiarities of Myanmar, it would realistically be extremely difficult to administer. On-going campaigns should thus be staged to raise the awareness of the public with the help of international agencies. A survey should be conducted for the Burmese people, who account for the majority of Myanmar's population, and the survey could then be gradually expanded to other ethnic groups. However, the process must be sufficiently discussed in advance to prevent it from leading to another conflict.

1.7.5. Establishment of integrated foundation for regional offices

Different regional offices in Myanmar collect information on civil registration, including the township immigration offices and township medical centers. The data they collect sometimes

overlaps. If a foundation that can integrate these regional offices can be established, civil registration affairs could be managed in a more systematic manner by the states and regions, districts, townships, wards, and village tracts.

1.7.6. Reinforcement of personnel for computerization and operation of the system

The task of building and computerizing the key database mentioned previously cannot be achieved without human resources able to operate the system. The CSO has presented as its main objective the reinforcement of Myanmar's statistical system and now considers the training of its staff on basic statistical and software programs (authentication program used in statistics including STATA, SPSS, CSPro, and GMS) to be extremely important (internal data, CSO, 2017). In addition to building the competency of individual organizations to handle statistical matters, there is also the need to strengthen competence to build and operate the CRVS system.

2. The Environment and Analysis of Current Status of Civil Registration System in Indonesia

2.1. The Environment and Analysis of Current Status of Civil Registration System in Indonesia

2.1.1. General Overview

Indonesia is a democratic republic with a presidential system located in Southeast Asia. The nation is comprised of 17,504 islands, of which some 6,000 are inhabited (Hwang Yoon-won, et al. 2013). Indonesia is divided into 34 provinces, largely on five islands. It has a combined population of approximately 252,518,880, making it the world's fourth most populous country. Some 12 million people reside in the capital city of Jakarta.

Indonesia has over 360 native ethnic groups, the largest being the Javanese, who account for 45% of the population, followed by Sundanese at 13.6%. Its official language is Indonesian, also known as Bahasa Indonesia, but the most widely used language is Javanese, used by some 40% of the population. There are over 250 local languages and dialects in Indonesia. The majority of people in Indonesia are Muslim.

Table II-8 | Overview of Indonesia

Classification	Details
Country Name	• Republic of Indonesia
Area	• 1.9 million ㎢ (world's 15th largest nation, nine times the size of the Korean peninsula)
Climate	• Tropical monsoon climate, high temperature, windless, high humidity
Capital City	• Jakarta (population of about 1 2 million, land area of 661 ㎢ - Seoul's land area is 605 ㎢
Population	• About 252,518,880 (world's fourth highest)
Major Cities	• Java Island: *Jakarta, Surabaya, Bandung, Yogyakarta, Semarang* • Sumatra Island: *Medan, Palembang, Padang* • Kalimantan Island: *Pontianak* • Sulawesi Island: *Makassar* • Bali Island: *Denpasar*
Administrative Districts	• 34 provinces • 510 districts/cities • 6,651 sub-districts • 77,126 villages • 842,850 census blocks • 17,504 islands • Inhabited by about 13,000 people
Ethnic Groups	• Over 360 native ethnic groups including Javanese (45%), Sundanese (13.6%), Acehnese, Batak, and Balinese
Language	• Official language: Indonesian (Bahasa Indonesia) • Some 250 local languages and dialects spoken
Religion	• Islam (86%), Christianity (6%), Catholicism (3%), Buddhism (2%), Hindu (1.8%)
Foundation Day	• August 17, 1945
Government System	• Presidential system
Head of State	• President *Joko Widodo:* in office from October 2014 to October 2019 (five-year term)

Source: KOTRA, 2015, (Indonesian Bureau of Central Statistics, Indonesian government); 2015 CRVS Conference Country Presentation, 2015

The incumbent president of Indonesia is President *Joko Widodo,* who took office in October of 2014. Born to a poor carpenter, he is the first leader elected outside Indonesia's narrow political and military elite. President Jokowi began his tenure with high expectations under his call for sweeping societal reform, a clean image, and 'people friendly' policies. He is

presently facing criticism as a result of anaemic economic growth, passivity in pursuing reform, and failure to provide a clear vision during his two years in office[4]. Indonesia's economy expanded at a high annual rate of 6% during the term of his predecessor, former President *Susilo Bambang* Yudhoyono, who was in office from October 20, 2009 to October 20, 2014. Since President *Jokowi* took office, the economy has stagnated. During his presidential election, Jokowi promised that the country would reach economic growth of 7%, but in 2015, the economy recorded only 4.79%. His approval rating is falling, and he faces criticism for failing to show progress in his pledge to make sweeping reform to the bureaucracy and inefficient government organizations and for failing to combat corruption.

2.1.2. Political and Administrative Systems

The 1945 Constitution of Indonesia provided for a separation of executive, legislative and judicial powers. Since 2004, the president has been elected for a five-year term, as are the legislators. The government system is presidential with strong parliamentary characteristics.

The local government system was launched in Indonesia in 2001 with the enforcement of the Decentralization Act. Before the fall of President Suharto in 1998, Indonesia was a very centralized nation. Following the second revision of the Constitution in 200, however, the role between the central government and the local government became distinguished, and wider autonomy was granted to the local government (Choi Chol, 2015). The delegates of the local government is elected by the local residents and *Dewen Perwakilan Rakyat Daerah (DPRD),* which is the representative local government, rule the region. The representative of the Executive Division of the local government is the governor appointed by the government. The governor exercises sovereignty over the region (Hwang, Y. W., et al. 2013).

Table II-9 | Indonesia's Governance System

Government Level	Ruler	Title
Nation (Negara)	President	Presiden
Province (propinsi)	Governor	Gubernur
Regency/City (Kabupaten/Kota)	Regent/Mayor	Bupati/Walikotamadya
District (Kecamatan)	Sub-district Head	Camat
Village (Desa/Kelurahan)	Village Chief	Kapala desa/lurah

Source: Hwang, Y. W. et al., 2013; Wikipedia. Subdivisions of Indonesia. https://en.wikipedia.org/wiki/Subdivisions_of_Indonesia

4) http://time.com/4416354/indonesia-joko-jokowi-widodo-terrorism-lgbt-economy/

Indonesia, a highly decentralized nation, has the administrative system as represented in Table II-9. The smallest unit is the village *(Desa or Kelurahan),* but within the village exist *Rukun Tetangga,* a community group, and *Rukun Warga,* a neighborhood group. These are the lowest administrative organizations that are closely related to the actual lives of residents. In submitting or being issued with various documentations including birth and death certificates, letters drawn up by the residents are required.

Indonesia is a democratic republic with a presidential, multi-party system. The judiciary is independent of the executive and the legislature. Following the inauguration of the local autonomous governments, democratization is being expanded, but corruption, collusion, and nepotism remain significant problems *(Korupsi, Kolusi, Nespotisme: KKN).* Notably, there are bureaucrats referred to as the middlemen who serve as power brokers behind the throne. They stymie efforts to combat corruption (Hwang, Y. W. et al., 2013).

2.1.3. Economy

Indonesia's GDP per capita stood at USD 3,377 as of 2015. Major industries include mining, agriculture, textiles, automobiles, and steel. Exports in 2015 totalled USD 1,502 and imports USD 1,427. Major export products include coal, crude oil, gas, rubber, metallic minerals, and shoes.

Table II-10 | Indonesia's Economy

Classification	Details
GDP	USD888.5 billion (final value for 2014 and 2015 unpublished)
Economic Growth Rate	4.79% (2015)
GDP Per Capita	USD 3,377 (2015)
Unemployment Rate	6.2% (2015)
Inflation Rate	3.35% (2015)
Currency Unit	Rupiah (Rp)
Exchange Rate	USD1=Rp 13,794 (2015)
Foreign Reserves	USD105.9 billion (2015)
Industrial Structure	Mining (coal, petroleum, gas), agriculture (rubber, palm oil), manufacturing (textiles, automobiles, steel)
Trade Volume	USD292.9 billion (export: USD150.2 billion, import: USD142.7 billion) (2015)
Traded Goods	Exports: coal, crude oil, gas, rubber, metallic minerals, textiles, shoes, paper products Import: machinery, automobiles, electronic products for industrial and household use, organic chemical products

Source: KOTRA (Indonesian Bureau of Central Statistics, Indonesian government)

Under the initiative of the Ministry of National Development Planning (Bappenas), Indonesia has established and implemented short, medium, and long-term development strategies. The basic objective of this national development plan is to 'build a developed and industrialized nation through sustainable economic growth and development'. The vision and mission of the National Long-term Development Plan RPJPN 2005-2025 is to establish a country that is developed and self-reliant, just and democratic, and peaceful and united. To this end, a five-year medium-term development plan (RPJMN 2015-2019) was drawn up that sets forth nine priority agendas for development.[5)]

2.1.4. Demographics

Table II-11 | Demographics

Items	Details
Population Increase Rate	1.49%
Birth Rate	26.89 per 1,000 persons
Death Rate	6.9 per 1,000 persons
Infant Mortality Rate	34 per 1,000 newborns
Average Life Expectancy (total)	70.9 years
Average Life Expectancy (male)	68.26 years
Average Life Expectancy (female)	73.38 years
Poverty Rate	Approximately 11.2%
Urban Population (%)	53.7 (2015)
Increase Rate of Urban Population (annual average %)	2.7 (2010-2015)
Foreign Migrants (refugees included) (% of GDP)	0.1 (2015)
Total Expenditures in Health and Medical Care (% of GDP)	2.9 (2014)
Number of Medical Doctors per 1,000 Persons	0.2 (2013)
Public Expenditure on Education (% of GDP)	3.3 (2014)
Registration Rate of Primary Education (f/m per 100 persons)	104.5/107.0 (2014)
Registration Rate of Secondary Education (f/m per 100 persons)	82.2/82.8 (2014)
Registration Rate of Tertiary Education (f/m per 100 persons)	32.8/29.4 (2014)
Ratio of Female Members of Parliament (5)	17.1 (2016)
Population Increase Rate	1.49%

Source: KOTRA (Indonesian Bureau of Central Statistics, Indonesian government); 2015 CRVS Conference Country Presentation, 2015; UN country profile

5) (1) to strengthen maritime sovereignty, (2) to establish good governance that is clean and democratic, (3) to build Indonesia from borders by developing areas and villages, (4) to root out corruption and reinforce law enforcement, (5) to improve the standard of living through Smart Indonesia, Healthy Indonesia, and Prosperous Indonesia programs, (6) to improve the people's productivity and competitiveness in the international market, (7) to realize economic independence by accelerating development of domestic economic strategic sectors, (8) to conduct national character resolution by reinforcing history education and encouraging patriotism through public education reform, (9) to increase societal diversity through diversity education and communication among the people

Indonesia's population is expanding at 1.49% annually. Its birth rate and death rate are 26.89 and 6.9 persons per 1,000 persons. Its infant mortality rate is high at 34 per 1,000 new-borns. The average life expectancy is 70.9 years, and the poverty rate is approximately 11.2%. (internal data: Country Presentation for Strengthening Civil Registration and Vital Statistics (CRVS) and National Identity Management Systems: Myanmar, 2015). Indicators on urban population, ratio of foreign migrants, health, and education are listed below.

Indonesia is home to numerous ethnic groups and is striving to unite its people into a single nation. Pancasila is a portmanteau of Panca, which means five, and sila, which means principle, and it represents the five philosophical founding principles of Indonesia (Hwang, Y. W. et al., 2013).

Table II-12 | The Five Principles of Pancasila

Items	Details
Belief in the Absoluteness of God	• The principle calls for belief in the 'One and Only God,' but this is not mandatory • In addition to Islam, Catholicism and Protestantism (which uphold belief in the One and only God), Buddhism, Hinduism, and Confucianism are also recognized religions • Persons believing in religions other than the official religions are regarded as atheists, and adhering to an official religion is obligatory • It is declared in the Constitution that faith in one's religion cannot be compelled, and religious pluralism is encouraged
Just and Civilized Humanity	• This principle declares that all human beings are equal regardless of ethnicity, family background, religion, or social status and requires that human beings be treated with dignity as God's creatures. • This principle restrains tribalism
The Unity of Indonesia	• This principle embodies the concept of nationalism and emphasizes the spirit of making sacrifices for one's nation at any time • It emphasizes the importance of identity as a citizen of Indonesia and prohibits claims for separatism and independence
Democracy Guided by the Inner Wisdom in the Unanimity Arising out of Deliberations among Representatives	• This implies that all Indonesians have equal rights and obligations as members of the nation, and emphasizes the need to uphold the nation and society when exercising these rights and obligations • All critical decisions must be made by popular consensus
Social Justice for all the People of Indonesia	• Equitable distribution of welfare to the entire population: emphasizes that the wealth of Indonesia should be utilized for the people • Behaviour that hurts other people or extravagance should be avoided

Source: Hwang, Y. W. et al., 2013

With regard to family relations, there is the tradition of bilateral kinship in Indonesian society, especially in Java, which does not place importance on paternal or maternal bloodline alone, but both. As a result, the surname of parents does not necessarily have to be included when naming a child. Most Indonesian people do not have surnames, and their names are just one or more words (Kim, H. J., 2012).

2.2. The History of Indonesia's Family Card and Civil Registration System

2.2.1. The history of Indonesia's Family Card

Indonesia's Family Relations Register existed in the form of Family Card (Kartu Keluarge in Indonesian language). The origin and history of the Family Card does not remain in clear records but during the reign of President Sukarno (1945-1966), the Family Card recorded the births and deaths in the household. It was also the most widely used official identification documentation (Strassler, 2010).

Figure II-20 | Indonesia's Family Card (front/back)



Source: The official website of the city of Jakarta
http://www.jakarta.go.id/v2/news/2009/11/Kartu-Keluarga-KK#.WNE6GfnyhPY

2.2.2. The History of Indonesia's Civil Registration System

Indonesia's Population Registration system was established in 1815 by Great Britain to take the census in every village and monitor changes in population due to births, deaths, or relocation. This was the basic system until Indonesia came under colonial rule by the Netherlands. The Dutch government attempted to improve the system by upgrading its registration process, reshuffling the organization for civil registration, and data processing, and the overall population registration system indeed improved. In 1929, the government of the Netherlands introduced a new system for the registration of vital events, which was expanded throughout Indonesia. Vital events were recorded by the village headmen, who made inputs of detailed information on the pertinent vital events as well as information on parents and ancestors. This system was an important mechanism of colonial rule, and it accurately recorded the vital events of the Europeans as well as local residents in Indonesia. A unique registration process was used for each ethnic group and religion.

Individuals were categorized as ethnic Indonesians, Europeans, Chinese, or Christians (ODI, 2016). Indonesia became independent of the Netherlands in 1945, but old laws pertaining to the population registration system remained in place until the year 2000.

The Indonesian Community Party (PKI) staged a coup in September 1965, during the term of President Suharno. It was countered by then Major General Suharto of the Indonesian Army, who subsequently led an anti-communist purge. In order to track down communists, the Indonesian government required all citizens to carry an identification card known as the KTP (Kartu Tanda Penduduk) (Strassler, 2010). All communists at the time were reported to the government, and their KTP carried a special mark. People who were incarcerated for political reasons were given a special doe on their KTP. Some records state that it was mandatory for residents of Jakarta to carry the family card and the personal ID card in 1968. Before that time, the KK, which was the family register, was used as proof of identification instead of the KTP. Possession of the KK was not mandatory, but it was during this period that the use of ID cards was first expanded to distinguish certain people for political purposes.

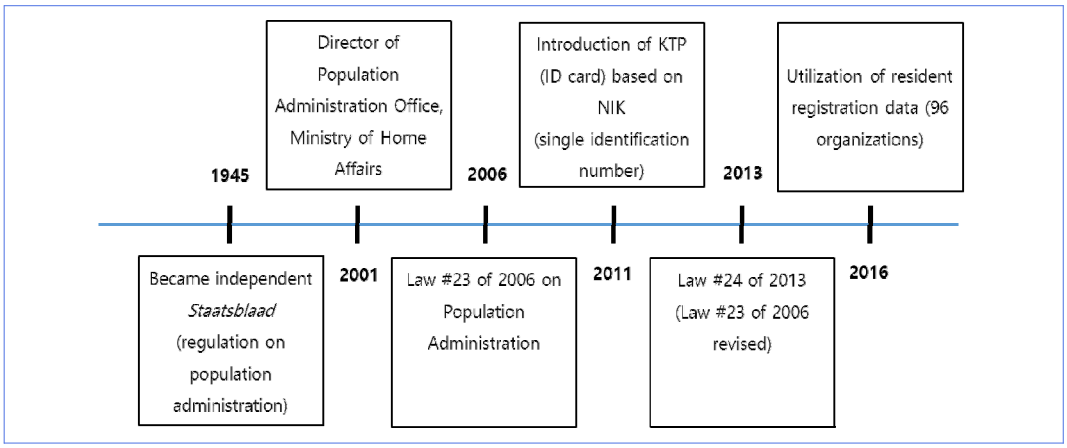
Problems of the outdated system were continually cited during this period. After President Suharto took office in 1999, the new government passed Law No. 39 on Human Rights, which became the foundation for human rights and the relevant legal institutions in Indonesia. This law guarantees the rights of all citizens in diverse respects.

In the early 2000s, government organizations including the National Commission on Human Rights, the Indonesian Child Protection Commission, the Ministry of Women's Empowerment and Child Protection, the Ministry of Law and Child Protection, the Ministry of Social Affairs and National Population, and the Family Planning Agency, as well as international organizations including UNICEF, Plan International, and the German Corporation for International Cooperation (Deutsche Gesellschaft fur International Zusammenarbeit) established the Consortium on Civil Registration. In 2005, this Consortium proposed a draft bill on human rights protection for civil registration to the Indonesian Ministry of Home Affairs. The Ministry of Home Affairs also drew up a separate draft bill on civil registration, and the two bills had differing perspectives. The Consortium regarded civil registration quite differently from mere population administration and tried to link it to human rights, viewing it as an issue of securing a citizen's identity and legal status. The draft bill drawn up by the Ministry of Home Affairs approached it as public legal issue, which stipulated the registration of information on births and deaths to the government. The Consortium called for the separate legislation of these two bills, but the two bills were eventually merged, and Law No. 23 Year 2006 on Population Administration was introduced. This legislation emphasized regulation from an administrative perspective rather than improving the protection of the human rights and legal status of citizens. Law No. 24 Year 2013 on Population Administration, which was revised in 2013, is still in effect for civil registration (ODI, 2016).

It was in 2009 that the electronic civil registration system was introduced in Indonesia. Back then, four districts introduced the system on a trial basis, and it was applied nationwide in 2011. Prior to the introduction of this electronic system, the resident identification system was not standardized across each district. Since the identification card was not recognized in every part of the country, people commonly held four or five identification cards. Not only did a different card need to be used in each region, but people would need to have a new one issued whenever they relocated. Following the revision of the legal system, an identification card that could be used nationwide was finally introduced. The new ID card has an embedded chip that contains personal information, unlike the previous paper ID, and is called e-KTP. It is stipulated in Law No. 24 Year 2013. According to this law, a person may not possess more than one e-KTP, and whereas the KTP in the past had to be renewed every five years, the new card, when issued, is valid for life.

The Ministry of Internal Affairs signed a Memorandum of Understanding with every government ministry in 2016 to enable 96 public organizations to use Resident Registration (RR) data. RR data can be used for various purposes such as registration for customs users and registration for enterprises paying consumption taxes through the use of the individual identification number (NIK) or e-KTP. The data can also be used in administering laws on customs or consumer materials. Based on the population data on NIK, demographic data can be used for customs users and enterprisers who are exempted from consumption taxes in the customs and consumption tax registration system. Plans are also underway to use the RR data for profiling foreign citizens entering and leaving the country[6].

Figure II-21 | Chronology on Indonesia's RR



Source: Indonesian Ministry of Home Affairs (internal paper)

6) MoF and MoHA signed MoU of Population Data Utilization (http://www.kemenkeu.go.id/en/Berita/mof-and-moha-signed-mou-population-data-utilization)

Figure II-22 | Indonesia's Resident Identification Card (E-KTP)



Source: http://en.tempo.co/read/news/2014/06/30/057589058/Thousands-of-Jakarta-Citizens-Yet-to-Receive-e-KTP / http://www.biomorf.co.id/ektp.html

2.3. Applicable Laws and Institutions on CRVS

2.3.1. Applicable Laws on Family Card and CRVS

1) Law No. 24 Year 2014 on Population Administration

In 2013, Law No. 23 Year 2006 on Population Administration was revised as Law No. 24 Year 2013. The revised law stipulates that 'as a system, Population Administration for Residents is expected to fulfill the resident's administrative rights in public services and to provide protection with respect to the issuance of Population Documents without any discriminatory treatment through active participation of the government and regional governments.'

Law No. 24 Year 2013 sets forth regulations for the organizations overseeing the civil registration tasks, birth registration, death registration, identification of children, definition and utilization of personal data, matters concerning the issuance and maintenance of the electronic identification card (e-KTP), issuance of various certificates, management of civil registration data and the budget.

Under this law, population Administration basically involves Population Registration and Civil Registration. Population Registration is the recording of individuals' biological data, change in domicile, acquisition of permanent residency, and any other activity that requires the issuance or change of the Family Card, the Single Identity Number (NIK), or the individual ID card (KTP). Civil Registration refers to registering of changes in vital statistics such as birth, death, marriage, divorce, confirmation of children, adoption, and changes in name or nationality. In other words, Civil Registration handles changes in vital statistics and Population Registration involves comprehensive management of information on the residential status and residence in addition to vital statistics.

The Family Card (KK) in Law No 24 Year 2013 is defined as the 'family's identity card' that includes information on the status of individual household members, composition of household and relationship among the household members. The birth of a child must be reported to the regional office within 60 days of birth, and the official in charge must record the birth at the civil registration office and issue the birth certificate (Article 27). A death must be reported to the regional office within 30 days, and the official in charge must record the death and issue the death certificate. Under the law, registration of birth is the responsibility of parents while registration of death is the responsibility of the village chief (Article 44).

Article 63 is the clause on e-KTP, the electronic resident card. E-KTP is issued to the Indonesian citizens and foreigners who have acquired permanent stay status. E-KTP carries NIK, the Single Identity Number, name, date of birth, place of birth, gender, religion, marital status, blood type, address, nationality, photo, valid date, date and place of issuance of e-KTP as well as the signature of the bearer.

2) Law No. 22 Year 2002 on Child Protection

Law No. 22 Year 2002 on Child Protection includes clauses abolishing discrimination to improve child welfare and human rights protection. This law particularly provides regulation on birth registration of a child in order to secure the legal status of children. Article 27 specifies as follows with regard to a child's identity: (1) All children will be provided with an identity from birth; (2) such identity will be specified in the birth certificate; (3) the birth certificate will be based on the evidentiary documents signed by persons who witnessed the birth or who assisted in childbirth; and (4) in the event it is not possible to confirm the birth or in the event the whereabouts of the parents are unknown, the birth certificate will be drawn up based on the testimony of the person who discovered the child.

3) Law No. 11 Year 2007 on Marriage Registration

Law No. 1 Year 1974 sets forth matters on marriage. Clauses on marriage registration and children's obtaining legal status concern the civil registration system. Under Article 55 of the law, the existence of a child can only be certified through the official birth certificate issued by the appropriate organization. In the event there is no birth certificate, the family relationship of a child can be proven through meticulous investigation by the Court, through which the proof of birth can be certified.

2.3.2. The Family Register System and the Civil Registration System

1) Family Register System

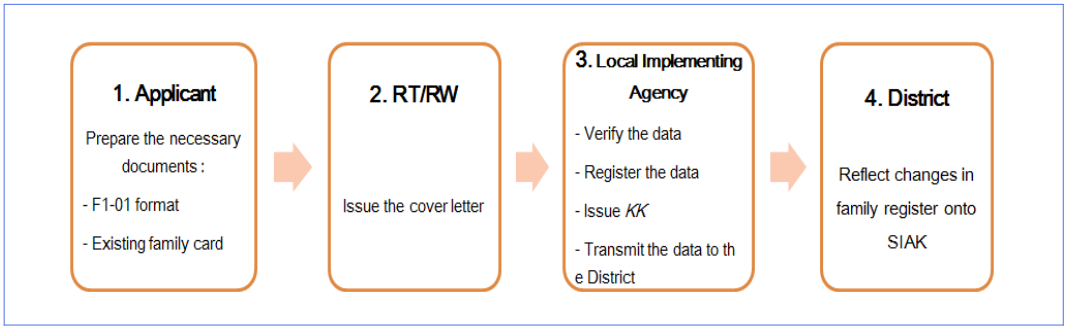
Indonesia's family register system is based on the Family Card (KK) system. In the event a new family relation is created through marriage or changes in family relations occur due to birth or death of a family member, the family member may prepare the document and apply for changes in the family card with the responsible authorities. Indonesia is by its very nature an extremely decentralized nation, so the family card is administered by the local governments rather than the central government. Accordingly, when a person moves to a different province, the family card registered at the local government of the former province must be discarded and be replaced with a new family card issued by the local government of the destination province.

Since the family card must be renewed whenever there is a change in family members or whenever someone moves to a new place, a new family card is issued when registration is made on vital statistics. For example, a new family card is made following a marriage report or change in domicile, as well as birth of a child or death of a family member.

When making a new registration for the family card or making a modification, the card holder must take the cover letter from the RT or RW, visit the local administrative office, and apply for the issuance or modification of the family card. For modification following birth or death of a family member, the birth certificate or the death certificate must be submitted, along with the existing family card. The government official handling the KK or KTP will then check the documents submitted, update the data by entering information on the family register database[7], and issue a new family card. Figure II-23 below represents this process.

7) BHPPDK (Buku Harian Peristiwa Penting dan Kependudukan0 and BIP (Buku Induk Penduduk)

Figure II-23 | Issuing Process of Family Card in Indonesia



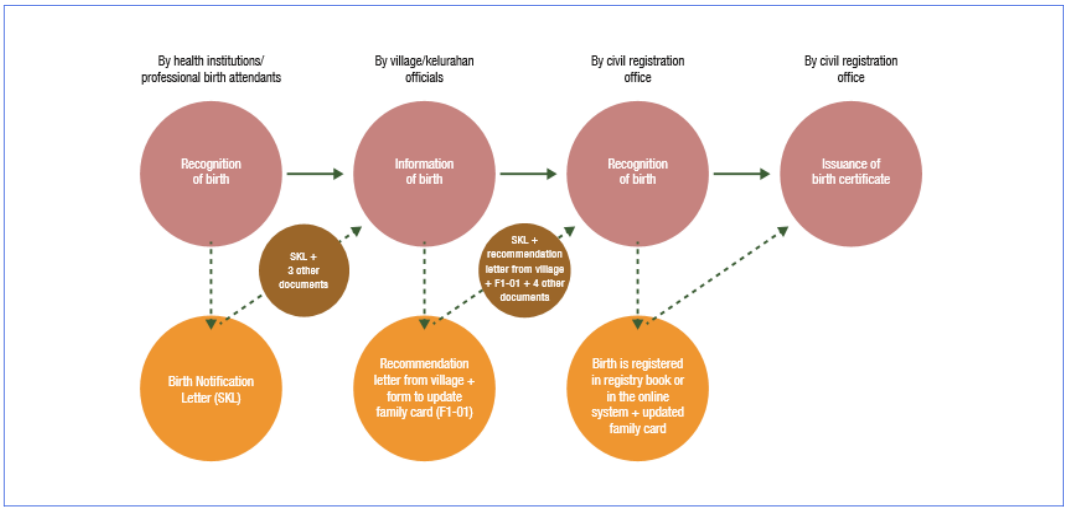
2) Civil Registration System

CRVS is handled by each province in Indonesia. Under Law No. 24 Year 2013 pertaining to civil administration, birth and death registration is the obligation of the citizens. The Office of the Directorate General of Population Administration under the auspices of the Ministry of Home Affairs oversees the registration system.

When a child is born, the parents or family members are required to register the birth, for which they must bring the birth notification letter signed by the medical practitioner or the midwife. The middleman is the village chief, and the chief must visit the civil registration office and submit the registration form after receiving confirmation of the registration. This data will then be entered into the administrative computer network and turned over to the central government.

General procedures are as seen in Figure II-24 but each district requires somewhat different documents. When a child is born, the family members will receive the official Birth Notification Letter (SKL) from their attending medical practitioner or midwife. They then apply for a recommendation letter from the head of the village and fill out several administrative forms to update their family card. Together with their old family cards, the families bring all these paper requirements to the Office of Population and Civil Registration (Disdukcapil), and the information on birth is officially registered. In some districts such as Arongan, Lambalek, and Petungkriyono, the marriage certificate of the parents must be presented when applying for the birth certificate (KOMPAK, 2016).

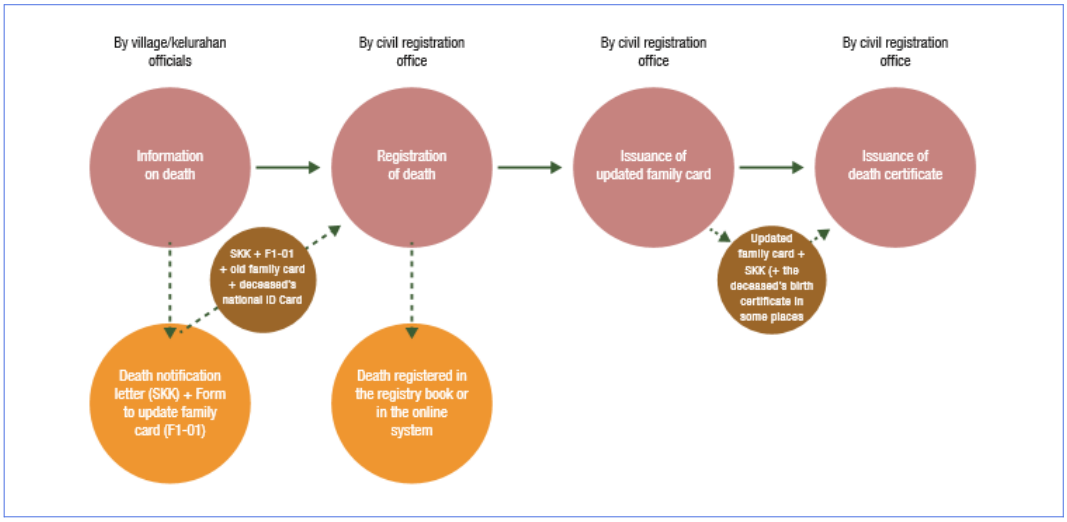
Figure II-24 | Birth Registration Process in Indonesia



Source: Kementarian PPN/ Bappenas Policy Brief, 2016

At time of death registration, in order to remove the deceased member from a family card, the family must go to the village office to get a death notification letter (Surat Keterangan Kematian: SKK) and complete a form requesting update of their family card. Families bring all these documents together with the old card and the deceased member's national ID card to the district office. When the submission is completed, the family card is updated, and the death registration becomes completed (KOMPAK, 2016).

Figure II-25 | Death Registration Process in Indonesia



Source: Kementarian PPN/ Bappenas Policy Brief, 2016

Applicable laws on reporting the causes of death including Act No. 24 Year 2013 do not set forth any specific regulation, but the official document used by the regional health authorities requires recording the cause of death. Although different across regions, there are largely six categories of causes of death: old age, disease, accident, crime, suicide, and others. These categories do not correspond to international standards, and they must be reconciled. The Indonesian Mortality Registration System Strengthening Project (IMRSSP) was initiated in 2006 under the initiative of the Ministry of Health and the National Institute of Health Research and Development to make general improvements to the death registration system and to the reporting system.

3) Linkage Between Family Registration System and Civil Registration System

As seen previously, the civil registration system and the family register system are closely related. The family card must be submitted at every report of birth or death, as represented in Figure II-21 and Figure II-25. This means that changes in vital statistics must be reflected on the family register.

Table II-13 | Division of Work between the Directorate of Population Registration and Directorate of Civil Registration of Indonesia's Ministry of Home Affairs

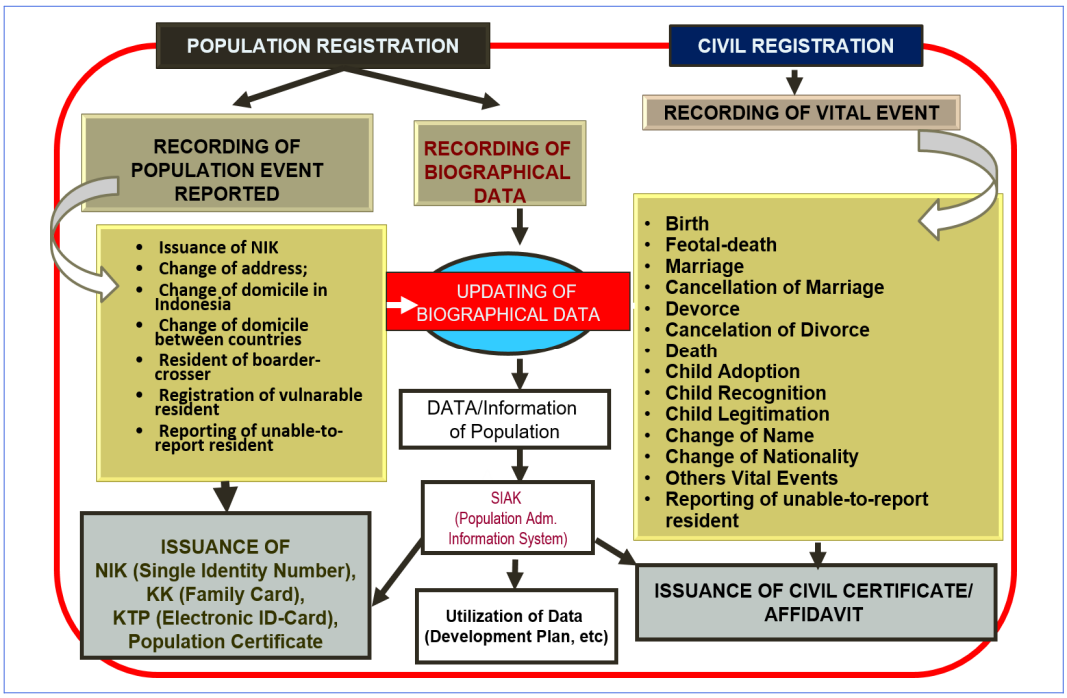
Directorate of Population Registration	Directorate of Civil Registration
Subdirectorate of Citizen Identity	Subdirectorate of Birth and Death Registration Facilitation
Subdirectorate of Migration	Subdirectorate of Marriage and Divorce Facilitation
Subdirectorate of population registration document management	Subdirectorate of Child Change Status Facilitation
Subdirectorate of facilitation on population registration	Subdirectorate of Naturalization Registration
Subdirectorate of Monitoring, Evaluation and Documentation	Subdirectorate of Monitoring, Evaluation and Documentation.

Source: Indonesian Ministry of Home Affairs (internal paper)

The population data entered in the family register and the civil registration system is consolidated and managed in SIA (Sistem Informasi Administrasi Kependudukan), the population administration information system of Indonesia's Ministry of Home Affairs. However, the database is not linked to the previous stage of integration into SIAK. The organization administrating population registration within the Ministry of Home Affairs is the Directorate

of Population Registration, while the Directorate of Civil Registration within the Ministry of Home Affairs administers civil registration, handling registration on vital statistics. The duties of these two organizations are strictly separated, and data between these two systems are not shared properly. Figure II-26 represents the scope of these two systems.

Figure II-26 | Scope of Population Registration and Civil Registration Systems in Indonesia



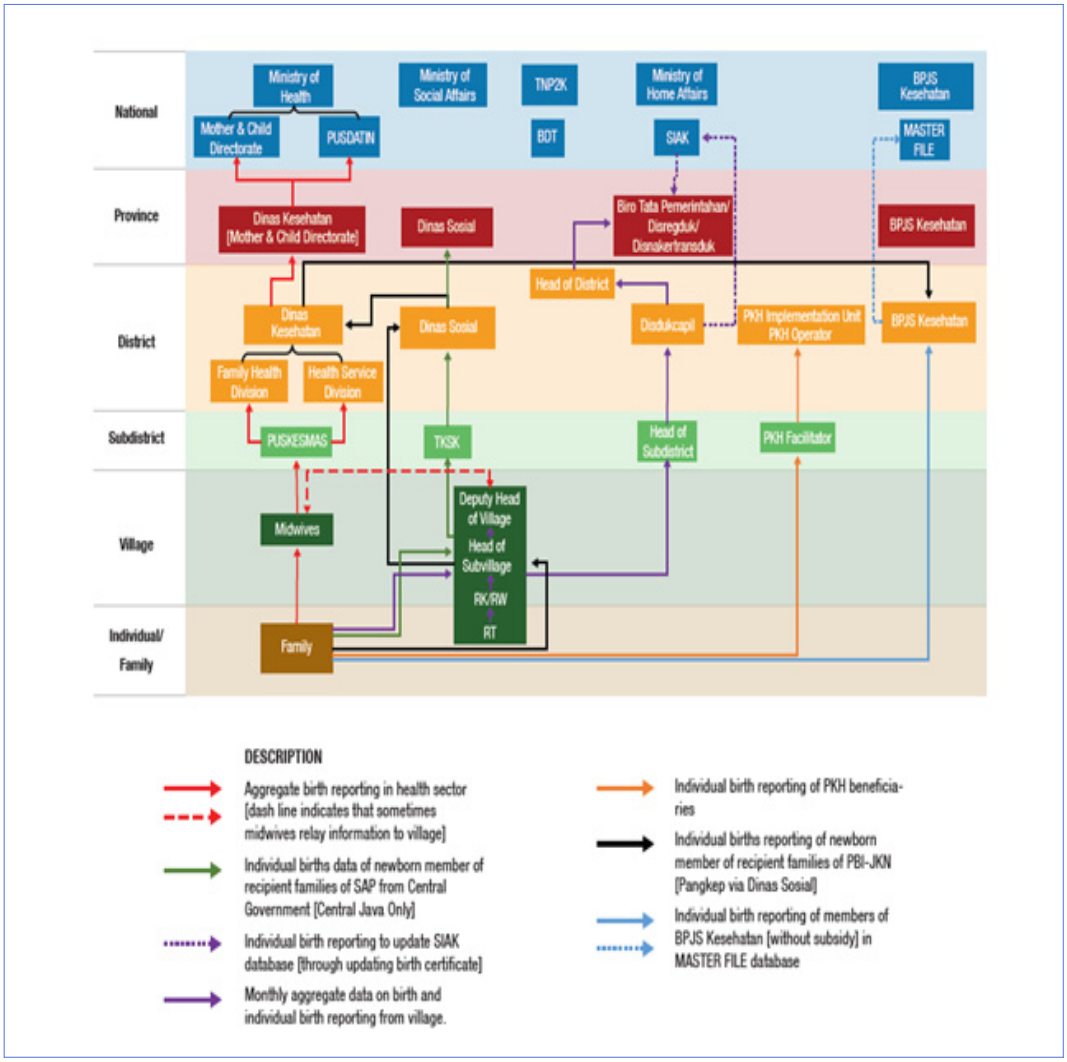
Source: Indonesian Ministry of Home Affairs (internal paper)

2.4. The Governance of Family Register and Civil Registration Systems (Inter-agency Cooperation and Division of Roles)

There is no single, consolidated system for data on birth and death statistics in Indonesia. Instead, various government organizations aggregate, analyze, and use vital statistics. It appears, however, that the Indonesian Ministry of Home Affairs (MoHA) mainly handles CRVS while the Ministry of Religious Affairs (MoRA) and the Supreme Court of Indonesia are involved in the system. It was mentioned previously that CRVS is drawn up by each province in Indonesia. The system is unique in each province, and since there is no single organization that oversees the CRVS system, the process by which any individual files a report regarding CRVS involves two or more organizations and is very complicated.

As discussed previously, even though Indonesia has a presidential system, the local governments administer tasks independently, with the result that the CRVS and family registration affairs are handled differently in each region. The central government oversees policies on diplomacy, national defense, security, legislation, currency, finance, and religion, and the central government and local governments share responsibilities for public services including education, health, housing, social security, women and children, family relations registration, and CRVS. The Ministry of Home Affairs handles tasks on civil registration and family register, while the local governments act as partners rather than subordinate organizations of the Ministry of Home Affairs.

Figure II-27 | Birth Data Reporting across Sectors in Indonesia



Source: Kementarian PPN/Bappenas, 2016

The determination on the part of the Indonesian government concerning the establishment of a consolidated CRVS system can be confirmed in various national strategies and documents. In the National Access to Justice Strategy, which was initiated in 2009, the Indonesian government confirmed that achieving justice for all and duly protecting human rights is crucial toward improving public welfare. In updating such national strategies in 2013, the significance of the legal identity was further emphasized. Also, in announcing the Medium Term Development Plan in January of 2015, the Indonesian president proclaimed for the first time that legal identity, along with education, health, protection, and establishment of infrastructure, is one of the five basic services dedicated to reducing poverty. This Medium Term Development Plan is intended to raise the birth reporting rate of all children under the ages of 18 to 85% by 2019 and to concentrate on the low-income class[8].

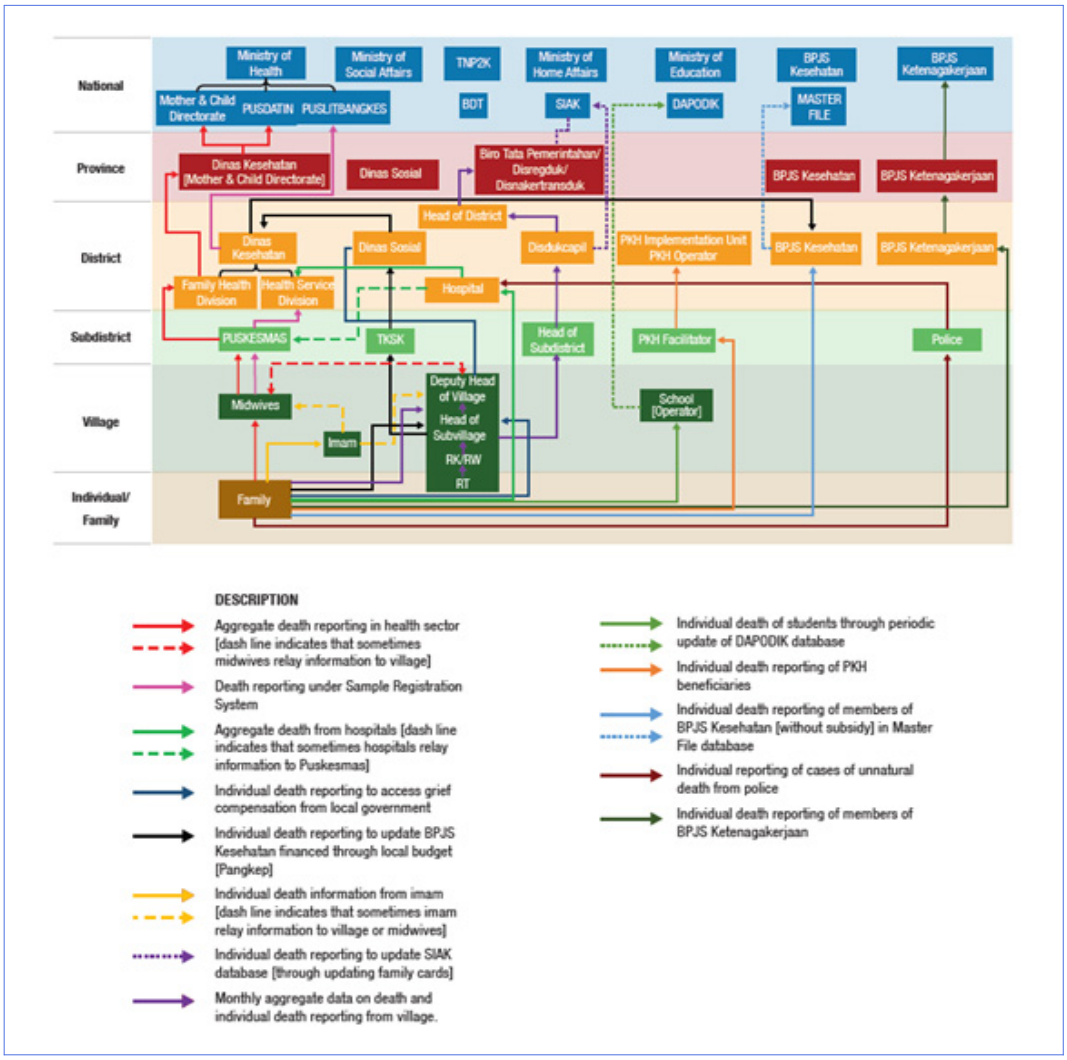
Governance concerning data processing of Indonesia's civil registration and family register is as follows:

Birth reporting and data processing procedures in the family register are represented in the figure above. The central organizations where birth reporting data is reported include the Ministry of Health, the Ministry of Home Affairs, the Ministry of Social Affairs, and the Social Insurance Agency for Universal Health Coverage. When individual birth reporting and application for updating of the family register is done at the village level, the upper regional administrative organization processes the pertinent data, which is then transmitted to the central upper organization.

When an individual birth is reported to the head of the village, the data is processed in three ways. The data is transmitted to the Ministry of Health, the Ministry of Home Affairs, and the Social Insurance Agency, and it then goes go up to the upper organization. The data to be processed by the Ministry of Health goes up to the Ministry of Health in the district and province after going through the community health center, which is finally transmitted to the data center of the Ministry of Health. The data to be reported to the Ministry of Home Affairs is ultimately reported to SIAK, which is the information system of the Ministry of Home Affairs. The data is transmitted to SIAK through the Office of Population Administration and Civil Registration. The data to be transmitted to the Social Insurance Agency is reported to and processed by the Social Insurance Agency in the central government.

8) Government of Indonesia, Rencana pembangunan janka menengah nasional 2015-2019 (National Medium Term Development Plan), Government Regulation Number 2 of 2015/Peraturan Presiden No. 2 Tahun 2015.

Figure II-28 | Death Data Reporting across Sectors in Indonesia



Source: Kementarian PPN/Bappenas, 2016

Death data reporting is virtually the same as birth data reporting. The biggest difference is that the data on a death at a hospital is reported by the clergy, school administrators, or police who witnessed the death.

The central administrative organization that oversees the death data are the Ministry of Health, the Ministry of Home Affairs, the Ministry of Education, the Social Insurance Agency, and the Employment Insurance Agency. The most basic means of collecting data is through the reporting of an individual death to the head of the village. Death data is also delivered by the midwives, hospital, clergy, school, or police.

The current CRVS system in Indonesia collects data from individual citizens and is compiled into each ministry's database without a consolidated database. BPS also collects population census every 10 years (SUSENAS: The National Socioeconomic Survey) to identify and project civil registration. According to Kementerian PPN/ BAPPENAS (2016), government officials from local governments get confused with CRVS statistics in the process of budget and policy planning. Although BPS census data should be used, government officials tend to use SIAK data of the Ministry of Home Affairs since the BPS data cannot detect real time changes in population registration. The newly revised Law No. 24 Year 2013 on Population Administration allows SIAK data to be used at work, but the lack of awareness amongst government officials causes further confusion (Kementerian PPN/ BAPPENAS, 2016).

2.4.1. Ministry of Home Affairs

Indonesia's CRVS system is operated primarily by the MoHA. The Office of Population and Civil Registration (Catatan Sipil - CAPIL) under the MoHA issues all birth certificates and marriage certificates for non-Muslim citizens. After the Population Administration Law was passed in 2006, Ministerial Decree Number 68 pertaining to the registration system and enforcement of vital statistics administration was announced in 2008, providing the framework for the system for handling vital statistics data both online and offline. The budget for CRVS service became consolidated into one channel to the central government and is administered by the Ministry of Home Affairs. Budget funds are distributed to each regional CAPIL (ODI, 2016). As part of the effort to modernize the vital statistics system, MoHA invested budget funds and resources in building the Population Administration Information System (SIAK) and is currently developing the fifth version of it.

Regulation No. 18 of Indonesia's Ministry of Internal Affairs sets forth that all local governments should establish the Technical Implementation Unit (Unit Pelaksana Teknis: UPT) in remote areas where service is not available so that administration can evenly reach all parts of the nation. The UPT handles the updates of SIAK or the issuance of birth and death certificates, but cannot handle family relations registration of civil registration (KTP) affairs. However, very few sub-districts have in fact established and managed UPT (Kusumaningrum, Bennouna, Siagian, Agastya, 2016). The family register is fundamental for major purposes of CRVS such as birth reports and death reports, and the upshot to the absence of consolidation of these tasks is yet more administrative restriction and limitation in accessibility. The family card is the only evidence proving one is a member of a family without a marriage certificate when reporting the birth of a child. There is clearly an urgent need for a system that enables convenient and timely reporting of a birth.

According to a recent survey, the people of Indonesia are much more aware of the family card than the marriage certificate. The people feel that they need to make a family registration

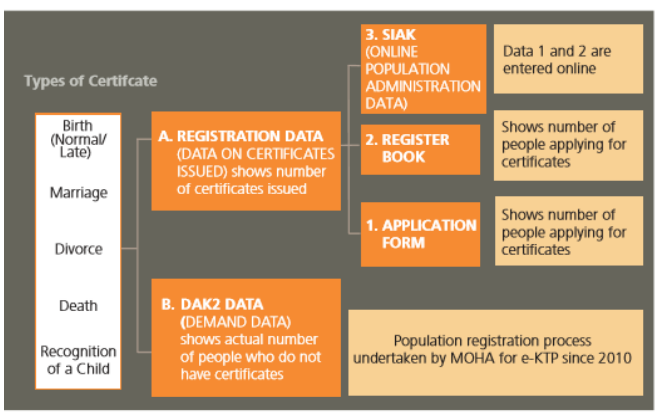
even if they do not obtain a marriage certificate (Kusumaningrum, Bennouna, Siagian, Agastya, 2016).

Even though the family register falls under the responsibility of the Ministry of Home Affairs, the policy of the central government was different from that of the local governments. Since the local governments are not subordinate to the Ministry of Home Affairs, the Ministry of Home Affairs is in effect the responsible authority and the local governments are the implementing agencies. The problem is that vital statistics such as CRVS are not linked to the family register system. The family register system, which contains data on the birth of a family member, the domicile, etc., is not automatically linked to CRVS for any reason including issuance of a birth certificate, and there is the inconvenience and complexity of having to make additional reports and registration.

There are three major purposes of SIAK, the online data system of MoHA: to improve and streamline the registration service of vital statistics; to provide nationwide more accurate, more complete data and make it more accessible; and to consolidate data into a single system while guaranteeing confidentiality (Kementarian PPN/Bappenas Policy Brief July 2016).

The SIAK database is to be operated at the level of the central government, provincial governments, and districts, but as previously mentioned, is not yet operated in all regions. In those regions where the SIAK database is actually operated, the data that can be gathered merely include (1) the number of residents with birth registration and (2) the number of birth registrations issued every year. The percentage of the Indonesian people who made birth registrations is being determined through the regular census called SUSENAS by SIAK and

Figure II-29 | MoHA Demographic Data Collection Process in Indonesia



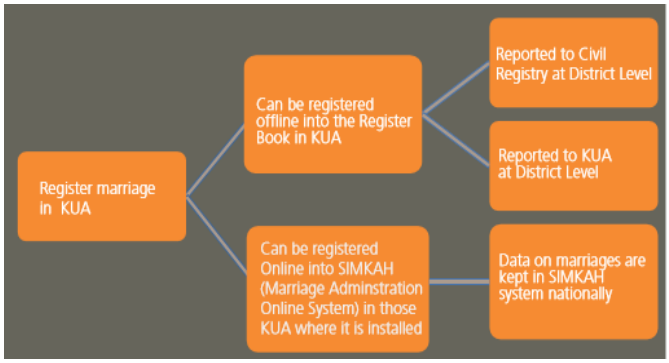
Source: Australian Aid, 2014

the Indonesian Statistics Agency (BPS). The Indonesian Ministry of Home Affairs collects demographic data as follows. Despite these efforts, aggregating vital statistics in agricultural villages and remote areas is still challenging, especially because the government of Indonesia is devolving power to local governments. There is no consolidated system reporting and collecting data on births, deaths, and causes of deaths.

2.4.2. Ministry of Religious Affairs

Another government ministry overseeing CRVS in Indonesia is the Office of Religious Affairs (KUA) under the MoRA. The Ministry issues certificates on marriage, divorce, reconciliation, and death of Muslim citizens. In 2010, MoRA introduced the Marriage Administration Online System called SIMKAH, which can be used at any Religious Affairs Office (KUA) throughout Indonesia. The following figure displayed in diagram form is the system for marriage registration pursuant to ordinances of MoHA and MoRA. Various matters related to marriage administered by the Ministry of Religious Affairs must be reported to the Implementing Agency, and family relation registration must be updated regarding the change in the member of the family.

Figure II-30 | Marriage Registration System in Indonesia



Source: Australian Aid, 2014

2.4.3. Supreme Court and General Court

In addition to Indonesia's Ministry of Home Affairs and Ministry of Religious Affairs, the Religious Court under the Supreme Court of Indonesia issues divorce certificates for Muslim citizens, while the General Court issues marriage and divorce certificates for non-Muslim citizens (ODI 2016). Marriage certificates in Indonesia involve many different social issues.

Particularly, in a society where polygamy is permitted, obtaining marriage certificates is considered to be one of the most difficult tasks along with obtaining birth certificates for children. Until 2016, it was required that fathers be recorded on the birth certificate, and this discouraged the registration of many births. In the event the parents did not have official marriage certificates, the name of the father could not be recorded on the birth certificate. For this reason, lack of the marriage certificate led to the lack of the birth certificate, as the parents did not want the name of the father missing from their child's birth certificate. The rate of marriage registration is low in Indonesia because many Indonesians go through religious marriage ceremonies and lack the knowledge to obtain legal marriage certificates (Bennouna, et al. 2016).

The following case has summarized the procedures for a woman who has not registered her own marriage to register the marriage in order to obtain a birth certificate for her child.

〈Case〉 A mother who has not registered her marriage and who wishes to obtain a birth certificate for her child with both parents' names entered onto it needs to engage with the following two or three agencies:

① Visit the court for the hearing of the marriage legalization case
② Visit the Religious Affairs Office (KUA) or the Civil Registry Office for the provision of a marriage certificate
③ Visit the Civil Registry Office for the provision of a birth certificate

Source: Australian Aid, 2014

Also, when parents who have not registered their marriage visit the Court to obtain a birth certificate for the child, they must bring a 'witness'. This work is not handled at one time but over several visits to the Court, at great cost in both money and time. When moving to another region, relocation of residence must be reported and the person filing the report must go through the inconvenience of visiting the former residence.

2.4.4. Other Government Ministries and Middlemen

Other ministries overseeing the CRVS project include the Ministry of Health and the Ministry of Foreign Affairs. The Ministry of Health handles vital statistics occurring in hospitals, and the Ministry of Foreign Affairs overseas handles vital statistics of migrant workers and other non-citizens. As seen here, Indonesia's CRVS has a very complicated and inefficient structure. The upshot to this is that citizens typically hire 'middlemen' (mostly village officials) to inform them of the CRVS procedures. For example, to obtain birth certificates, village officials are used as intermediaries, and to obtain marriage certificates for Muslim citizens, officials from the Religious Affairs Office (KUA) are used as 'middlemen'. The expenses incurred in filing

for the CRVS are paid by the middlemen, who in turn, receive funds for transportation and commissions, which leads to high costs in general. In the long-term, this system of middlemen likely makes birth registration more difficult and costly. In order to minimize their own costs, the middlemen visit the appropriate office after they have received several application forms for birth certificates, which is another factor of delay in filing for birth certificates.

Surveys on the reasons for the low rate of birth registration have indeed cited the high cost and complexity of the registration procedures (Bennouna, et al. 2016). The costs of filing CRVS vary across regions, and the costs include not only the transportation fees, but the costs of the seal on official documents, photocopying expenses, and other expenses, and these costs are a substantial burden to low-income earners. In addition to the actual distance to the authorities, factors hindering accessibility to CRVS include poor roads and lack of public transportation in provincial areas of Indonesia. Also, agricultural villages and islands in Indonesia have high illiteracy rates and low awareness on the importance of CRVS. As Indonesia is a nation of thousands of islands, the citizens do not have a strong national identity and do not feel any strong need to undergo CRVS (Ball, et al. 2014).

Another factor to leading to inefficiency in CRVS in Indonesia is the lack of flexibility in its administrative system. The registration of the application forms is often rejected due to minor mistakes in the document, and sometimes, there are not enough officials available to handle CRVS, causing citizens to have to visit the Office several times. Citizens sometimes use their religious names instead of their legal names on the document, and this further complicates administration. Another fundamental factor for the low filing of birth reports is that birth certificates are not mandatory for receiving health and medical services and other social benefits (Bennouna, et al. 2016). For this reason, parents tend to rather pay hospital expenses for their children when sick instead of paying for birth registration. Birth certificates are needed in Indonesia only when obtaining school graduation diplomas, applications of scholarship, marriage certificates, and passports. In order to prevent delays in birth registration, various incentive programs are offered for children with birth certificates including discounts in education and healthcare, but it is not yet clear what impact such programs have had in encouraging birth registration.

2.5. Cooperation with Relevant Organizations and the Private Sector

In order to rationalize the CRVS system, the Indonesian government has been cooperating with the major aid organizations including Australian Aid and international organizations including UNICEF and WHO on joint studies and programs. In a joint project conducted with Australian Aid, Indonesia's MoHA and MoRA launched the Australian Indonesian Partnership for Justice Program (AIPJ) and analyzed the current status and problems of CRVS through

the Baseline Study on Legal Identity: Indonesia's Missing Million (2014).

In the private sector, many different Civil Society Organizations (CSOs) and Disabled Persons Organizations (DPOs) convey to the government just how important the CRVS of the low-income class truly is and provide relevant data. In the aforementioned Baseline Study jointly conducted with Australian Aid in 2012-2013, PEKKA (Pemberdayan Perempuan Kepala Keluarga; Empowerment of Female Heads of Households NGO) and PUSKAPA UI (Pusat Kajian Perlindungan Anak Universitas Indonesia; Center on Child Protection, University of Indonesia) assisted in data collection and research. The civil society organizations emphasize to the government the importance of CRVS toward improving legal identity services, including the need to change policy and increase funding at the village level (Future Leaders, Proof of Birth, 2015).

With regard to the development of CRVS, the Indonesian government seems to be cooperating actively with corporations. The Indonesian government has enacted legislation requiring companies to include corporate social contribution activities that facilitate the regional development of Indonesia in fields such as foreign investment law and natural resources development (Future Leaders, Proof of Birth, 2015).

2.6. Migration, Family Register and Civil Registration

2.6.1. Inter-Regional Migration, Family Register and Civil Registration

Inter-regional migration, which refers to relocation of residents to a different region for any reason, closely involves CRVS, like emigration overseas. Here, a consensus has not been reached regarding the clear definition of inter-regional migration, but the term generally refers to living in a region other than the one when surveyed five years ago (Ananta, et al. 2005). In developing countries such as Indonesia, which is comprised of numerous islands and where huge disparities exist in social and economic development among regions, migration is expected to have a huge impact on CRVS, which is already very complex given the geographical nature of Indonesia. The Indonesian government thus acknowledges the Ministry of Foreign Affairs as an important stakeholder who oversees international and local migration (BPS Internal Source).

There are four basic factors that have impact on inter-regional migration in Indonesia. First is the dispersion policy implemented by the Indonesian government to narrow the gap in economic development among regions; second is the gap in economic development among regions prompted by globalization; third is the decentralization policy accelerated since the

early 2000s, and lastly, migration resulting from social factors such as the decline in the birth rate and mortality rate.

The dispersion policy launched by the Indonesian government in the 1950s and which went into full swing in the 1970s and 80s was the first such policy that gave rise to inter-regional migration. Out of concern over imbalance in economic development among regions, the Indonesian government adopted the policy of relocating population in congested areas of Java and other metropolitan areas to remote areas or poverty-stricken areas in order to bring about more balanced social and economic development (Vidyattama, 2014). Various incentives were granted to citizens who migrated during the initial stage of the policy, such as farm land, funds for transport, and subsidies for education and training and subsidies for five years (Vidyattama, 2014). This policy, however, was undermined by decentralization policy and the devolution of authority to local areas systems in the mid 1990s. Furthermore, metropolitan cities including the capital city of Jakarta, where much of the population is concentrated, became even more densely populated as a result of services and infrastructure becoming more advanced than in other regions. This occurred despite the tendency of more people to avoid arduous jobs (Vidyattama, 2014).

Such phenomenon also appears to be linked to globalization. Cities and regions in Indonesia that were more closely connected to the global economy showed faster economic growth than other regions (Hill, 2008). Consequently, it appears that disparities widened in these regions, and people relocated in search of jobs and a better living environment.

The regional dispersion policy and decentralization policy implemented by the Indonesian government since the early 2000s also appear to have impacted inter-regional migration. The Indonesian government officially declared decentralization in 2001. Macroeconomic policies including those for security, diplomacy, and the foreign exchange rate remained the responsibility of the central government, while those on education, health, agriculture, industry, trade, infrastructure investment, and the like were delegated to local governments (Hill, 2008). Expenditures by local governments following decentralization increased, accounting for 35% of total government spending, which is the average for Organization for Economic Cooperation and Development (OECD) member countries, and the International Monetary Fund (IMF) warned Indonesia that the budgets of the local governments had grown far too much (Choi, C., 2013; Bahl, 2002). Furthermore, partitioning of local government or administrative districts appears to have been pursued for political purposes rather than reasons of geography, land area, or imbalanced distribution or population. There is also the concern of corruption on the part of local politicians, who have access to the huge provincial budgets and natural resources of the region (Kim, H. J., 2012; Choi, C., 2013).

The last factor having impact on inter-regional migration is the improved social indicators of Indonesia following the country's strong economic growth. This is represented in the population movement, brought on by decline in the birth rate and mortality rate. According to the theory on the impact of the birth rate and death mortality on migration (Zelinsky, 1971), during the early transition of society resulting from improvement in economic conditions, the birth rate increases slightly or shows a similarly high rate while the mortality rate drops drastically, leading to an increase in the natural population. At the same time, movement from agricultural villages to urban areas accelerates. Indonesia coincides in many respects with this theory. As a result of the national family planning program implemented by the Indonesian government in the late 1960s, its birth rate dropped relatively earlier than would have been expected at its stage of economic development compared with neighboring Singapore and Malaysia, which were more developed than Indonesia (Ananta, et al. 2005). Indonesia's mortality rate also declined sharply. The mortality rate per 1,000 populations was 145 from 1967 to 1971 but dropped significantly to 51 in 1991 to 1995 (Ananta, et al. 2005). The intra-regional migration from 1975 to 1980, and from 1985 to 1990 increased from 3.7 million to 5.3 million persons (Ananta, et al, 2005). The decline in the birth rate could imply that Indonesian parents could afford to think about relocation, and by having fewer children, they could afford to invest more in each one of them. These factors can have impact on birth reports of CRVS.

The process of having to report the change in domicile registered in the family card at the implementing agencies of the local governments for people of Indonesia who frequently move from one region to another and having to report to the local governments the new domiciles has led the people of Indonesia to regard the CRVS system as a very complicated and inconvenient. There is, thus, an urgent need to consolidate the system. Relocation is very much involves family registration and civil registration from the perspective of accessibility to services. With the certificate of relocation, the family card cannot be updated, and a family card that does not indicate change in domicile does not afford access to basic local government services. For example, if after an address change the family card does not show the correct address, children who have moved have difficulty enrolling in school.

2.6.2. Overseas Migrant Workers, Family Register and Civil Registration

What then, is the relationship between overseas migration and CRVS and how similar are they in terms of administration? Indonesia with its population of 250 million is the world's fourth most populous nation, and is a major labor providing country that provides workers through international migration. Remittances from these migrant workers significantly bolster

the economy. The number of overseas migrant workers is also steadily rising by the year. According to the National Board for the Placement and Protection of Indonesian Migrant Workers, BNP2TKI, some 6.5 million Indonesian migrant workers are working in low-skilled jobs such as housemaids and jobs in the fisheries industry and manufacturing (IOM, 2014). This is approximately 3% of the total population (Hugo, 2008). However, this figure is merely the official number of migrant workers: a far larger number of migrant workers is likely working in neighboring Malaysia and elsewhere unofficially (Castles and Miller, 2009). In Malaysia, Indonesians are known to constitute the second largest cohort of undocumented migrant workers in any country in the world, following the undocumented migrant Mexican workers in the US (IOM, 2010).

Most of Indonesia's migrant workers are young women engaged in the service industry jobs such as housemaids or caregivers in neighboring Malaysia, Singapore, Hong Kong, or the Middle East. According to the 2007 data of BNP2TKI, the ratio of female and male migrant workers was 78:22. Until 2012, female migrant workers comprised the majority of overseas migrant workers, but the number of men has recently reached rough parity with that of women. This is because Indonesia declared a moratorium on migration to countries where there have been widespread violations of human rights, as part of measures to protect the human rights of its female migrant workers (IOM, 2014). Most of the female migrant workers are engaged in household affairs and are not protected by labor law in the labor importing countries. Consequently, in many cases, these women are employed through unofficial channels without appropriate documentation.

This can become a serious issue when linked with CRVS. When women without appropriate civil registration are hired illegally, there is no mechanism to protect them. Birth registration of children they have left behind in their homeland also tends to be neglected.

Another issue in Indonesia's CRVS is that although the number of migrant workers is not high as a percentage of the total population, migrant workers usually come from the most impoverished classes, women and persons from specific regions.

Overseas migration labor can have a huge impact on the birth registration of children of migrant workers. People's situations can vary greatly. For example, the children may accompany their parents in overseas migration labor; children may be left behind in their homeland; children may be born overseas during periods of migration labor, or children may be put in the care of relatives or facilities when both parents go overseas as migrant workers (Ball, et al. 2014). Particularly, in the event the parents are engaged in undocumented migration labor, this problem can become even more serious, and the children may end up stateless. This problem is not only restricted to Indonesia, but to the labor destination country,

and may affect multiple generations. There is no means by which parents who go overseas as migrant workers without any official documentation or identity to report the birth of their children.

One thing we must take note of here is that the reason behind the low birth reporting of children in Indonesia lies not only in its system but the history and culture of Indonesia. Parents do not regard birth registration as affording benefits in terms of healthcare, finances, and education. Parents in Indonesia who witnessed massacres in the mid-1960s tend to avoid not only birth registration but various registrations requested by the government as a means of avoiding censorship, control, or oppression from the government. This is particularly true in remote regions and islands far from the metropolitan areas, and is further fueled by the high illiteracy rate. Furthermore, parents do not regard birth registration from a positive perspective (Ball, et al. 2014; Cribb, 2001). In some extreme cases, parents do not register birth in order to force children to engage in child labor such as sex trade in order to gain more income (Ball, et al. 2014). The high infant mortality rate in agricultural villages or remote areas serves as another factor for delaying birth registration: parents often delay birth reporting until they are sure that their children have strong possibility of surviving (Ball, et al. 2014). This also involves the custom of not naming a child until 40 days after birth (Beazley, 2003).

The management of Indonesian migrant workers is very similar to CRVS with regard to administration. The CRVS system is concentrated in only certain urban areas where infrastructure and information is concentrated. Procedures and methods are extremely complicated and time-consuming. In this country comprised of so many islands, the information and system are not evenly available. According to clause 39/2004, the central government is in charge of controlling and managing overseas migration labor. In regions, private agencies are involved in recruiting workers, placing employment, and providing documentation required by destination countries, while the local governments do not actively intervene in the supervision and management of these tasks (IOM, 2010). Accordingly, as the corruption and inefficiency of CRVS brokers increasingly become a problem, the corruption and inefficiency of private agencies overseeing overseas migration labor are emerging as a major issue.

Another problem stems from the central government having virtual control over the supervision and management of process of recruitment of migration labor. The local governments do not yet have the authority to supervise the handling of these duties even though power is being decentralized (IOM, 2010). Just as residents living geographically, socially, and economically distant from the urban areas must rely on CRVS middlemen, workers seeking employment overseas must rely on local agencies or brokers, which leads to illegal employment and drawing up of illegal documentation. The impact of overseas migration on the family relations register is similar. Although it is nominally the responsibility of the Ministry

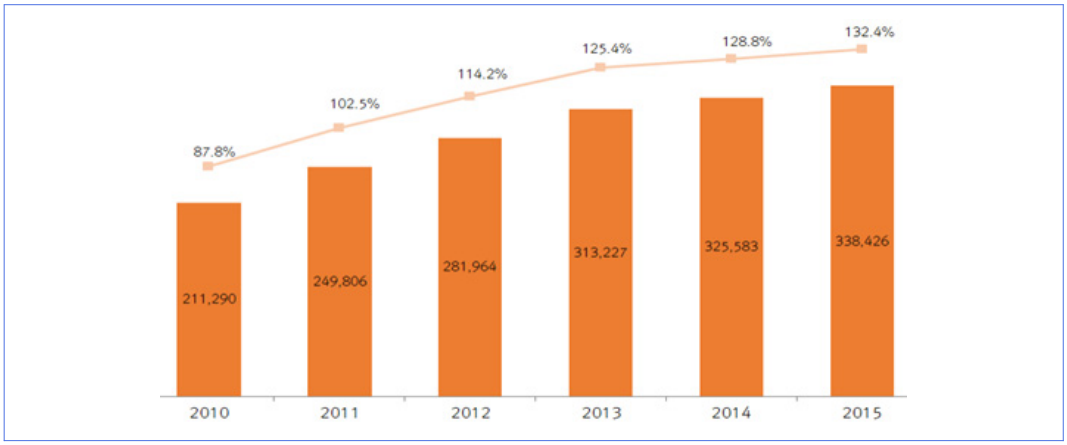
of Home Affairs, the local government independently handles the affairs, and reporting of the family's domicile resulting from overseas migration poses a difficulty, temporary though it may be. In the event overseas migration is processed through an illegal channel, the family register is not updated and it is difficult to determine who has moved and where.

Some 13 government ministries in Indonesia are involved with overseas migrant workers. They are the Ministry of Manpower and Transmigration; BNP2TKI; the MoFA; the Ministry of Social Affairs; the Coordinating Ministry of Economic Affairs; the Coordinating Ministry of People's Welfare; the Ministry of Health; the Ministry of Communication; the MoHA; the Directorate General of Immigration; the Indonesian National Police; the National Body for Professional Certification; and the Professional Certification Institute. The problems are that the roles of these ministries overlap and they generally fail to cooperate with each other.

2.7. ICT Status and Implementation Strategies

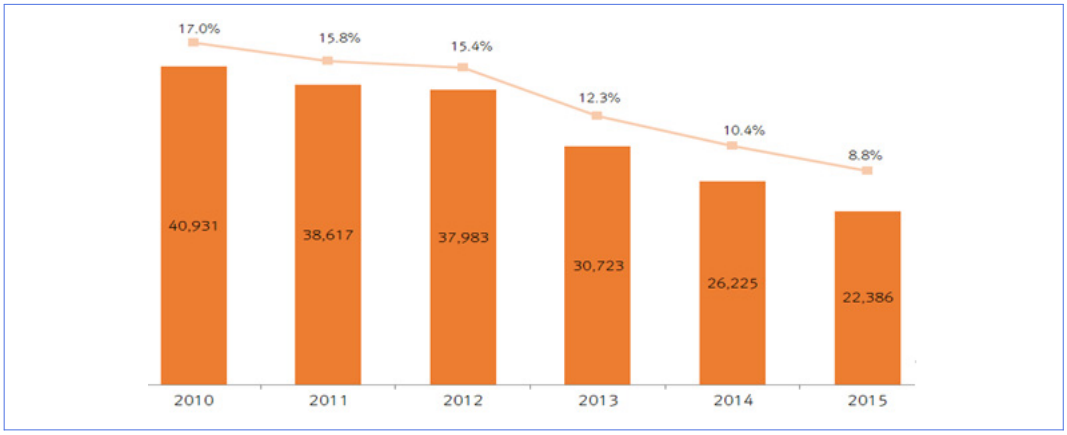
Indonesia's mobile communication registration and distribution rate is on a steady rise along with individual Internet user rate. However, wire communication distribution rate is decreasing because Indonesia's communication network has directly entered a mobile network stage without going through the wire network phase.

Figure II-31 | Mobile Communication Registration and Distribution Rate* in Indonesia (one thousand, %)



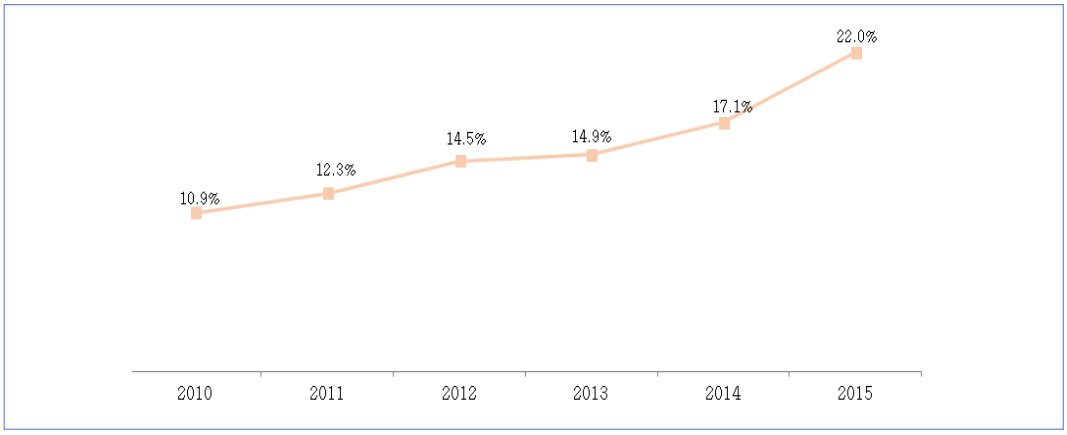
Source: CONEX, 2016
*Distribution Rate: Mobile-cellular telephone subscriptions per 100 inhabitants

Figure II-32 | Wire Communication Registration and Distribution Rate in Indonesia (one thousand, %)



Source: CONEX, 2016

Figure II-33 | Personal Internet Usage Rate in Indonesia (%)



Source: CONEX, 2016

Indonesian government is implementing various projects to build a knowledge-based society. ICT 2025 Plan aims to build an information/communication-based nation until 2020 and a knowledge-based society until 2025 through infrastructure building, human resource development, and legal system revision. In addition, the Palapa Ring II project has been undergoing since 2015 with a goal of connecting 440 cities and towns with broadband in order to establish the Backbone Network, one of the central national plans of Indonesia. Through this project, a 8,479km long optical cable with a budget of 230.65 million dollar will be implemented (National IT Industry Promotion Agency, 2017).

Based on these ICT development initiatives, CRVS has been actively adopting ICT. A direct

reporting system of birth and death from the hospital is currently being implemented. Also, on-line birth registration system, various CRVS service development, and SMS information service on CRVS processes are being considered as a means of promoting CRVS coverage at the individual level.

2.8. Statistical Capacity Analysis and Educational & Training Measures for Long-term Management

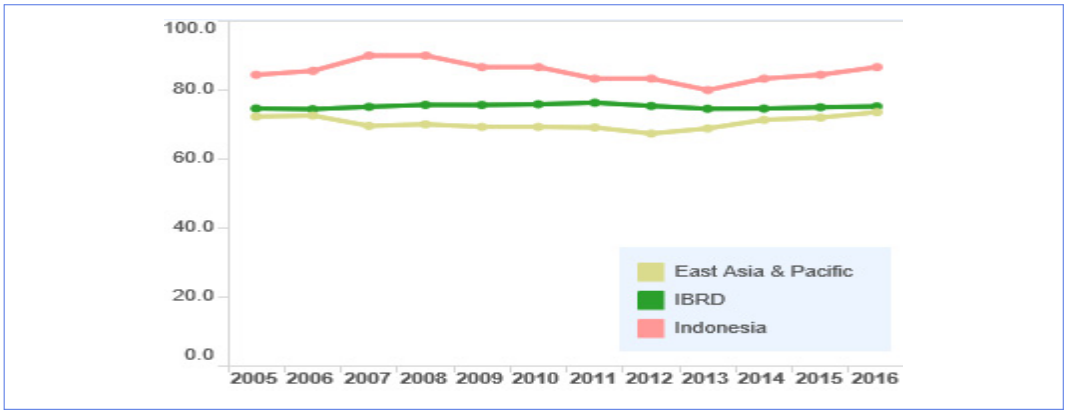
Table II-14 listed below indicates Indonesia's SCI scores, while Figure II-34 represents Indonesia's SCI trend in comparison with the scores of IBRD nations, East Asian countries and Pacific nations participating in the SCI.

Table II-14 | Trend of Indonesia's Statistical Capacity Indicator

Indicators	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Methodology (0 - 100)	90	80	80	90	90	80	80	70	70	60	70	80	80
Periodicity and Timeliness (0-100)	90	93.3	96.7	100	100	100	100	100	100	100	100	93.3	100
Data Sources (0-100)	80	80	80	80	80	80	80	80	80	80	80	80	80
Statistical Capacity Indicator (overall average)	86.7	84.4	85.6	90	90	86.7	86.7	83.3	83.3	80	83.3	84.4	86.7

Source: World Bank Statistical Capacity Indicator Dashboard.
http://datatopics.worldbank.org/statisticalcapacity/SCIdashboard.aspx

Figure II-34 | Trend of Indonesia's SCI and Comparison with other Nations



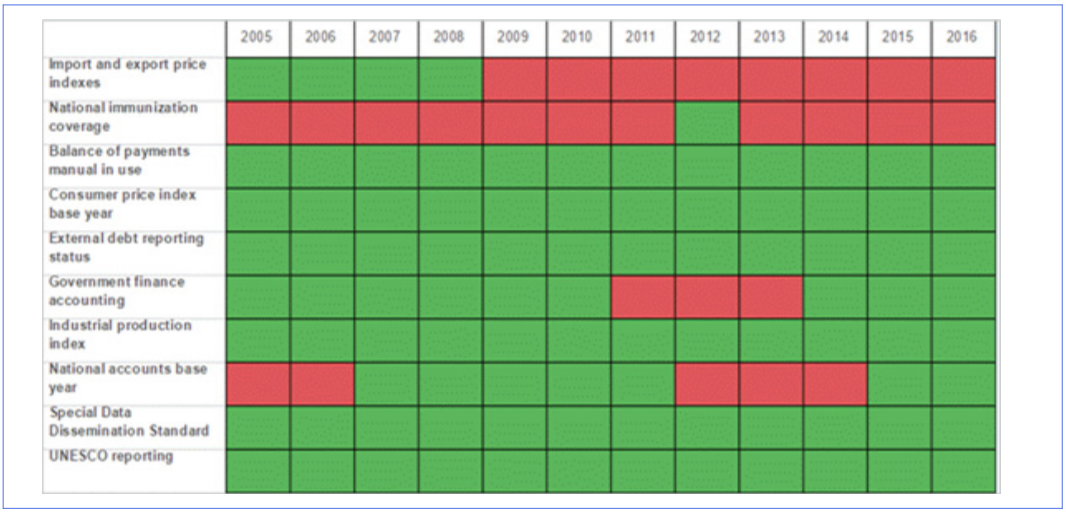
Source: World Bank Statistical Capacity Indicator Dashboard.
http://datatopics.worldbank.org/statisticalcapacity/SCIdashboard.aspx

Taking a look at the overall average score, Indonesia's SCI has recorded over 80 every time from 2004 to 2016. This figure far exceeds the average of East Asian, Pacific, and IBRD nations participating in the SCI, as seen in Figure 20. Indonesia's statistical capacity is thus considered to have reached a significant level. This, however, is the average score of three indicators, and there is need to analyze each indicator individually.

2.7.1. Methodology

Figure II-35 represents the scores on the area of methodology in Indonesia's SCI. Each specific indicator is scored 0 or 1. The National Immunization Coverage indicator continually showed lack of capacity during the past decade. This indicator assesses whether there is gap between the measles vaccine coverage announced by the government and WHO·UNICEF to check whether internationally recommended practices are applied. A score of 1 is given if it is deemed that international methods are applied, and if not, a score of 0 is given. From this perspective, it can be seen that Indonesia's immunization statistics do not coincide with international standards. The import and export price indexes assess whether import and export price indexes are made public every month or every quarter. It can be seen that they have been weak since 2009. Indonesia shows satisfactory standards in general statistical methodology but is weak concerning vaccine coverage statistics, and import and export prices. The government finance accounting concept was somewhat deficient in the past, but became satisfactory over the past two or three years.

Figure II-35 | Indonesia's SCI: Trend of Methodology Scores



* Red indicates 0, while green indicates 1.
Source: World Bank Statistical Capacity Indicator Dashboard.
http://datatopics.worldbank.org/statisticalcapacity/SCIdashboard.aspx

2.7.2. Data Sources

Taking a look at the scores of specific indicators corresponding to Data Sources in Figure II-36 we can readily see that the vital registration system coverage has always been weak. This is the most important indicator for improving the CRVS. In the event the Statistics Division of the UN Department of Economic and Social Information and Policy Analysis deems that the pertinent nation has an adequate registration system for compilation of birth and death statistics. The score is 1 or 0. Based on this evaluation criteria, Indonesia's registration system for vital statistics such as births and deaths has been rated inadequate for the past ten years.

Figure II-36 | Indonesia's SCI: Trend of Data Sources Scores

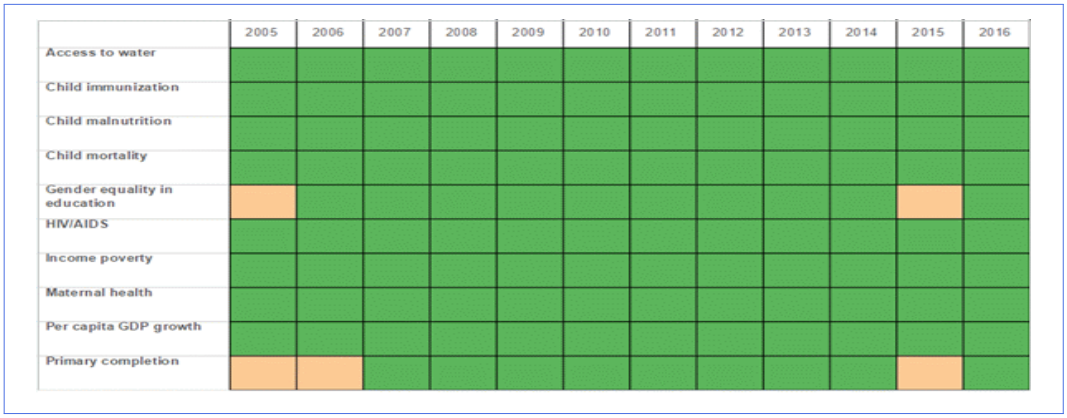


* Red indicates 0, orange 0.6 and green 1.
Source: World Bank Statistical Capacity Indicator Dashboard.
http://datatopics.worldbank.org/statisticalcapacity/SCIdashboard.aspx

2.7.3. Periodicity and Timeliness

Figure II-37 below represents the trend of Indonesia's scores on Periodicity and Timeliness of statistics. Unlike the two indicators mentioned previously, none of the indicators scored 0. The lowest score was 0.6. Indonesia's Periodicity and Timeliness thus scored extremely high scores, with the exception of gender equality in education and primary completion indicator, which recorded 0.6 in 2015. This means that corresponding statistics have been observed for the past five years based on the corresponding year.

Figure II-37 | Indonesia's SCI: Trend of Periodicity and Timeliness Scores



*Red indicates 0, grey 0.3, orange 0.6 and green, 1.
Source: World Bank Statistical Capacity Indicator Dashboard.
http://datatopics.worldbank.org/statisticalcapacity/SCIdashboard.aspx

2.8. Analysis of Strengths and Weaknesses of Indonesia's CRVS

Prasetyo & Hamudy (2016) have presented the entire framework of Indonesia's birth and death registration system as follows in Figure II-38 and have discussed its current status as well as measures for improvement. There remain many challenges to registering and obtaining certificates on births and deaths from the organizations overseeing census records and RR. As pointed out in the study of Duff, Kusumaningrum, S & Stark (2016) as well as Indonesia's Ministry of Home Affairs, major challenges include cost, distance, complicated procedures, lack of time, and lack of awareness for the need for registration. These issues greatly depress coverage, and as seen in Table II-14, the ratio of certificate issuance on birth, death, and marriage stands at a very low level.

Table II-15 | Coverage of Official Certificate Issuance for Each Vital Event in Indonesia

Types of Vital Events	Coverage Ratio of Certificate Issuance (June 2016)
Birth (birth certificates for children under 18 years of age)	51.22%
Death	10.27%
Marriage	16.63%
Divorce	99.68%

Source: Country Presentation for Strengthening Civil Registration and Vital Statistics (CRVS) and National Identity Management Systems: Indonesia, 2015 (internal paper)

Figure II-38 | Framework of Indonesia's CRVS System

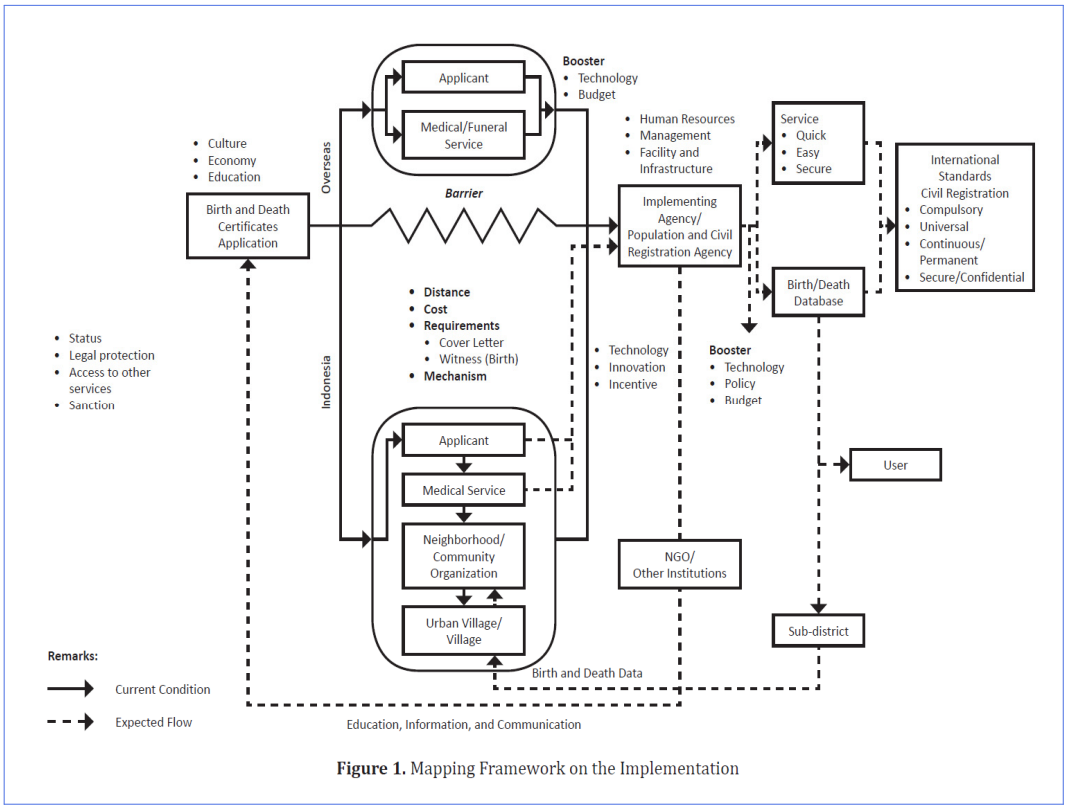


Figure 1. Mapping Framework on the Implementation

Source: Prasetyo, Hari, and Moh Ilham A. Hamudy, 2016, Increasing the Scope of Birth and Death Registration: Issues and Challenges, Jurnal Bina Praja 8 (1), 13-26

The Indonesian government is well aware of the importance of CRVS and family registration. It is also aware that effectively compiling and maintaining vital statistics are the goals and means of reducing poverty and reaching the Sustainable Development Goals (SDGs). Indonesia is working hard to improve the CRVS system. One of its national development goals is building an integrated CRVS system, which seems very encouraging.

Indonesia is making genuine efforts towards building an integrated system through the digitalization of a vital statistics database despite political and geographical restraints including decentralization efforts that have yet to firmly take root. This is clearly set forth in relevant laws and strategic documentation. The problem is the issue of implementation. Although decentralization is showing uneven results as a result of a shortage of both human and material resources as well as the weak capacity of government officials in areas of administrative implementation such as CRVS, the CRVS system should nevertheless become more effective with the expansion of educational opportunities thanks to the general improvement in the standard of living.

The great diversity in religion, language, and the like due to the high degree of heterogeneity and the presence of so many cultures in the country can render the establishment of an integrated CRVS system very challenging. Nevertheless, public awareness of the importance of the family register can be raised by leveraging the great importance that the Indonesian people commonly accord to family rather than the individual. However, because decentralization has yet to take firm root, it would be advisable to raise awareness of local government officials on the importance of CRVS administrative service rather than to transfer a data integration method requiring extremely advanced technology.

Another feature of Indonesia's CRVS is that there is confusion in making marriage reports as a result of the disparity between religion and law. The people of Indonesia also regard CRVS as complicated and inconvenient because of the complexity in making reports for changes in domicile brought on by frequent relocations both at home and abroad.

2.9. Policy Proposal and Educational & Training Measures through Comparison with Korea

2.9.1. Revision on Relevant Laws to promote CRVS Efficiency

Indonesia generally has a favorable institutional legal framework for CRVS. In particular, Law No. 23 specifies that there will be no discrimination in issuance of all certificates, defines personal data including birth and death, designates the use of the personal information, and sets forth matters on the budget. Indonesia also has ordinances on marriage and child birth, and an institutional framework is in place to a certain degree. The fact that CRVS is approached from the perspective of service rather than controlling the citizenry is also specified in the long-term national development plan. Relevant laws are now being revised in Indonesia to simplify the documentation required in making birth and death reports, which are presently obstacles in handling affairs by Indonesia's Ministry of Internal Affairs.

The most urgent task under the development goal is to revise relevant laws and regulations, which include exercising flexibility on CRVS regulations. Such is to simplify the documents and procedures in processing birth and death registration in order to enhance CRVS coverage. Also, a revision on relevant laws that enable a consolidated database between ministries would be recommended to link CRVS and public service delivery. In order to promote efficiency of this service, the Ministry of Home Affairs' database SIAK, the Ministry of Religious Affairs' database KUAC, and data on birth and death from Ministry of Health need to be consolidated. Furthermore, a guideline for a standardized database for the central and local governments in budget planning and government demand projection is also in need.

2.9.2 CRVS Governance

The greatest weakness of Indonesia's CRVS is the dispersal of the legal framework and administrative system in place resulting from decentralization. The administrative districts were divided for political purposes and not in consideration of the population or geographical features, and there is a huge disparity in capacity to administer CRVS across regions. Furthermore, the government officials of the regional government offices of the Ministry of Home Affairs and the Ministry of Religious Affairs such as Capil or Kua act as the middleman and handle civil registration affairs for the residents both officially and unofficially. Accessing CRVS is, therefore, costly for the citizens and administration accessibility is poor.

Making implementation of tasks more transparent would do a great deal towards improving Indonesia's CRVS. Particularly, it is welcoming that the Indonesian government has increased awareness on the value of using a consolidated and consistent baseline data. More importantly, a consolidated SIAK and population census data will be utilized to provide various social services —in the era of decentralization, collaboration between central and local government will be highly valuable.

Furthermore, providing technical assistance and more proactive human and material resources provision to local governments with limited capacity are recommended.

2.9.3 Consistency in Policy on CRVS Integration

The Indonesian government is very familiar with the policy proposals from home and abroad to integrate the CRVS and family register systems. In fact, the Indonesian government recognizes the significance of integrating the CRVS, and there is enough evidence to show how the system is linked to Indonesia's many different efforts towards economic and social development. There is shared recognition on the part of Indonesia's central and local governments on the many advantages of integrated CRVS regarding social integration, securing service channels, and expedited government planning and budget implementation in general despite numerous risk factors and restraints, and this is extremely important. Such consistency in policy corresponds to not only the Ministry of Home Affairs and local governments administering CRVS but to all relevant government ministries in their government-wide approach. For example, overseas migration and CRVS are closely involved with human trafficking, and the government needs to approach this issue from a government-wide perspective and reach a consensus with the relevant government ministries. In other words, even if the Ministry of Manpower and Transmigration approaches the issue of migration workers from the perspective that their income has a positive impact on household income and Indonesia's economy, the Ministry of Home Affairs must approach the issue from the

perspective of protecting the migrant workers by updating CRVS required in issuing passports and indicating domiciles on the family card. These two ministries must reach a mutual understanding on this issue.

Further advancement in the CRVS system can be anticipated if Indonesia can continue to make advancement in SIAK, the integrated digital system that has been upgraded to the fifth version, and transfer appropriate budget funds and human resources to local governments. Awareness of all parties is just as important as an integrated system. It is important to recognize that each registration is correlated rather than being individual. For example, a report of marriage is the registration that becomes the basis for the birth reports of children, which leads to family relations registration. It is, therefore, important to raise awareness of residents on integrating CRVS and the family card.

2.9.4 Promoting Statistical Capacity

As discussed, the statistical indicators tell us that Indonesia's statistical capability is fairly good among IBRD countries. However, as improvement in the CRVS coverage has been rather minimal during the past 10 years, there is a need to make comprehensive efforts to promote CRVS coverage. Particularly, awareness increase, incentive provision, and training government officials on statistical capacity at the local government level seem to be essential.

2.9.5 Raising Awareness as a Right

As the Indonesian ministries have already realized, without citizen participation and raising awareness, CRVS system cannot be improved, no matter how good the system itself is. Therefore, raising awareness of the importance of CRVS is essential, particularly under Indonesia's geopolitical environment and accelerated decentralization. A rights-based approach is needed in order to raise awareness that CRVS is an access to services that will protect every citizen and his or her family. In addition, there needs to be special assistance to the most vulnerable population, such as impoverished people who are at the blind spot of welfare.

2.9.6 Ownership and ODA efficiency

Indonesian government has expressed its political will to use CRVS to ultimately reduce poverty. Not only has the government made efforts to consolidate SIAK and other health database, but it also has realized how important this is, in terms of consolidation of the people. It is believed that Indonesia has potential to overcome some geographical and social difficulties

if the government builds strong partnerships with its donors and provide very specific technical assistance to ultimately enhance capacity.

3. Proposal on Measures to Build CMIS for the development of CRVS System in Lao PDR

3.1. General Overview

3.1.1. General Characteristics

Lao PDR is a people's democratic republic adopting a presidential system located in Southeast Asia and its official name is 'Lao People's Democratic Republic'. The political system is a one party system led by the Lao People's Revolutionary Party and the head of the state is the President, heads of administration are the main high level members such as the prime

Table II-16 | General Overview of Lao PDR

	Details
Name of country	Lao People's Democratic Republic (Lao PDR)
Size	230 thousand ㎢ (84th largest in the world, 1.1 times bigger than South Korea)
Climate	Tropical monsoon climate, high temperature and humidity
Capital	Viantiane (Population approximately 820 thousand)
Population	Approximately 7,019,073 (104th largest in the world)
Administrative District	16 Provinces and 1 special city (Vientiane)
Main Cities	Savannakhet (891,000) Champasak (644,000) Luang Prabang (440,000)
Ethnicity (Race)	Lao Lum: About 50% of the total population, waterway farming near the Mekong River Lao Tum: About 30% of the total population, slash-and-burn agriculture Lao Sung: About 10% of the total population
Language	Common language: Lao (Laotian)
Religion	Buddhism (95%), Animism, Christianity
Independence day	December 2nd, 1975
Government System	People's democratic republic
Head of State	President (Bounnhang Vorachith): April, 2016~ (5 years term)

Source: Ministry of Foreign Affairs, 2016

minister and National Assembly president who are in charge of the final decision making of the Party's central committee which enables Lao PDR to maintain its collective leadership. The geographical location is northeast of Thailand and west of Vietnam, and the size is approximately 236,800km2 which is similar to that of the Korean Peninsula. The population is about 7, 019, 073 at the date of July, 2016 and ethnic groups includ Lào Lùm (50% of the total population), Lao Tum (30% of the total population) residing in the hill lands and Lao Sung (10% of the total population) residing in mountains. The official language is Lao (or Laotian) and most of the population believes in Buddhism, and others believe in Christianity or folk religions. The central government of Lao PDR is consisted of a president, vice president, prime minister, three deputy prime ministers and 18 ministry departments. The current president is Bounnhang Vorachith inaugurated in April, 2016 .

3.1.2. Politics and Administration System

The official name of Lao PDR, Lao People's Democratic Republic, was officially established through the National Congress of People's Representative on December 2nd, 1975 as the monarchy abolished. Article 2 of the Constitution indicates that "the State of the Lao People's Democratic Republic is a people's democratic state. All power belongs to the people, [and are exercised] by the people and for the interests of the multi-ethnic people of all social strata with the workers, farmers and intelligentsia as key components". Therefore, the detailed policy decisions of Lao PDR are made by main high level authorities such as the president, prime minister and the speaker of the national assembly.

The president is elected by winning more than 2/3 of votes from attendant politicians in the National Assembly and has 5 years of term. The prime minister is appointed by the president through agreement from the national sssembly directing and monitoring the administrative body as a head of administration. Under the former prime minister, there were four deputy prime ministers but the newly introduced government of Lao PDR as of April 2016 reduced the number of deputy prime ministers to three and simplified the responsibility and decision making process by delegating the tasks of the prime minister to governmental departments. The local government is consisted of 17 provinces and 1 special city including districts (Muang) and villages (Ban) as sub-administrative institutions per each province. The governor and mayor of the capital city, Vientiane is appointed by the president according to the recommendation of the Prime Minister.

Administrative districts of Lao PDR consist of 18 provinces, 148 districts and 8,524 villages. The administrative body is consisted of 17 departments.

Table II-17 | Adminiatrative Organizations of Lao PDR

Details
• Ministry of Defense
• Ministry of Public Security
• Ministry of Foreign Affairs
• Ministry of Post & Telecommunication
• Ministry of Justice
• Ministry of Agriculture & Forestry
• Ministry of Planning & Investment
• Ministry of Public Works & Transportation
• Ministry of Education and Sports
• Ministry of Industry & Commerce
• Ministry of Labour & Social Welfare
• Ministry of Science & Technology
• Ministry of Information, Culture & Tourism
• Ministry of Health
• Ministry of Energy & Mines
• Ministry of Home Affairs
• Ministry of Natural Resources & Environment

Source: http://www.laogov.gov.la/pages/government.aspx?ItemID=27

3.1.3. Economy

The GDP of Lao PDR is 13.8 billion dollars and GDP per capita is 1,921 dollars based on the 2016 data source of IMF. Major industries are natural resource export and other manufacturing including mineral resource, lumber, steel and metal and the trade size is 3.1 billion dollars for export and 3.9 billion dollars for import based on the data of 2016. Apart from the government system, Lao PDR prioritizes national economy development by opening economy through establishing the market economy system Table II-18.

Table II-18 | Economy of Lao PDR

	Details
GDP	13.8 billion dollars (2016)
Economic Growth Rate	7.6% (2015)
GDP per capita	1,921 dollars (2016)
Inflation Rate	1.28% (2015)
Monetary Unit	555Kip(LAK)
Exchange Rate	US$ 1 = LAK 8,094 (2016)
Foreign Exchange Reserves	1 billion dollars (2015)
Industrial Structure	Primary industry 24.8%, Secondary industry 34,7%, Tertiary industry 40,5% (2014)
Trade Size	Export: 3.1 billion dollars, Import: 3.9 billion dollars(2016)
Major Trade Products	Export: Mineral resources, agricultural products, electricity Import: Automobiles, machine components, construction materials, gasoline

Source: Ministry of Industry and Commerce(MOIC), 2016

Lao PDR, which is a least developed country in the international society, aims to make improvement from its current status by 2020 through the implementation of NSEDP. In fact, the annual average economic growth rate of Lao PDR recorded 8% from 2011 to 2013 and 7.5-8% from 2015 to 2015 despite the worldwide economic downturn. Foreign direct investment based on water power development and mining, ODA from the international society and donor countries greatly contributed to such economic development. The main trading partners are Thailand, China, South Korea, India, Germany, the United States of America, Singapore, the United Kingdom, the Netherlands and Japan.

Basically, in order graduate from the least developed country category, Lao PDR is pursuing balanced development of agriculture, forestry, industry, and service industry through its strong politics and stable society. Furthermore, along with the 8th National Economic and Social Development Plan mentioned above, 2025 strategy (10-year development strategy for 2016-2025) and 2030 Vision (15-year vision for 2016-2030) are all aiming for institutional stabilization through enactment and revision of its legislation.

3.2. Analysis of the CRVS System in Lao PDR

3.2.1. Development of the CRVS System

The CRVS system in Laos has handled family registration and issued identification cards based on the Law on Family Registration enacted in 1991. Under the Law on Family Registration, the head of the household or family representative reports to the village chief, who reports the birth on the family book owned by the family (within 30 days of births, no commission fee). The Ministry of Public Security manages the family book, while in the provincial areas, the governor, mayor, or village chief is in charge. The family book owned by each individual family is used to evidence birth in school enrollment or passport issuance.

In Laos, 'registration' refers to recording in the Family Book. Making an official registration into the civil registration system following a birth report and receiving a birth certificate is a procedure entirely different from making a registration into the Family Book. The CRVS system of Laos is based on the data recorded in the Family Book. The Family Book is similar to Korea's Family Registry or Family Relations Register. The original copy of the Family Book is kept by the family, and the copy is kept by the Ministry of Public Security. The information on household and individuals recorded in the Family Book is also recorded in the Village Family Book for statistical and administrative purposes.

This Family Book is extremely important in that its contents become the basic data for vital statistics. The Family Book is applicable to all residents of Lao PDR, whether living permanently or staying in Laos for a long time, regardless of citizenship. The Family Book is thus important for certifying the legal status of individuals or family, and all newborn children must be recorded in the Family Book. In this regard, the Family Book of Laos is even more important than the birth certificate.

3.2.2. Ministries Handling the CRVS

Under the Ordinance of the Prime Minister, the Ministry of Home Affairs was inaugurated in 2011 as the government ministry in charge of the CRVS dedicated to securing accurate data on vital life events. The Department of Citizen Management, which will oversee the development of the CRVS system to be established with the objective of providing data on vital life events, was transferred from the Ministry of Public Security.

The Prime Minister's Office recognized the need for cooperation among the ministries in the development of the CRVS system and established the Civil Management Inter-ministerial

Coordination Committee (CMCC) in 2013. The CMCC is chaired by the Deputy Minister of Home Affairs, and the Deputy Minister of Public Security, Deputy Minister of Education and Sports, Deputy Minister of Health, Chief of National Statistics Center in the Ministry of Planning and Investment, Deputy Minister of Foreign Affairs, and Deputy Minister of Justice serve as the members of the CMCC.

As a newly-inaugurated ministry, the Ministry of Home Affairs faces difficulty in securing CRVS initiatives among the central government ministries. Although it was established in 2011 under the Ordinance of the Prime Minister in 2011, most of the CRVS responsibilities and resources such as the management of the family card, the national ID, and databases are owned by the Ministry of Public Security. The Department of Citizen Management within the Ministry of Home Affairs is responsible for the development of the CRVS system, but the Ministry of Public Security continues to exert efforts[9] to maintain needed resources including CRVS initiatives and CRVS funding. The Family Bureau within the Ministry of Home Affairs administers the programming and operation of E-ID program. When CRVS and identity management system is integrated and developed, time and expenses can be saved, and flow of information among the relevant organizations can be improved. The E-ID system, in particular, can give rise to the issue of protecting the information of citizens and infringement of privacy, and as such, the Ministry of Justice and the Ministry of Home Affairs are discussing the enactment and revision of the Citizen Management Law.

3.2.3. The Status of CRVS Registration and Management

Vital statistics including birth/death registration are generally reflected in the family book, which is similar to Korea's census register. Civil registration data including birth and death certificates are managed in hardcopy form but many people are still not registering births and deaths. Information on births is registered on the system of the Ministry of Public Security, while civil registration information including birth registration is kept as hardcopies since a centralized civil registration database is yet to be established. The application form on birth registration also relies on the family book or the village family books, and the standard form has not yet even been established.

Another issue is the religious and cultural tradition of facing death at home. Causes of death are not officially recorded in many cases, and death statistics that include causes of death are virtually non-existent in Lao PDR.

9) Following the completion of the project in 2015, Korea provided additional assistance at the request of MOHA of Laos to be linked to the programs of the Korean Ministry of the Interior. A MOHA official from Laos was invited to the training program offered by the Department of Electronic Government within the Korean Ministry of the Interior. Only the MPS officials who received cooperation from MPI attended.

All births and deaths must be reported within 30 days and are recorded in the Big Family Book managed by the Ministry of Public Security. The Paksan District Office of Home Affairs recently started to process data every quarter and issue certificates on birth, death, marriage, relocation, and immigration. In order to receive the birth certificate, one must obtain certifications from the Ministry of Health, Ministry of Home Affairs, Ministry of Justice, and Ministry of Public Security. Documents for reporting births and deaths vary across regions[10].

When giving birth at an institution, the healthcare facility issues the certificate to the parents, and the parents must record it in the Family Book and the Big Family Book. When giving birth at home, the birth must be recorded in the Family Book, and birth notification must be obtained from the Ministry of Home Affairs. In order to receive the birth certificate, one must visit the Ministry of Home Affairs office, receive the application form for birth certificate from the office, and receive signatures from three witnesses in addition to the village chief. The documents drawn up must then be submitted to the office, and in order to receive the birth certificate, one must visit the office once again.

According to the Lao Social Indicator Survey of 2011 and 2012, birth reports were reported for 74.8% of children under five years of age, but only 16.6% had birth certificates when the survey was conducted. Each region in Laos has a unique birth and death reporting system, and the procedures are complicated as well as time-consuming and costly.

3.2.4. CRVS Legislations

Lao PDR has introduced diverse legislations relating to CRVS over the past two decades. On November 29, 1991, the National Assembly passed the Family Registration Act No. 07/PSA. Under the Family Registration Act, all family members including the family head must be registered into the Family Book managed by the Ministry of Public Security through consultation with the district representative. The Family Registration Act which was revised in 2009 provides the basic framework of the Civil Registration System in Laos.

Major ordinances constituting the legal framework for civil registration are as follows:

- The Constitution (2015; enforced in 1991, it was first revised in 2003. The second revision was made in 2015).
- The Family Registration Act (2009; it was enacted at the end of 1991 and went effective in early 1992).
- The Family Act (2008; enforced in1990)
- The Nationality Act (2004; enforced in 1990)

10) Korea Institute of Public Administration, Report on Overseas Business Trip to Laos (Nov. 1-Nov.7, 2015), 2015, p5

- The Statistical Act (2010; enforced in 2010)
- The Child Protection Act (2007; enacted at the end of 2006, enforced in early 2007)
- Law on Preventing and Combating Violence against Women and Children (2014; enforced in 2014)
- Administrative Order on Child Adoption No. 194/GOL (June 12, 2014.)
- Administrative Order on Passport No. 259/GOL(Aug. 24, 2011)

The following three ordinances are applied with regard to report on vital statistics.
- People's Supreme Court of Lao PDR 1990, Family Act No. 07/90/SPA (Nov. 29, 1990). Vientiane: GOL.
- People's Supreme Court of Lao PDR 1991, Family Act 03/SPA (Dec. 30, 1991). Vientiane: GoL;
- National Assembly of Laos 2010, Statistical Act No 03/NA (June 30, 2010). Vientiane: GoL.

List of existing legislation relating to CRVS can be summarized as follows:

Table II-19 | List of Existing Legislation Relating to CRVS in Lao PDR

Code	Documents	Responsible	Ref. No.	Endorsement Date	Enforce Date	Year of revision
L01	Constitution	National Assembly	01/PSA --/---	14/08/1991 06/05/2003	15/08/1991 28/05/2003	2003 2015
L02	Law on Family Registration	Ministry of Justice	03/PSA12/NA	30/12/1991 27/11/2009	06/04/1992 --/--/----	2009
L03	Law on Family	Ministry of Justice	07/PSA 05/NA	29/11/1990 26/07/2008	24/12/1990 --/--/----	2008
L04	Law on Lao Nationality	Ministry of Justice	06/PSA 05/NA	29/11/1990 17/05/2004	24/12/1990 --/--/----	2004
L05	Law on the Protection of the Rights of Children	Ministry of Justice	05/NA	27/12/2006	16/01/2007	
L06	Law on Violence Against Women and Children	Ministry of Justice	56/NA	23/12/2014	--/--/----	
L07	Law on Statistics	Ministry of Planning and Investment	02/NA	30/06/2010	--/--/----	
L08	Law on Labor	Ministry of Labor and Social Welfare	02/NA 06/NA	14/03/1994 27/12/2006	21/04/1994 --/--/----	2006
L09	Law on Education	Ministry of Education	03/NA 04/NA	08/04/2000 03/07/2007	26/05/2000 --/--/----	2007
L10	Law on Health Care	Ministry of Health	09/NA	09/11/2005	09/12/2005	
L11	Law on Drugs and Medical Products	Ministry of Health	01/NA	08/04/2000	22/05/2000	
L12	Law on Hygiene and Disease Prevention	Ministry of Health	01/NA	10/04/2001	25/04/2001	
L13	Law on HIV/AIDS	Ministry of Health	01/NA	29/06/2010		

Code	Documents	Responsible	Ref. No.	Endorsement Date	Enforce Date	Year of revision
L14	Law on Penal	Ministry of Justice	29/PSA --/--- 12/NA	23/11/1989 --/--/---- 09/05/2005	09/01/1990 --/--/---- --/--/----	2001 2005
L15	Law on Criminal Procedure	Ministry of Justice	30/PSA 01/NA	23/11/1989 15/05/2004	09/01/1990 --/--/----	2004
L16	Law on Heritage and Basis of Inheritance	Ministry of Justice	03/PSA 02/NA	27/06/1990 08/12/2008	27/07/1990 --/--/----	2008
L17	Law on Notary Offices	Ministry of Justice	04/PSA 11/NA	30/121991 26/11/2009	06/04/1992 --/--/----	2009
L18	Law on the Law National Assembly	National Assembly	05/NA 01/NA 01/NA 04/NA	25/02/1993 06/05/2003 17/07/2006 15/05/2010	23/03/1993 --/--/---- --/--/---- --/--/----	2003 2006 2010
L19	Law on State Budget	Ministry OF Finance	05/NA 02/NA	18/07/1994 26/12/2006	13/08/1994 --/--/----	2006
L20	Law on the Government of the Law PDR	Prime Minister's Office	01/NA 02/NA	08/03/1995 06/05/2003	30/03/1995 --/--/----	2003
L21	Law on National Defense Obligation	Ministry of National Defense	02/NA	08/03/1995	30/03/1995	
L22	Law on Election of National Assembly	National Assembly	05/NA --/--- 05/NA	12/04/1997 --/--/---- 15/12/2010	31/05/1997 --/--/---- --/--/----	2001 2010
L23	Law on Telecommunications	Ministry of Public Work And Transportation	03/NA	10/04/2001	25/04/2001	
L24	Law on Local Administration	National Land Management Authority	01/NA	21/10/2003	05/11/2003	
L25	Law on Judgment Enforcement	Ministry of Justice	03/NA 04/NA	15/05/2004 25/07/2008	14/06/2004 --/--/----	2008
L26	Law on Officers of the Lao People's Defense Force	Ministry of National Defense	07/NA	22/10/2004	15/11/2004	
L27	Law on Inspection	National Audit	02/NA	02/07/2007	17/07/2007	
L28	Law on Security Forces	Ministry of Public Security	03/NA	02/07/2007	17/07/2007	
L29	Law on Unions	Lao Trade Union	12/NA	25/12/2007	14/01/2008	
L30	Law on Making Legislation	Ministry of Justice	19/NA	12/07/2012	--/--/----	
D01	Decree on Citizen Management Coordinating Committee	Prime Minister's Office	71/PM 64/PM	26/07/2013 19/08/2015	--/--/----	2015
D02	Decision on Roles and Responsibilities of Multi-sectorial on CRVS	Citizen Management Coordinating Committee (CMCC)	01/CMCC	14/10/2013	--/--/----	--/--/----
D03	Decision on Leading Committee and Technical Committee for Drafting the Law on Citizen Management	Ministry of Home Affairs	276/MOHA	07/05/2015	--/--/----	--/--/----

Code	Documents	Responsible	Ref. No.	Endorsement Date	Enforce Date	Year of revision
D04	Decision on Roles and Responsibilities of Department of Citizen Management	Ministry of Home Affairs	312/MOHA	01/06/2012	--/--/----	--/--/----
D05	Decision on Registration Procedure	Ministry of Home Affairs	770/MOHA	31/10/2012	--/--/----	--/--/----
D06	Decision on Migration Procedure	Ministry of Home Affairs	633/MOHA	14/09/2012	--/--/----	--/--/----
D07	Decision on Notification of Birth and Death at Health Facilities	Ministry of Health	243/MOH	02/02/2015	--/--/----	--/--/----
D08	Decree on Permanent Residency of Foreigners, Lao Origin, Stateless People	Government of Lao PDR	472/GOL	13/12/2011	--/--/----	--/--/----
D09	Decree on Immigration	Prime Minister's Office	345/PM	28/09/2007	--/--/----	--/--/----
D10	Decree on Enforcement of Statistics Law	Government of Lao PDR	475/GoL	18/10/2012	--/--/----	--/--/----
D11	Decree on Internet Control and Usage	Government of Lao PDR	164/GOL	21/03/2012	--/--/----	--/--/----
D12	Decree on Technical Revenue	Prime Minister's Office	381/PM	23/12/2005	--/--/----	--/--/----
D13	Ordinance on Service Fees	Office of President	003/OP	26/12/2012	--/--/----	--/--/----
D14	Decree on Roles and Responsibilities of Ministry of Home Affairs	Prime Minister's Office	253/PM	19/08/2011	--/--/----	--/--/----
D15	Decree on Roles and Responsibilities of Ministry of Health	Government of Lao PDR	178/PM	05/04/2012	--/--/----	--/--/----
D16	Decree on Roles and Responsibilities of Ministry of Education and Sport	Prime Minister's Office	282/PM	07/09/2011	--/--/----	--/--/----
D17	Decree on Roles and Responsibilities of Ministry of Labor and Social Welfare	Prime Minister's Office	138/PM	04/05/2007	--/--/----	--/--/----
D18	Decree on Roles and Responsibilities of National Statistics Bureau	Prime Minister's Office	51/PM	25/02/2011	--/--/----	--/--/----
D19	Decree on Roles and Responsibilities of Ministry of Justice	Prime Minister's Office	404/PM	23/11/2007	--/--/----	--/--/----
D20	Decree on Roles and Responsibilities of Ministry of Public Security	Prime Minister's Office	79/PM	17/02/2007	--/--/----	--/--/----
D21	Decree on Roles and Responsibilities of Village Security	Prime Minister's Office	93/PM	13/03/2007	--/--/----	--/--/----
D22	Decree on Roles and Responsibilities of Ministry of Defense	Prime Minister's Office	348/PM	01/10/2007	--/--/----	--/--/----
D23	Decree on Roles and Responsibilities of Ministry of Post and Telecommunication	Prime Minister's Office	375/PM	22/10/2007	--/--/----	--/--/----

Code	Documents	Responsible	Ref. No.	Endorsement Date	Enforce Date	Year of revision
D24	Decree on Roles and Responsibilities of State Inspection	Prime Minister's Office	10/PM	26/01/2004	--/--/----	--/--/----
D25	Decree on Roles and Responsibilities of State Audit	Prime Minister's Office	24/PM	25/02/2004	--/--/----	--/--/----
D26	Decree on Child Adoption	Government of Lao PDR	194/GoL	12/06/2014	--/--/---	--/--/---
I01	Instruction on Collection of Statistical Population Data	Ministry of Home Affairs	06/MOHA	01/11/2012	--/--/----	--/--/----
I02	Instruction on Civil Registration at Ministry of Justice	Ministry of Justice	563/MOJ	11/11/2011	--/--/----	--/--/----
O01	Prime Ministerial Order on Compliance with the Court's Decision	Prime Minister's Office	38/PM	06/11/2006	--/--/----	--/--/----
O01	Prime Ministerial Order on Dissemination and Awareness of the Laws	Prime Minister's Office	38/PM	17/10/2007	--/--/----	--/--/----
O01	Prime Ministerial Order on Implementation of Legislation at Local Level	Prime Minister's Office	46/PM	29/09/2009	--/--/----	--/--/----
R01	Resolution on Law Drafting and Amendment	Standing Committee to National Assembly	43/SC	03/03/2009	--/--/----	--/--/----

3.3. CRVS Governance

Based on the Family Registration Act, the Ministry of Home Affairs is in charge of CRVS affairs. The Ministry of Home Affairs was established in 2011 by the Ministry of Public Security. MOHA administers the residence registration system, establishes rules for the operation of the registration system, procedures, registration of marriage and divorce, registration for issuing of ID number and card. Particularly, MOHA takes the chair of the CMCC (the Civil Management Inter-ministerial Coordination Committee) for the coordination of CRVS affairs between the ministries, and oversees the national resident registration system. The CMCC consists of vice ministers of the Ministry of Home Affairs, the Ministry of Public Security, the Ministry of Education and Sports, the Ministry of Foreign Affairs, the Ministry of Justice and the National Statistics Center.

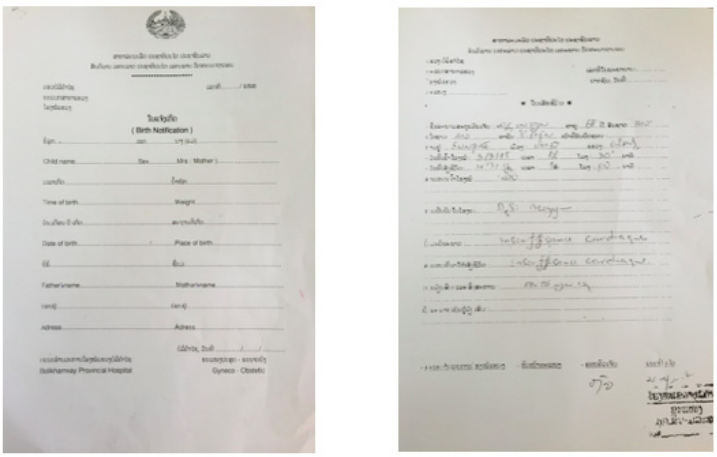
The Ministry of Public Security administers the issuance of ID cards, the management of immigration, the collection of population information, and the registration of family relationships. The Ministry of Education and Sports recommends registration of birth certificates upon enrollment in order to active the registration. The Ministry of Health notifies the Ministry of Home Affairs of information related to birth and death, and conducts public relations activities to promote registration. The Ministry of Foreign Affairs is responsible for issuing and

managing documents such as ID cards and passports for overseas residents, and is responsible for identifying the vital statistics by encouraging registration. The Ministry of Justice conducts legislative measures and adoption procedures for the smooth operation of CRVS related systems.

However, despite the fact that the above-mentioned CMCC is conducting consultation and coordination among CRVS related departments, proper and effective governance has not yet been established. Since there is no clear system for CRVS affairs, the Ministry of Public Security still manages the family books, and information sharing between the Ministry of Home Affairs and the Ministry of Public Security has not been achieved in an effective manner. Also, the birth notification must only be received through official health institutions—that is, the discussions between the Ministry of Home Affairs and the Ministry of Health have not been arranged regarding the details of the birth notification and the birth certificate. Thus, the system governance of Laos is not fully stable. The roles and responsibilities of the related ministries have not been clearly defined, and it is necessary to solve the problem of overlapping roles and interests among various ministries.

3.3.1. Obstacles to the CRVS System

Figure II-39 | Sample of Birth Registration Certificate in Laos



Source: MOHA, 2015

Typical obstacles to the CRVS system are realistic problems such as the complexity of registration procedures, costs, and relocation as well as low utilization of CRVS certificates. The complex procedures for birth registration (both for childbirth at home and hospital) requiring three visits to the Ministry of Home Affairs are difficult for people living in remote

regions to complete. The commission fees for birth registration (expenses for official seal per one page of the document) or for death certificate are a huge burden to the low-income class (about 15,000 Kip equivalent to USD 2, average monthly wage of the people of Laos is USD 200 to 300).

Also, the format of the birth registration is not standardized: different birth registration forms are used for different medical facilities even in the same region.

Even in the processing of passport issuance and school enrollment by the government ministries, family cards are used instead of official birth certificates or death certificates. The low utilization rate of CRVS system militates against the system taking root.

3.3.2. Improvement of the CRVS

Following the completion of the KSP-WB Joint Consulting Project in 2015, efforts are currently underway to revise the Law on Family Registration and to build the database on resident management within the Ministry of Home Affairs. Revision of the Law on Family Registration is currently underway with completion slated for 2017. The draft bill on the Law on Family Registration is expected to be completed in March 2017.

With the goal of linking the database on resident management to the Ministry of Home Affairs and regional offices, the Ministry of Home Affairs is further exerting efforts to estimate costs for this project and to secure the partner organization[11] that can match the additional costs aside from the government of Lao PDR.

3.4. The Status of Informatization

3.4.1. Policy and Regulation

In 2009, the Lao government planned to establish a communication network through strengthening of social security system, rural development strategy, industrial resource management, and industrialization through the '8th National Socio-economic Development Plan'.

11) This project is recommended based on the expansion in business scale and blueprint of the e-government, but because of the relationship of power within the Laotian government ministries and lack of capacity, MOHA will not likely be able to sustain the project or the budget, and is disinclined to expand the project. Due to the lack of appropriate scale of the project, obtaining adequate funding in such forms as loan investment from other organizations seems unlikely.

In order to develop the information and telecommunication sector, the Lao government introduced the national information and communication policy to create an easy investment environment, promote the technological development of the industry, expand the service smoothly, and improve the efficiency of the information and communication industry through the legal and institutional basis. Furthermore, the 9 priorities of ICT—development of industry facilities, research and development, application development, human resource development, legal foundation, improvement of ICT awareness, poverty eradication, and regional revitalization —were presented.

In 2006, Science and Technology Agency (STEA) under the Office of the Prime Minister created an e-government department and began implementing some projects. STEA changed its name to the National Authority of Science and Technology (NAST). In August 2011, e-government projects were transferred to the Ministry of Posts and Telecommunications (MPT). In the end, Laos built basic infrastructure such as backbone network, national internet center, and web site construction by department. In particular, related to e-government, the project was implemented in cooperation with China in 2006. From 2008 to 2011, a three-step plan was established to make computerized and online environment for government, ICT infrastructure at national level and the National Internet Center. According to the plan, in order to build an e-government infrastructure, the main contents of the project are to connect major departments and other government agencies, to supply IT devices such as servers, PCs and to train relevant personnel. Through this, the e-government data center and the National Internet Center which play a key role in the national ICT policy as well as the resident registration and vital statistics in Laos was established.

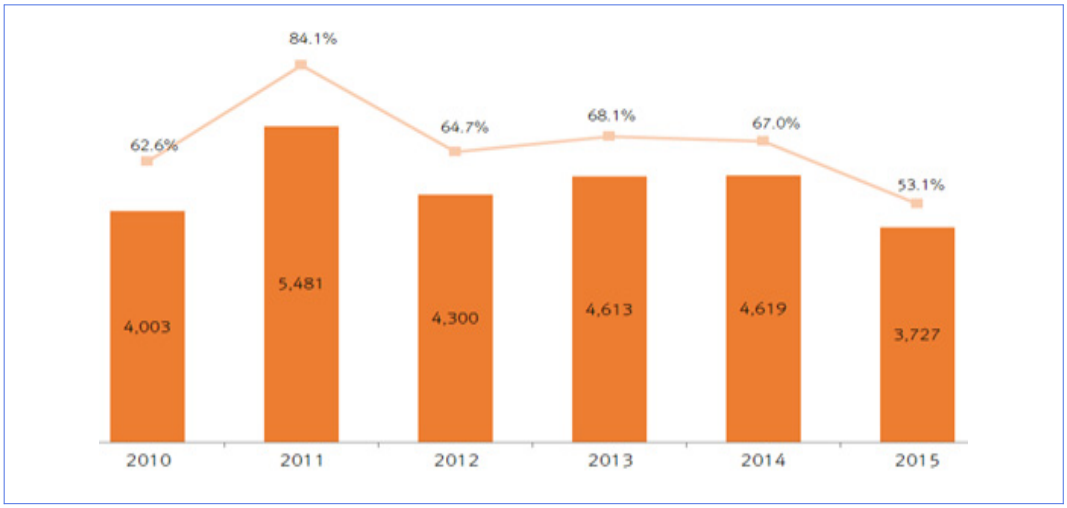
3.4.2. Informatization

The penetration rate of wire communication in Laos has increased significantly since 2011, increasing from 1.6% in 2010 to 13.7% in 2015. At the same time, the number of wire communication subscriber also recorded an annual average growth rate of 53.3% at 103,000 lines in 2010 and 962,000 subscribers in 2015. On the other hand, wireless communication or mobile communication subscribers do not appear to have increase significantly. In 2015, the penetration rate of wireless communication was 53.1%, which is about 14% less than 67.0% in 2014. And its subscribers also recorded 372,700 in 2015, but decreased by 19.31% over the previous year's 461,900 lines. The registration and penetration rate of mobile and wire communication in Laos are shown in Figure II-40 and Figure II-41 below.

Personal Internet usage trend from 2010 to 2015 in Laos is shown in Figure II-42 below. According to the ICT Development Index of ITU, Laos was ranked 144th, 2.45point in 2016. The informatization of Laos is growing rapidly according to the national promotion, but it seems

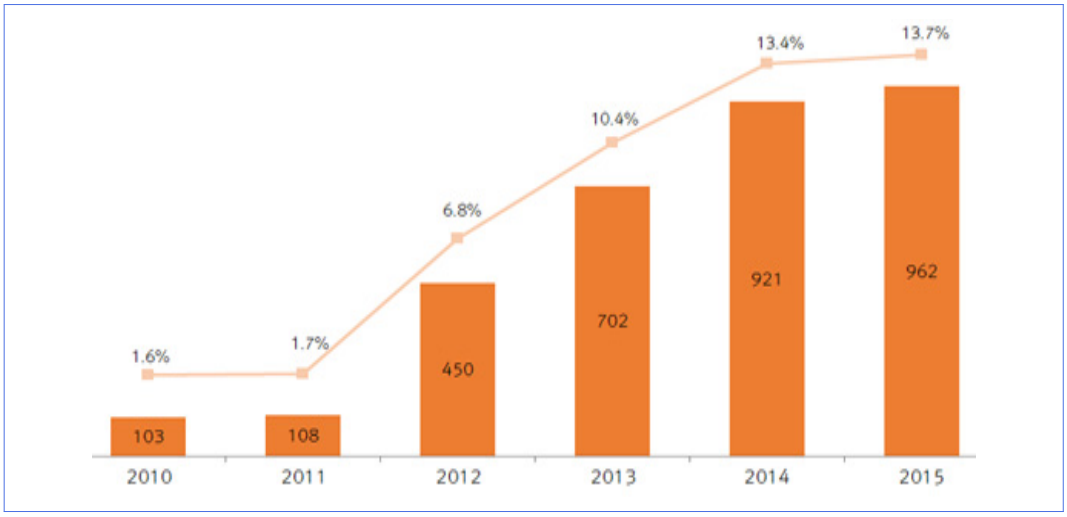
that it is difficult for all citizens to use information and communication services at this point. According to the ITU, the proportion of households with computers in 2016 is 12.3%, with 11.7% of households accessing the Internet and 24.8% of the population using the Internet.

Figure II-40 | Mobile Communication Registration and Distribution Rate in Laos (one thousand, %)



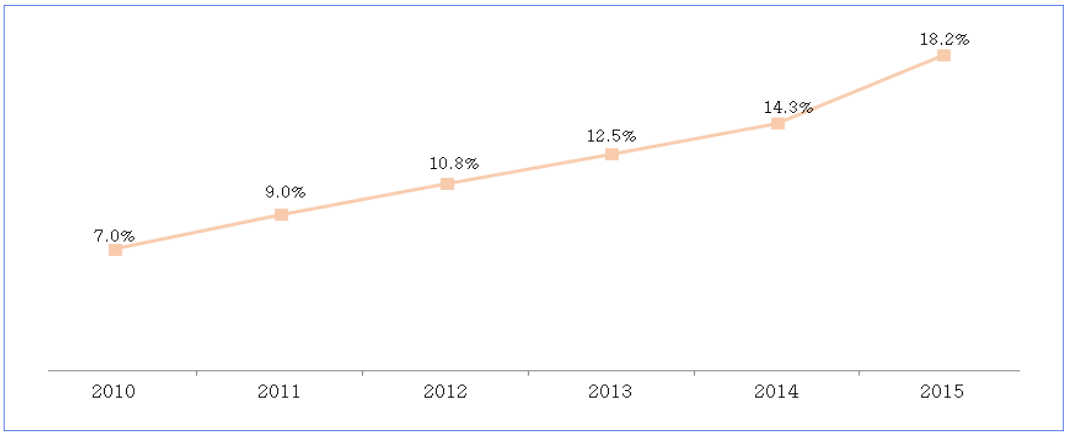
Source: CONEX, 2016

Figure II-41 | Wire Communication Registration and Distribution Rate in Laos (one thousand, %)



Source: CONEX, 2016

Figure II-42 | Personal Internet Usage Rate in Laos (%)



Source: CONEX, 2016

Due to this national situation, the ICT market in Laos cannot easily grow. There is little overall assessment of the ICT market in Laos, and some of the information about ICT products and services are included in the GDP statistics available from the statistics office. Laos has a very small ICT market in terms of GDP compared to countries with similar levels, so the market itself is not dynamic and proportional to GDP growth.

Laos's network is still around 3G. Especially, in 2014, the optical fiber network has a total bandwidth of 13Gbps, using the same gateway as China, Vietnam, Cambodia and Myanmar, and the length is 63,060km. In the past, telecommunication carriers built their own network infrastructures because they did not have a National Information Infrastructure(NII). However, through the national transmission network construction project from 2010 to 2012, Laos establishing a fiber-optic network and base stations that interconnects more than 130 government agencies, 250 offices in the province

3.5. Statistical Capacity Analysis and Educational & Training Measures for Long-term Management

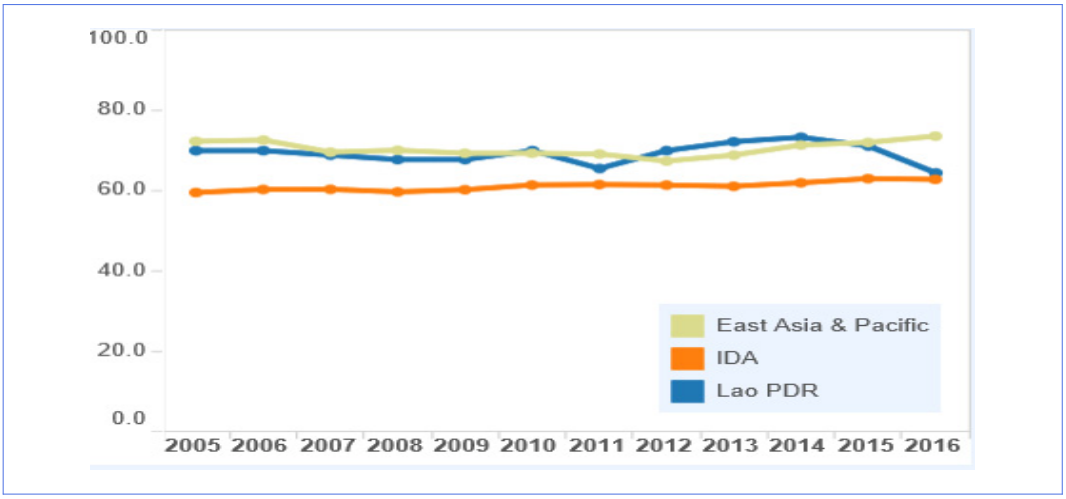
Table II-20 below shows the SCI points of Lao PDR and Figure II-43 shows the SCI trend of Lao PDR and its comparison with countries participating in SCI such as IBRD countries, and East Asian and Pacific countries.

Table II-20 | Trend of Lao PDR's Statistical Capacity Indicator

Indicators	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Methodology (0 - 100)	50	50	50	50	50	40	40	50	50	60	60	50	50
Periodicity and Timeliness (0-100)	90	90	90	86.7	83.3	83.3	90	86.7	90	86.7	90	93.3	83.3
Data Sources (0-100)	70	70	70	70	70	80	80	60	70	70	70	70	60
Statistical Capacity Indicator (overall average)	70.00	70.00	70.00	68.90	67.77	67.77	70.00	65.57	70.00	72.23	73.33	71.10	64.43

Source: World Bank Statistical Capacity Indicator Dashboard.
http://datatopics.worldbank.org/statisticalcapacity/SCIdashboard.aspx

Figure II-43 | Trend of Lao PDR's SCI and Comparison with other Nations



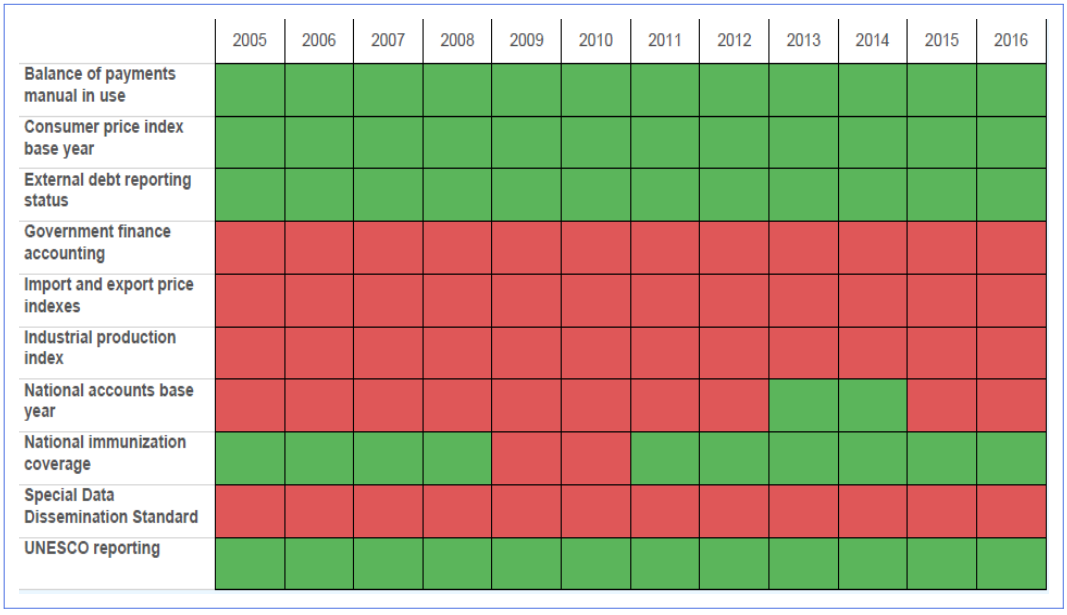
Source: World Bank Statistical Capacity Indicator Dashboard.
http://datatopics.worldbank.org/statisticalcapacity/SCIdashboard.aspx

Regarding the total average points, the statistical capacity score of Lao PDR from 2005 to 2016 is 60 points on average, which is slightly higher than that of IDA. However, it has recently dropped by a great amount from average points similar to those of East Asian and Pacific countries to the average points of IDA. The statistical capacity of Lao PDR is quite similar to that of developing countries, but is assessed to be unstable. However, it is necessary to analyze the indicators respectively, since this is only the average point of sub-indicators.

3.5.1. Methodology

Figure II-44 below indicates the points of statistics writing methodology index among the SCI of Lao PDR. Every detailed index is measured as 0 or 1 point. Lao PDR showed lack of capacity, recording almost 0 point in indices such as Government Finance Accounting, Import and Export Price Indices, Industrial Production Index, National Accounts base year, Special Data Dissemination Standard.

Figure II-44 | Lao PDR's SCI: Trend of Methodology Scores



* Red indicates 0, while green indicates 1.
Source: World Bank Statistical Capacity Indicator Dashboard.
http://datatopics.worldbank.org/statisticalcapacity/SCIdashboard.aspx

Government Finance Accounting index indicates the integration level of accounting standards applied for reporting finance data of the central government. Import and Export Price Indices index measures whether the export and import price indices are announced monthly or quarterly. In addition, Industrial Production Index indicates whether the changes of industrial production have been measured and the result of its observation and analysis is announced monthly or quarterly. National Accounts base year indicates whether the countries' annual accounting standards are performed or not and whether the accounts base year is within last 10 years or not. Member states of the Special Data Dissemination Standard, which is the standard economic and finance data provision established by IMF to activate international economy, should abide by the standards and provide related data in order to pursue benefits for all. This Meta data is posted on the Dissemination Standard bulletin board of IMF is expected

to increase data availability and activate the finance market by allowing well-timed and comprehensive correspondence. Therefore, the index indicates whether or not the country is a member and subscribing reliable data. According to these standards, Lao PDR is greatly below that of Government Finance Accounting, Import and Export Price Indexes, Industrial Production Index, National Accounts base year and international standard.

3.5.2. Data Sources

The index of Data Sources capacity of Lao PDR can be found in Figure II-45. Detailed index is measured as 0 point and 0.5 point. Index regarding Vital Registration System Coverage records the features of main issues related to population and judges its smooth facilitation as a basic data source of a national statistic. A country that has a statistical record of vital coverage can draw correct and well-timed demographics. However, Lao PDR seems to show no such performances from 2005 to 2016.

Figure II-45 | Lao PDR's SCI: Trend of Data Sources Scores



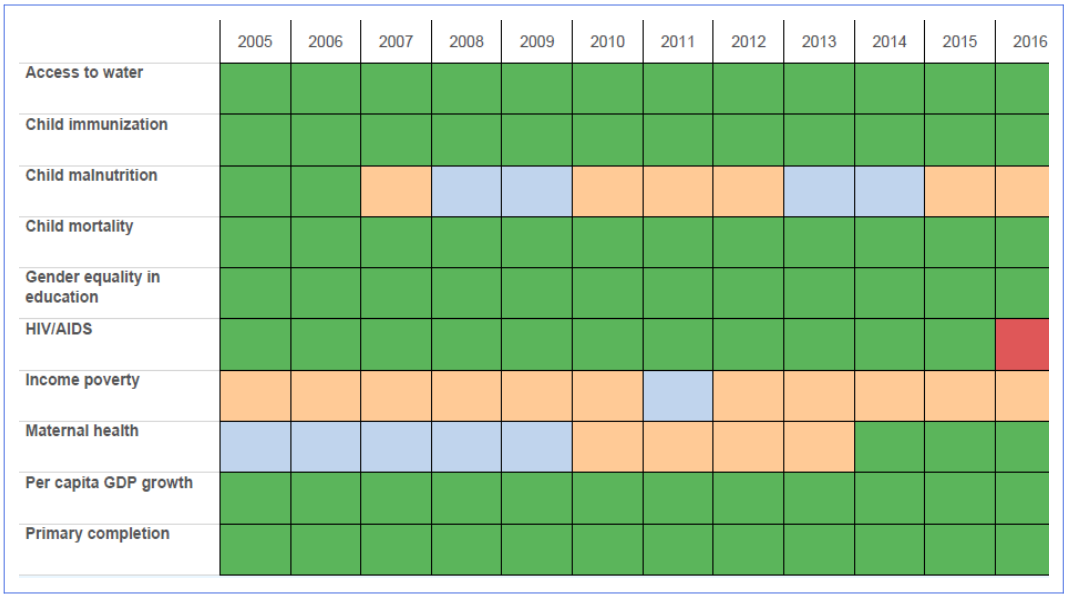
* Red indicates 0, orange 0.6 and green 1.
Source: World Bank Statistical Capacity Indicator Dashboard.
http://datatopics.worldbank.org/statisticalcapacity/SCIdashboard.aspx

3.5.3. Periodicity and Timeliness

Figure II-46 indicates the points regarding the Periodicity and Timeliness index among the SCI of Lao PDR. Detailed index is measured as 0, 0.3, 0.6 or 1 point. Lao PDR shows good results in most of the indices of Periodicity and Timeliness, but shows low points in some indices such as Child Manipulation, Income Poverty, and Maternal Health. Indices such as Child Manipulation are based on the child development standard, newly announced by WHO in 2006.

Child nutrition is related to low education quality and lack of healthcare service utility. This is especially related to the UN Millennium Development Goals (hereinafter, MDGs), which works as a basis of national operation and welfare system. Income Poverty measures the degree of a country's effort to eradicate poverty. Maternal Health is related to goal 5 of the MDGs, aiming to reduce maternal mortality by 3/4 from 1990 to 2015, and indicates the level of healthcare system providing enough support for delivery and post-natal care. In the case of Lao PDR, indices regarding child and maternal welfare and poverty are lacking.

Figure II-46 | Lao PDR's SCI: Trend of Periodicity and Timeliness Scores



*Red indicates 0, grey 0.3, orange 0.6 and green, 1.
Source: World Bank Statistical Capacity Indicator Dashboard.
http://datatopics.worldbank.org/statisticalcapacity/SCIdashboard.aspx

The Ministry of Planning and Investment of Lao PDR operates demographic survey every decade and processes diverse regular surveys such as the social index survey. However, according to the assessments of external institutions such as international organizations, the overall statistical validity and reliability of Lao PDR turned out to be not so high. However, since most of the indices are not shown to be low continuously, not intermittently, and they are overall incomplete or absent, it is necessary to focus on the indices with low points for statistical capacity building.

3.6. Analysis of Strengths and Weaknesses of Lao PDR's CRVS

The major strength of Lao PDR's CRVS is that the government is aware of the necessity of the system and actively pushing forward the implementation of the system. As a result, the Ministry of Home Affairs is operating diverse activities such as training programs for internal capacity building, regional data collection, promoting and devising institutional strategies for increased birth registration. Furthermore, Lao PDR announced the 8th social and economic development plan as a national long-term plan, and national policies are propelled to attain goals by 2020. Agreeing to the efforts of Lao PDR, World Bank is also providing active support Lao PDR to attain the goal 16.9 of the SDGs, 'by 2030 provide legal identity for all, including birth registration'.

Despite the efforts, strong governance is lacking due to the weak inter-department cooperation system even though there is a governmental committee such as CMCC. Furthermore, the national economy environment especially the IT development level of Lao PDR is very low—recorded as the 109th according to WEF. Therefore, IT services such as computers and internet are mainly used in big cities whereas computer and internal utility rate of rural areas are 7.9% and 3.2% respectively. In this situation, Lao PDR has a difficult structure to gain public support.

3.7. Policy proposal and educational & training measures through Comparison with Korea

3.7.1. Systematic Governance for Stable Operation of Resident Registration System

The family book in Laos is similar to the family register in Korea. Korea introduced the Family Relationship Registration System after the judgment of unconstitutionality of the family register system that was introduced from China and the Japanese colonial period and the military era. In other words, the historical background and the government's strong promotion with the political environment could make the RR system. Based on this comparison, expansion of computer network and informatization of resident registration system could be systematically and naturally settled. On the other hand, Laos is trying to introduce the system for the civil registration and vital statistics in an environment where informatization has already become generalized all over the world, and therefore a different approach is required from the background in which the Korea's related system was introduced. In this regard, the public officers, along with the general citizens must sympathize with the necessity of introducing

RR systems and actively cooperate. Furthermore, unlike Korea, Laos has a cultural tradition to die at households, therefore needs a clear system to manage it.

In addition, the governance system that promotes policies at the practical level is not systematic in Laos. Despite the Ministry of Home Affairs, which is supposed to supervise resident registration affairs under the Family Registration Act, the Ministry of Public Security still manages these matters. In Korea, the judiciary and the administration share the related system. On the front line, the practice level of related administration is being carried out at resident's centers in city, county (gu), dong, eup and myeon. Vital statistics are also systematically organized by the Ministry of Strategy and Finance and the Statistics Korea, including the Statistics Act and the Rules on the Population Survey etc. On the other hand, while Laos has a specialized promotional organization called CMCC, it fails to exert its full capacity due to the competence of relevant ministries and the lack of cooperation. Therefore, as mentioned above, it is necessary to clearly summarize the operating basis and scope of the organizations and establish the governance appropriate in Laos.

3.7.2. Establish A Clear Legal System

In addition to such historical and cultural backgrounds, Laos, in contrast to Korea, is not provided with a legal system as the basis for implementing the system. Korea has clear legal systems for informatization like the Electronic Government Act, Act on the Registration, ETC. of Family Relationships, and Civil Petitions Treatment Act. Furthermore, to protect related systems and information, Korea has Digital Signature Act and legislations on information security. However, Laos has only recently implemented legislations for informatization, there are no laws and regulations about information security and personal information protection. Particularly, in order to pursue the related policy in the current technical environment, it is necessary to establish a stronger legal system by considering the dysfunctions together.

3.7.3. Strengthening the Capacity of CRVS departments

The biggest problem for the revitalization of the Laos's CRVS system is the lack of competence and procedures between related departments and cooperation system. Despite the fact that the Ministry of Home Affairs is overseeing the CRVS policy, the main tasks are still scattered in the Ministry of Public Security and the Ministry of Health. Therefore, forms of various documents are not integrated at the regional offices used by the citizens, and the people also have low recognition level because they do not sympathize with the necessity of registration.

In order to establish a clear governance system, it is basically necessary to strengthen the capacity of CRVS departments and the status of the Ministry of Home Affairs and CMCC. It is also necessary to introduce a systematic legal system related to CRVS as an institutional basis. Based on such a foundation, information sharing, constructing the related infrastructure, education and training, and standardization will be possible if a policy promotion system is established.

Laos will actively promote the introduction of informatization and CRVS systems at the governmental level, so that the priority base will be constructed if institutional and financial problems are resolved. There is a need to provide consultation and support through ongoing field surveys and researches at an international level.

III. Case Study on Korea's Experience

1. Introduction

1.1. Adequacy of Korea's Experience

Korea's experience would be the most appropriate for developing countries to benchmark when introducing their own CRVS systems. Korea's CRVS system dates back to the 8th to 9th century AD, and it has continually evolved in line with societal change. Today, it is extremely advanced. During the process of nation building in the 1960s, Korea managed to establish an effective RR System. CRVS was instrumental in rebuilding the nation from the upheaval and rubble in the aftermath of Japanese colonial rule and the Korean War, and it was a crucial factor in Korea making a quantum leap both socially and economically in the ensuing years. Since the 1990s, the government has aggressively responded to the information age, successfully upgrading CRVS by reinforcing services for the public through the use of the government's telecommunications infrastructure and the internet. CRVS during the initial stage merely served as a tool for basic governance, but it has since become an important means of providing public services including welfare services in a timely, efficient, and effective manner.

Korea's CRVS system is considered world-class in all respects of design and utilization, so developing countries introducing CRVS should benchmark Korea's case.

1.2. The Basic Structure of this Chapter

Chapter 2 introduces applicable laws on Korea's CRVS and discusses its development through the years. Institutional changes are analysed in-depth beginning from the period when the applicable laws first came into place to pre-modern and modern times. Changes in applicable laws including the family register system, FRR system, and RR system are categorized by period.

The report examines the measures taken in response to major political, economic, societal and technological change.

Chapter 3 focuses on the key elements for the success of the system, management of crises, complementary and resolution measures based on the development of Korea' CRVS system, the development plans, and analysis on the transformation process. The key factors for the successful planning and establishment of the CRVS system are derived from analysis of the governance system during the system development process.

In addition to literature analysis, Chapter 4 includes in-depth interviews with policymakers and experts to derive basic policy implications regarding success factors, challenges, and complementary and resolution measures demonstrated during the process of developing and administering the CRVS system in Korea. Measures for development and application of features appropriate to the partner countries are presented to assist them in formulating policy sharing cooperation measures.

2. Framework of Korea's CRVS: Changes and Current Status

Korea's CRVS has three elements: (1) FRR (formerly Family Register); (2) RR, and (3) Vital Statistics (Population Change Survey). FRR refers to 'matters concerning the registration of establishment and change of family relations such as birth, marriage, death etc. of people and matters concerning certification thereof' (Article 1, Act on the Registration, etc. of Family Relationship). FRR was introduced after the former system of family register was ruled unconstitutional by the Constitutional Court, after being criticized for being patriarchal, under which the family relationship was determined with the head of the household at the center. RR has the purpose of 'clearly identifying and keeping track of the migratory status of residents in its territories and to register residents to improve convenience for them and to appropriately handle administrative affairs (Article 1, RR Act). Vital Statistics (Population Change Survey) is a survey on the citizens of the Republic of Korea living in and out of Korea on the four categories of birth, death, marriage, and divorce (Regulations on Vital Statistics, Decree by the Ministry of Strategy and Finance).

Although these three systems have different objectives and contents, they are closely related. FRR identifies the family relationships, or blood-tied relationships, on the categories of birth, death, divorce, adoption, disappearance, etc., and these become the basic information for RR, which is necessary for mobilizing human resources and providing social welfare services for residents within specific regions; and for taking the population census of all Korean

nationals, whether living in the Republic of Korea or abroad. The FRR, RR, and Vital Statistics therefore need to be examined as a whole. This report will first review the family register system, which was the predecessor to FRR, and then RR and VS.

2.1. Basic Structure of Korea's CRVS System

Korea's Civil Registration consists of FRR and RR. FRR verifies the organizational structure per individual and per family for the purpose of registration and verification of occurrences and changes in family relations such as birth, marriage, divorce, and adoption. RR is the management of legal domiciles of citizens to provide quality public service delivery for voting, tax payment, social security, etc. by assessing the residential relationship and other indicators of population movement.

Table Ⅲ-1 | Comparison between FRR and RR

Category	FRR	RR
Subject of Registration	Birth, death, marriage, divorce, etc.	Birth, residency (residency of 30 days or over)
Responsible Government Agency	Supreme Court	Ministry of the Interior
Location of Registration	City/district, community, overseas locations	City/country/district, community
Location to be Registered	Location of registration	Residence (may be the same or different from the location of registration)
Registration Book	RRF Register	RR card (individual, household)
Reporting Deadline	Within 30 days of the occurrence of birth, death, etc.	Within 14 days of the occurrence of the reason to report
Fine for Negligence for Violating the Obligation for Registration	50,000 KRW	Fine under 50,000 KRW

Source: Song, H. J. et al, 2016

Korea's CRVS is characterized by the following: First, FRR is the revised system of family register, which had traditionally been used as a means of verifying family relationship in a patriarchal society, and is different from RR, which serves the administrative purpose of identifying members of a given local community or region. Table III-1 shows the differences between FRR and RR such as who needs to be registered, the responsible government agency, registration locations, register books, reporting deadlines, and fines for negligence for violating the obligation for registration.

Second, the upper governance of CR is delegated to the judiciary (Supreme Court) and administrative agencies (MOI) but the actual tasks are handled in an comprehensive manner within the 225 city/county/district offices *(Si/Gun/Gu)* and 3,560 community service centers *(Eup/Myeon/Dong)* because of the differences in the historical background, policy objectives, details, and means. From the three local administrative tiers, the highest tier of the wide area autonomous local governments (17 metropolitan cities and provinces) do not play a key role in CRVS. In addition, administrative agencies are obliged to maintain continuity and consistency of CRVS information in accordance with Article 15 of the RR Act.

Third, any changes in the location of FRR are required to be reported to the appropriate city or community offices within 30 days and any changes in RR within 14 days. Also, if a report is made in RR for a relocation that follows change of domicile, this act is regarded as having fulfilled the mandatory reporting of change of domicile in accordance with the Military Act, the Framework Act on Civil Defence, the Certification of Seal Imprint Act, the National Basic Living Security Act, the National Health Insurance Act, and the Act on Welfare of Persons with Disabilities (Article 17, RR Act). The RR Information System automatically updates RR information using the administrative information sharing system.

Fourth, citizens and public servants are legally obligated to register any changes and all processes related to FRR and RR. Imposing fines for any violation of this compliance ensures that CRVS information is collected and updated automatically in a timely manner.

Fifth, the collected CRVS information is input, circulated, shared, saved, and backed up by various information systems to be utilized for administrative purposes in real time. For greater efficiency, the information system for all CRVS processes has been developed and shared with other information systems for joint use.

2.2. The Family Register and the FRR Systems

2.2.1. Family Register System

1) Transformation of the Family Register System

a) Pre-modern Era

The Family Register system in Korea, introduced from China, is the record from the birth to the death of an individual and carries detailed information on the individual's status including nationality, legal capacity, and kinship that is publicly announced. The system has been used as far back as the 8th or 9th century, the Unified Silla period (Chung, H.S., 2005; Chun, B.D.,

1982). Back then, the system was used to take the census, mobilize labor, and collect taxes. The registry adopted the system of grouping people into nine grades depending on the size of family. Individuals were classified into seven grades depending on age. There was also the indication of gender and social status. The census was also taken door-to-door on the number of livestock, land holdings, and even the number of trees. The basis of the statistics was the family, and it can be seen that the Family Register system in the Silla period was based on the family (Chung, B.D., 1982).

The Family Register system in the Goryeo Kingdom made a distinction between the ruling class and the common people. The family register for commoners was compiled to be used for conscription and corvée labor. The family register for the ruling class, on the other hand, made detailed records of the lineage of the family head, children, siblings, nephews, son-in-law, and other relatives living in the same household, as well as lineage of the slaves, names and ages of the slaves, and status of the spouses of the slaves. The basic unit of the family register was the household for both the upper class and the common people, and it has similar features as today's RR system (Chun, B.D., 1997). Unlike the modern family register, which records the relationship of family members with the family head at the center, the ancient family register is noteworthy in that it recorded individual family relationships based on married couples, father and son, or sibling relationships (Kim, S.Y., 2002).

It can be confirmed in *Gyeongguk Daejeon,* which is a collection of codes of rules for a centralized bureaucracy, that the family register system was systematically established in the Joseon period. In addition to surveying and identifying the number of family members for the purpose of collecting taxes and mobilizing labor as in the Goryeo period, the family register system in Joseon reflected the feudal caste system, and it imposed more rigorous rules on confirming the social status of an individual to determine the burden of labor and taxes depending on one's status (Chung, H.S., 2005). During the Joseon period, under the influence of neo-Confucianism, which was the ruling ideology, the system was shifted to patriarchal-based recording from recording of individual family relationship of the Goryeo period, and the matriarchal listing was omitted (Choi, H.G., 1997). Even during the Joseon period, however, all the persons living in the same household were recorded in the register, including children, relatives, slaves, and employees. However, children living away from home were provided with an additional household known as 'ho' and were not included in the family register of parents. Like today's RR, the family register recorded all persons living together regardless of status (Chung, H. S., 2005).

b) Modern Times

With the launching of modern reforms following the Political Reform of 1894 at the end of Joseon period, Regulations on Census were enforced in 1896. Back then, census taking

recorded such details as the age of the family head; family clan; occupation; history of residence; four ancestors including father, grandfather, great grandfather, and maternal grandfather; number of employees; the ownership of a house; and size of the house, etc. under the organization of the residence unit. The family register was substantially transformed under Japanese colonial rule with the enactment of the Census Registration Law in 1909 following the establishment of the Residency-General. Under the Census Registration Law, relatives and in-laws were integrated with the family head at the center to organize a 'household', and their family relationships were described in the census registration. The original permanent residence was referred to as the 'place of family register' and also included in the census registration were records on 'births, deaths, changes in family head, marriage, divorce, adoption, dissolution of adoption, setting up of branch family, relocation, and name changes, among other details (Chung, H. S., 2005).

As seen here, during Japanese colonial rule, Korea's family registry took the form of recording one's status with focus on one family head, as was done under the Japanese family register. Changes in one's status from birth to death were recorded with respect to the family head. The document certified the relationship between the family head and the member of the household, and all events including birth, death, change in the family head, and starting of a new family were recorded (Choi, H. K., 1997). This gave rise to a new form of patriarchal authority with the family head becoming the presider for an entire extended family in all legal matters (Chun, B. D., 1997).

c) Establishment of the Government of the Republic of Korea

The Japanese ordinance on the family register system remained in use even after the inauguration of the government of the Republic of Korea in 1948. It was on January 1, 1960 that the Family Register Law was enacted as Law No. 535 following the enactment of the Civil Law in 1958. Most of the regulations under the old law, however, remained in place, and the significance of the family register as a document certifying one's individual status within a household was not changed (Choi, H.K., 1997). The 'household' under the Civil Law refers to an abstract form of community of relatives with the main objective of succeeding the patriarchal lineage, and has no relevance with the actual residential status of an individual (Kim S. Y., 2006). The family register reflected the composition of a family and the principle of organization with the family head at the center instead of the individual, and the principle of paternal succession was maintained. The family register was reorganized if the family head changed as a result of a successor inheriting the head of family status.

d) Introduction of the FRR System

The family register system had been in place since the establishment of the government

of the Republic of Korea and was abolished in 2005 after being ruled unconstitutional by the Constitutional Court on the grounds that it violated an individual's integrity and was contrary to the principle of gender equality.

Three alternatives for replacement of the Family Register system have been proposed: (1) organization by basic family; (2) integration with the RR system; and (3) organization for each individual. Organization by basic family refers to organizing the register based on the married couple or an individual while retaining the current family register system. Integration of the system with RR refers to consolidating the family register system, which is designed to register and certify an individual's status, with the RR system, which registers and certifies the RR of an individual and processes the basic information of population administration. Organization of the system for each individual refers to having an individual identification registration from the time of birth, which would make the individual a representative of one's resident identification card. Unlike the family register, which has 'relatives' as the basic unit, this system would have the 'individual' as the unit in identification registration (Chung, H. S., 2005).

Following public debate concerning the three alternatives, the FRR System, which has the individual at the focal point, was adopted as a means of minimizing confusion in the aftermath of abolishing the Family Register system.

2.2.2. FRR System

1) Overview of the FRR System

FRR was introduced following the abolition of the Family Register system. It refers to all recording and verification of occurrences and changes in family relationship such as birth, death, marriage, divorce, and adoption. The basic unit of identification under the FRR system is the 'individual'. The FRR information includes the traditional blood ties and relative relationship such as location of registration, name, gender, date of birth, marriage, and divorce of oneself and parents. Accordingly, the basic details of the structure of FRR such as birth, death, marriage, and divorce afford a clear legal foundation laid out in the relevant regulations with regard to matters such as the time of declaration, declaration form, accompanying documents, persons obliged to make the report, reporting location, and other relevant details (Table III-2).

Table Ⅲ-2 | Basic Structure of FRR (Act on FRR)

Category	Birth Report	Death Report	Marriage Registration	Divorce Declaration
Basis of Registration	Articles 20, 21, 44-51	Articles 20, 21, 84-91	Articles 20, 71-73	Articles 20, 74-78
Deadline for Registration	Within one month of birth date	Within one month of knowledge of death	No fixed deadline. However, marriage by trial must be reported within one month of date of trial	Divorce by mutual consent: within three months of court confirmation issuance date Divorce by trial: within one month of date of trial
Registration Form	Birth registration	Notice of death	Marriage certificate	Divorce statement
Accompanying Documents	Birth certificate (doctor)	Death certificate or post-mortem examination certificate (doctor)	Marriage by trial: copy and certificate of conclusion of judgment (Court)	Divorce by mutual consent: copy of confirmation Divorce by trial: copy and certificate of conclusion of judgment (Court)
Persons Obliged to Report	Parents	Relatives residing together	Persons concerned	Persons concerned
Reporting Location	Location of birth, location of registration, government office of address of person reporting	Location of registration of deceased, location of death, burial, cremation, government office of the address of person reporting	Location of registration for persons concerned, government office of their address	Location of registration for persons concerned, government office of their address

Source: Song, H. J. et al, 2016

2) Birth Report

The person responsible for filing the report of birth of an infant must be one of the following: (1) parent for birth within wedlock; (2) the mother for birth out of wedlock; (3) if neither are feasible, a relative living together or the doctor/midwife assisting the childbirth. In the upper section of the birth report, (1) the infant's name, family clan, gender, location of registration, (2) the classification of birth in wedlock or out of wedlock, (3) the date of birth, location, and other details must be filled out. A person may change the location of FRR freely, and is required to report the changes to the appropriate administrative agency of the new location of registration at the time of the change. Since an infant cannot obviously select the

location of registration, the location of registration of the parents is generally used. Details including the gestation period of the infant, weight of the infant, and nationalities of the parents, etc. are to be included in the Vital Statistics section of the Population Change Survey at the bottom of the birth report (Table Ⅲ-3).

Table Ⅲ-3 | Information Entered on Each Registration Form

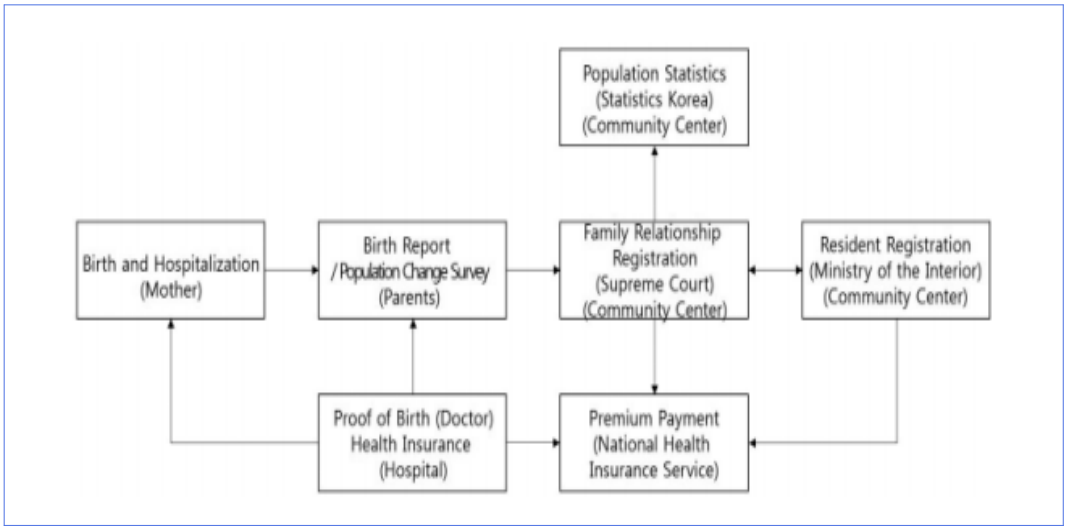
Category	FRR Information (Supreme Court)	Vital Statistics (Statistics Korea)	Accompanying Documents
Birth	• name, gender, in wedlock/out of wedlock birth, location and time of birth, address, RINs of the parents, location of registration of the parents, letter of agreement on surname, name/qualification/phone number of person reporting	• gestation week, weight, multiple births (order of birth), nationalities of parents, actual date of birth, school graduations, occupation, actual starting date of marriage, total number of births by mother	• birth certificate (doctor): name/age/occupation of parents, mother's address, location/date/time of birth, name/gender of the infant, period of pregnancy, multiple birth (order of birth), physical condition/weight/health of infant, number of births by mother
Death Marriage	• name, RIN, location of registration, address, date of marriage, dissolution before death, surname agreement status • name, RIN, location of registration, address, date of previous marriage dissolution, surname agreement status	• cause/type of death, time period of sickness, type/time of accident, region/location of accident, nationality, school graduations, occupation, marital status • actual starting date of marriage, nationality, type of marriage, school graduations, occupation	• post-mortem examination certificate (doctor): name, gender, RIN, actual date of birth, family clan and address, time/location/type/cause of sickness and death
Divorce	• name, RIN, location of registration, address	• actual starting date of marriage, actual date of divorce, number of children under 19, reason and type of divorce, nationality, school graduations, occupation	
Birth	• name, gender, in wedlock/out of wedlock birth, location and time of birth, address, RINs of the parents, location of registration of the parents, letter of agreement on surname, name/qualification/phone number of person reporting	• gestation week, weight, multiple births (order of birth), nationalities of parents, actual date of birth, school graduations, occupation, actual starting date of marriage, total number of births by mother	• birth certificate (doctor): name/age/occupation of parents, mother's address, location/date/time of birth, name/gender of the infant, period of pregnancy, multiple birth (order of birth), physical condition/weight/health of infant, number of births by mother

Source: Song, H. J. et al, 2016

The birth report must be filed within one month of birth with a birth certificate issued by a doctor, either by mail or, in person, or in electronic form to a city office or a community service center of the birth address. When the official at the city office of a community service

center digitally inputs the birth report into the information system of the Supreme Court and Statistics Korea, the infant then receives the one and only RIN and is recorded as a cohabitant of the parents in the RR information system of the Ministry of the Interior (Figure III-1).

Figure III-1 | Birth Report Process



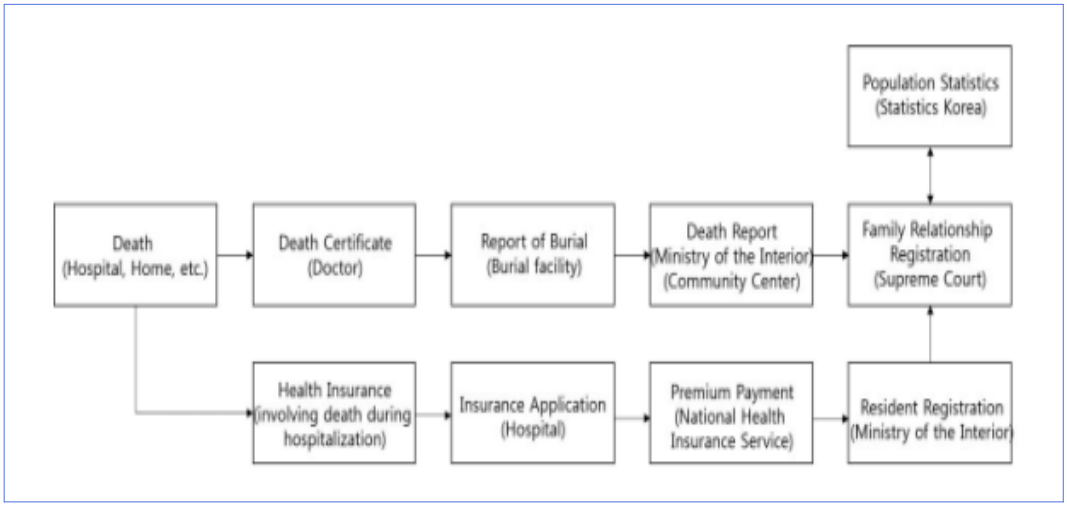
Source: Song, H. J. et al, 2016

The premium for National Health Insurance is paid through registration in the National Health Insurance Service (NHIS) under the parents, linked to the information system of the hospital that delivered the child. Once the birth report is completed, the data is managed as the resident information of the child.

3) Death Report

Death can be reported by the cohabitant, caretaker at the location of the death, or the head of the community at the location of death within one month of knowledge of the death, together with either a doctor's death certificate or post-mortem examination certificate to the appropriate city office or community center of the location of death, burial, or cremation. The death report includes name, gender, location of registration, resident identification number, location of death, and just as in the filing of birth reports, includes the Population Change Survey. Since the information on FRR contains sensitive personal information such as blood relations, marriage or divorce, the Supreme Court administers the system so that certificates can be issued and shared with other organizations under tightly regulated conditions (Figure III-2).

Figure III-2 | Death Report Process



Source: Song, H. J. et al, 2016

4) Reports of Marriage and Divorce

The report of marriage has legal effect when legal conjugal relations are established through the reporting of marriage under the Act on Registration, etc. of Family Relationship. One of the parties concerned may visit the government office on FRR to make the report. The report of divorce is made for divorce by mutual consent. Divorce by mutual consent takes effect upon receiving confirmation from Family Court and filing the report as prescribed by the Family Law. This report must be made in writing and be signed by both parties concerned and two witnesses of legal age (Article 839 of the Civil Act).

For reports of marriage and divorce, the parties involved need to report to the appropriate FRR office. The name, family clan, date of birth, RIN, and location of registration of the person concerned and the name, location of registration, and RIN of his or her parents are filled out in the registration form. While CRVS policies are executed separately by central government agencies, the working-level tasks are processed in a comprehensive manner through similar proceedings in the city offices and in the community service centers, which serve as low-level administrative organizations.

2.3. Resident Registration

The RR is the core component of CRVS. It is used to manage a citizen's residential relationship and changes thereto. With the launch of the First Five-year Economic Development Plan in

1962, the RR Act was enacted for the purpose of consolidating management of personal data of citizens for taxation, military service, elections, and services. As infiltrations by North Korean guerrillas became more frequent, the Korean government's efforts to maintain public order led to making use of the details of the RR card and RIN system as a means of mobilizing military personnel and identifying suspected criminals and spies. With the increase in Korea's national income in the 2000s, this policy was amended to better understand citizen residency and movements for rendering public assistance in education, welfare, and culture.

Table Ⅲ-4 | Objective and Benefits of the Resident Registration System

Objective	Benefits
Monitoring resident residency movement	Management of service blind spots and overlaps in education, welfare, culture, etc.
Integrating management of citizen's personal data	Efficient supervision of human resources in taxation, military service, elections, etc.
Tracking down criminals, spies, etc.	Maintenance of social order through public peace, national security, terrorism prevention, etc.
Monitoring resident residency movement	Management of service blind spots and overlaps in education, welfare, culture, etc.

Source: Song, H. J. et al, 2016

2.3.1. History of the RR Act

The RR System prior to the establishment of the government of the Republic of Korea was the Joseon Residence Ordinance enacted and implemented in 1942. Persons who chose a certain domicile with the objective of staying for more than 90 days other than the permanent residency were required to register with the district offices. The RR system was introduced following the enactment of the RR Act (Law No. 1067) on May 10, 1962 in supersession of the Residence Ordinance. At the initial stage, its purpose was monitoring through administrative control by closely monitoring population movements such as changes in residential relations of residents. Later, it developed into a system harmonizing the purpose of administrative efficiency and benefits by promoting convenience of residents and facilitating processing of administrative affairs (Song, H. J. et.al, 2007). Major revisions to the RR Act which made it mandatory to report changes in residence when moving to a place with intent of staying more than 30 days are indicated in the following Table III-5.

Table Ⅲ-5 | Development stages of the RR system

Year	RR System
May 1962	RR Act enacted
May 1968	RR Card issued (ages over 18) and Resident Identification Number granted (12 digits)
July 1975	Issuance of RR card expanded (ages over 17) and first renewal of RRN
October 1983	RR card changed (vertical →horizontal) and second renewal of RRN
January 1991	RR Management System operated through computerization in 3,700 community service centers
June 1994	Digitalization of 70 million RR cards completed (19 million on households, 51 million on individuals)
December 1993	Notification system for moving-in and moving-out simplified to notification for moving-in only
May 1995	Copy of the RR certification issued on-line
December 1997	Foundation provided for joint use of information through comprehensive management of RR information following the establishment of the RR Digital Information Center (basic data for formulating national policy provided, on-line data provided for 8 major governmental policies)
September 1999	3rd renewal of RR card (paper card → plastic card)
December 2001	RR on-line system established (on-line services by 23 government ministries on 8 basic items on RR)
March 2004	Certified copy and abstract of RR issued on-line
July 2005	Administrative Information Sharing System launched

Source: Song, H. J. et al., 2007

2.3.2. Development of the RR system

The RR system has undergone transformation in three phases. The first institutionalization stage is from 1962 when the RR Act was enacted to 1986, when systems such as the RIN and RR card were introduced. During this period, low-level administrative staff recorded residential information manually on the RR ledger book and issued paper certificates.

Administrative efficiency was promoted during the second stage, from 1987 to 2000. The computerized database on RR information was built within the government organization. Once the RR database was implemented to replace the manual work process and paper documentation in favour of automated digital processing, citizens had access to digitized document services available in any local government office nationwide.

In the third stage (2001 to present), integrated administrative services based on internet service became available. It became possible to process residency relocation in the metropolitan unit of local government through online means and to issue various certificates from the internet or kiosks following the implementation of the Government for Citizens (G4C) (2001-2003) initiative, one of the e-government projects implemented by the Korean government. Even FRR functions offered by the Supreme Court were digitized and online issuance services became available. At present, RR provides core information for common use and reference among the administrative agencies through the Administrative Information Sharing System.

1) Institutionalization

The objective of the RR system introduced in 1962 was to clearly identify the population movements such as changes in residential relations of the residents, to increase convenience for residents, and to efficiently handle the administrative affairs. Every individual had to register his or her name, gender, date of birth, current address, and place of family registration with the municipal authorities of jurisdiction of his or her current address, irrespective of whether he or she continued to reside at or had left the place of family registration. The RR system served the administrative purpose of identifying and keeping track of community populations and migration trends, and then using the information to decide what administrative actions to perform.

Following the primary revision of the system in 1968, the 'citizen cards' and 'provincial resident cards' replaced the RR card system and the RIN system. Following the second revision of the system, RR cards were issued and resident identification numbers were issued to all residents aged 18 and over. Notably, following the infiltration of armed North Korean guerrillas on January 21, 1969, the RR Act was further amended in January 1970, mandating the mayor or the county head to issue RR cards to all persons over 18 years of age to 'oblige them to present the RR card under certain circumstances for security reasons in order to easily track down and round up spies or subversive elements in society and to support anti-communist activities.'

Following the declaration of the Yusin Constitution in 1972 and the declaration of the State of Emergency in 1974, the RR Act was revised for a third time in July 1975. The age of issuance of the card was lowered to 17 years on the grounds of 'bringing RR up to date and ensuring the efficient management of all human resources for the Civil Defence Corps and the reserve forces and thereby reinforcing national security'.

In the revision of the RR act in 1975, the obligations for the issuance of the card were specified including the lowering of the age for those eligible for the cards to 17 years, and penalties for violating the obligation of issuance were made more severe. The RIN was increased from 12 digits to 13 digits. While the lengthening of the RRN system to 13 digits reflected the Korean government's response to increasing digitalization and codification, it also meant that the upgraded system, detailing information on associated individuals, was more vulnerable to various forms of privacy violation (Song, H. J. et al. 2007).

The new RRC model was introduced in 1983, and changes in address could be made on the back part of the card in the event of address change. The RRC model was also changed from vertical to horizontal. The plastic RRC card used back then, however, entailed significant risks in a number of ways including ease of forgery or counterfeiting and exposure of personal information. It was also pointed out that the plastic cards were inadequate for meeting the demands of an advanced information and technology society and e-government.

2) Promoting Administrative Efficiency

Following the launching of an informatization project designed to effectively handle administrative affairs, Korea underwent an astounding transformation. Starting with the Project for Computerization of Six Administrative Networks in 1987 as part of the National Basic Network Digitalization Project, the Korean government went on to build the central RR Management System. By January 1991, when its main project was completed, the 3,700 townships of eup/myeon/dong offices across Korea were connected to the central RR Management System. The project involved the digitalization of 70 million manually recorded RR Tables, consisting of 19 million on households and 51 million on individuals (National Information Agency, 1992). The RR Management System computerized a whole range of tasks involving the issuance of resident register copies and related certificates, as well as the compiling of various statistics (on new migrants, births, expiries, the Civil Defense Corps, etc.) (Song, H. J. et al. 2007). Officials could now handle RR tasks using electronic and automated means on networks connecting all metropolises and provinces. In 1995, the resident register copies and related certificates were issued online, and the RR Computer & Information Center was established in 1997, paving the way for comprehensive management of RR information.

In an attempt to further update the system in line with the worldwide advancement of digitalization and informatization, the Korean government sought to introduce electronic RRCs in 1997. The plan, however, ran into strong opposition from activist groups concerned with privacy violations and eventually foundered. In September 1999, with the 10th amendment of the RR Act, the current plastic cards containing holograms were introduced. In early 2001, a new plastic RR Card was introduced, featuring high-molecular coating technology for preventing forgery and falsification.

3) Providing Comprehensive Administrative Services

The launching of the e-government and the advancement in the administrative information system in the new millennium led to the transformation in the RR system. A major example is the Roh Moo-hyun administration's Public Service Innovation Project, which sought to digitalize and streamline over 4,000 types of administrative services, including the online processing of over 400 types of civil applications and the sharing of 20 types of public information among government ministries and departments.

The 12th amendment of the RRA in 2001 led to the establishment of an online system for viewing RR information. This system provided eight basic items of RR data for 23 departments and ministries of the central government, as well as for provincial and municipal authorities nationwide. The public information sharing project helped minimize inefficiencies by reducing the need for repeatedly obtaining and exchanging commonly required government documents. The project did much to integrate government services.

Table Ⅲ-6 | Types of Required Entries into the RR Information system

Classification	Entry Items
Basic Items	23 items including 1. RR no.; 2. name; 3. blood type; 4. marital status; 5. occupation
Military Records	16 items including 1. military status; 2. decision dates; 3. physical exam. level; 4. groupings 5. rank
Reserve Forces	5 items including 1.classification of organization; 2. regiment; 3. organization date
Civil Defense	8 items including 1. formation date; 2. formations; 3. reason for exemption/postponement
Mobilization of Manpower	12 items including 1. mobilization type ; 2.occupational code; 3. reason for postponement/exemption
License	1. type of license; 2. registration (issuance) number; 3. issuing authorities; 4. Specialty
Livelihood Protection	1.beneficiary types; 2.status of health; 3.average monthly wage; 4. effective years
Medical Care	1. medical care status; 2. medical care (insurance) number
Veterans	1. veteran status; 2. veteran ID number
School-aged Children	1. reason for postponement/delay
Others	1. RR Table Registers
11 sectors	78 items

With the legal grounds for the Electronic RR Information Backup System established in 2004, copies and certificates of resident registers began to be issued electronically. In November 2006, another RRC model was introduced, featuring fluorescent publishing technology for preventing forgery and falsification.

The entries required in the current RR Information System include 78 items in 11 categories including such basic items as resident identification number, name, and occupation. The system largely categorized entries as basic data, data on military records, and data on social welfare. It can be seen that RR is used for purposes of national security and social welfare (Table Ⅲ-6).

2.3.3. RR System

1) RR Record Card

The first component of the RR is the RR Record Card. The information carried in the RR database consists of the Individual RR Card, which is used to comprehensively manage individual records, and the Household RR Card, which is used to consolidate and manage records of each household. The RR Card is the basic vehicle of information of an individual and a household and can be issued in the form of an RR abstract or copy. The Individual RR Card carries 11 items of information including the individual's name, date of birth, gender, and RIN, while the Household RR Card carries 8 items such as household head's name, names of household members/cohabitants, and RINs (Table Ⅲ-7).

Table Ⅲ-7 | Entries on the Resident Registration Record Card

Classification (number of information items)	Information Listed
Individual RR Record Card (11 items)	RIN, name, date of birth, gender, blood type, standard location for registration, reason for changing standard location, address relocation items (move-in date, move-out date, reason for moving, head of household's name and relationship), issuance of RR Certificate (issuance, reissuance, photo), mid-transit institutions, etc.
Household RR Record Card (8 items)	Head of household's name, household number, address usage data (address, move-in date, move-out date), relationship with household head (household members' names, RINs, standard location for registration, reason for changing standard location), cohabitants (name, relationship with household head, RINs, standard location for registration, move-in/move-out date), mid-transit institutions, etc.

Source: Song, H. J. et al, 2016

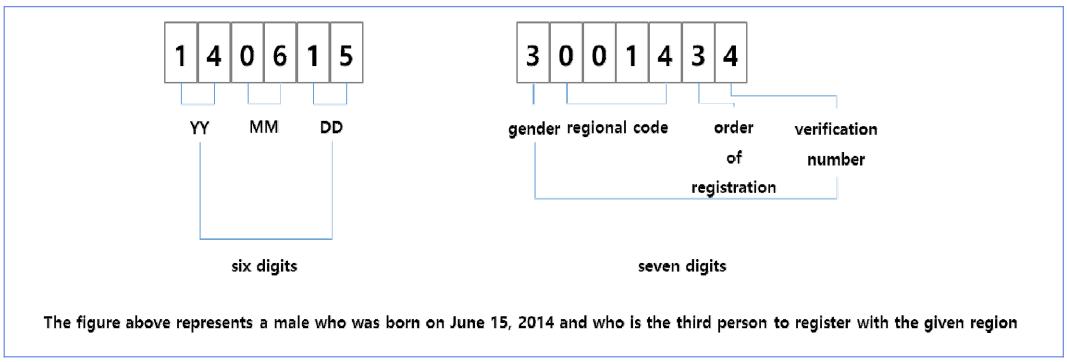
2) RIN

The RIN is the second component of the RR. It is a 'personally unique registration number' that the government issues to uniquely identify each citizen (Article 7 of the RR Act). The RIN is unique in that it is the one and only number for an individual. It can never overlap or be shared with other individuals; it is valid for life; and it can exclusively identify an individual (Song, H. J. et al. 2007). Other unique distinguishing numbers such as passport number and driver's license number are not capable of enabling the multiple functions of the RIN.

The RIN is characterized by the following: (1) Once issued, the RIN functions as the one and only unique key for distinguishing an individual from others for life (identification); (2) the RIN can be used to validate the identity of the person indicated on various official documents or at government offices (verification); (3) the RIN carries certain details of personal information such as date of birth, gender, and region of birth (descriptive); and (4) the RIN is the medium through which personal information collected by numerous administrative information systems can be shared without any exception.

The RIN has 13 digits indicating date of birth (6 digits), the century in which the person was born (1 digit), gender, regional code of the place where the RIN was first issued (4 digits), order of registration (1 digit), and Error Verification Number (1digit) (Figure Ⅲ-3).

Figure Ⅲ-3 | Structure of RIN



Source: Ministry of Interior, 2015

The 13-digit RIN system is important for the smooth functioning of the information society including e-government through the digitalized coding of individual citizens. Because the RIN can identify and distinguish an individual offline and online as well as in the public and private sectors, it is used for delivery of various public services, together with the administrative information sharing system to provide online delivery of services for elections, military service, civil administrative services, national tax, education, health insurance, and welfare as well as

to track suspects or criminals wanted for terrorism, tax evasion, and other crimes. Information sharing and joint use among the organizations enable personalized services to individual citizens on various administrative affairs including civil applications and social welfare services. It is also used to identify individuals in tracking down terrorists, tax evaders, or other criminals. Thanks to the high utilization value of the RIN, 77 acts have stipulated the RIN for the purpose of identity verification and verification of age. The RIN is used in a number of areas including politics (elections for public service, national referendums, summoning, etc.), finance (real-name transactions, value-added tax, etc.), national defense (military service, civil defense), civil application administration (civil application affairs, FRR, etc.), welfare (health insurance, employment of the disabled, beneficiary of national basic livelihood, etc.).

There is, however, a tendency of over-collecting and abusing the use of RIN for the convenience it offers, and this has led to possible infringement of personal information as a result of leakage or abuse of RIN or theft or loss of the RIN card, which bears the resident identification number. This in turn, has increased social costs in the form of financial fraud or other crime. The government, therefore, introduced the legal justification for processing sensitive and unique identification information and the regulatory legalism which prohibits the collection of the RIN (Table Ⅲ-8).

Table Ⅲ-8 | Regulatory Structure of RIN processing

Applicable Act	Applicable to	Basic Principle	Exceptions
Personal Information Protection Act (Aug. 7, 2014)	Private information processor	Principle of prohibiting the collection of RIN (constitutionalism)	1. When permitted by law 2. Urgency required to save life or physical health 3. Unavoidable need for processing (Ministry of the Interior Decree)
Act on Information & Communications Network (Aug. 18, 2012)	Information and communications service provider	Principle of prohibiting the collection of RIN (constitutionalism)	1. Organizations for identifying the individual 2. When permitted by law 3. Inevitable in order to conduct business (as notified by the Korea Communications Service)

Source: Sim, W. M., 2015; Song, H. J. et al, 2016

In December 2015, the Constitutional Court ruled the current RR Act, which forbids changes in the RIN, unconstitutional. The MOI has already recognized the problem arising from prohibition on changing the RRN and introduced a bill in the National Assembly prescribing that, while the current 13-digit system will be used, deliberations and changes will be made through the establishment of the Committee on Changing the RIN under the Ministry of the Interior in the event there is great risk of significant harm to the life, physical body, or property of an individual or sex crime victims. The opposition party introduced a bill designed to change

the RRN to an arbitrary number that does not carry personal information. The final decision made from the perspective of financial cost and protection of personal information, and the law will be revised by 2017 following the establishment of a public consensus.

3) RR Card

The RR Card is a certificate issued by the mayor, county commissioner, or chief of a Gu district to residents in their jurisdiction above the age of 17. It carries official universal information to facilitate administrative tasks and affords citizens greater benefits and convenience. Urban and rural resident certificates had been in use since the enactment of the RR Act in 1962, but since 1970, the issuance and possession of the RR card with RIN imprinted became mandatory for all citizens over 18 years of age. The use of the RR card began as a means of maintaining public security by enabling discovery of possible spies or criminals but has evolved since the 1990s to give citizens greater benefits and convenience by providing the means for identity verification for civil services delivered by administrative agencies and for use in various private commercial transactions. The RR card is now used mainly as the instrument of personal identification for the delivery of public services such as voting, passport issuance, driver's license exam, pension payments, etc., as well as for identity verification in the private sector for commercial purposes such as financial, real estate transactions, and acquisition of licenses or certifications.

In an effort to protect personal information, sensitive personal information included on the initial RR card such as the location of family register (the address of the head of household from the FRR Act), date of birth, the Military Service Number, occupation, and thumbprints have been either removed or limited since 1999. Today, the front side of the RR card contains the name, photo, RIN, and address, and the back side contains space for changes in address and fingerprint (right thumb) (Table III-9).

Data in the RR card includes bio-information listed on the card such as photo, fingerprint, and blood type. When the application from the issuance of the RR card is submitted at the age of 17, the applicant's data including photo, all fingerprints, and blood type, etc. are collected. The photo is a necessity for identification but the submission of blood type is an option of personal choice. However, since the collection of all fingerprints is mainly transferred to the National Police Agency for criminal investigation, some human rights groups oppose the collection of such information. In response, the Constitutional Court ruled that 'while fingerprint information is bio-information, it is neutral information not closely related to personal characteristics because it cannot be used to determine or determine the personality, physical attributes, or socio-economic status of an individual' and therefore does not infringe on a person's right of self-determination of personal information. Furthermore, governments

around the world are increasingly collecting, recording, and storing iris patterns or fingerprints to protect against terrorism.

The Korean government continues to improve the quality of the RR card. Authenticity verification service through the Internet has been provided by government agencies and banks since 2007 to prevent forgery of the RR Certificate and to verify the authenticity of RR information.

Table Ⅲ-9 | Transformation of Information Listed on the RR Card

Applicable Act	Applicable to	Basic Principle	Exceptions
Year	1968	1999	2005
Material	Paper	Plastic	IC chip embedded
Data on the front side	Name photo resident identification number (12 digits) date of birth permanent address address military service (specialty no.) issuance date head of issuing authorities information on obligation to carry information in the event of acquisition of the card	Name (Chinese characters used in parallel) photo resident identification number (13 digits) address issuance date head of issuing authorities	Undecided
Data on the back side	changes in address occupation thumbprints	changes in address fingerprints information in the event of acquisition of the card	Undecided

Source: Song, H. J. et al, 2016

Many improvements have been made to the RR card to prevent forgery or falsification as well as leakage of the resident number listed on the card. Since the first issuance of the card in paper form in 1968, the RR card was renewed every ten years. In 1999, the paper-based card was changed to a plastic model to prevent forgery or falsification. With the passing of time, however, the plastic became worn out and information faded away, and it became difficult to identify the person from the photo on the card. To this end, an electronic resident card embedded with an IC chip decipherable only by a special device is now required. Electronic cards have the advantage of being difficult to forge, but they are expensive to produce. Civil groups also oppose their use out of concern over the possible tightening of control of the citizenry by government as well as leakage of information.

4) Resident Registration Affairs

A person who has an address or a domicile within the city or county district for the purpose of residing for more than 30 days must go through resident registration at the eup/myeon/dong district office where he/she will be residing for more than 30 days. Migrant workers who have renounced permanent resident status and who wish to make new registration must do so at the at eup/myeon/dong district office in the jurisdiction of the residence. Making a new registration after returning from overseas can be done at the at eup/myeon/dong district office where the original registration was cancelled. Those with permanent resident status cannot, in principle, make resident registration, but persons who have been notified as exceptions due to overseas migration may complete resident registration at the eup/myeon/dong district office. Since resident registration is for confirming the domicile of a person, all persons must make resident registration for only one domicile, where they plan to reside for more than 30 days. Foreigners are exempted from going through resident registration. Foreigners are registered at the Immigration Bureau (Article 31, Immigration Control Law).

The resident registration affairs must be administered by the mayor or the head of the county or district. For administrative efficiency and convenience of residents, this authority may be commissioned to the head of the eup/myeon/dong district office as prescribed by the ordinance of the local government.

Resident registration reporting must be done within 14 days of the date of occurrence of the reason for reporting. Major items of reporting are the registration report, correction report, cancellation report, move-in report, overseas migration report, and report of making registration again. The report must be filed by the head of the household, in principle, but in the event the head of the household is unable to file the report, confirmation must be made with the head of the household. In the event confirmation cannot be made with the head of the household, it must done by the head of the eup/myeon/dong district office following a fact-finding investigation.

2.4. Vital Statistics (Population Movement Survey)

2.4.1. Chronicle of the Vital Statistics

The family register system was introduced in Korea under Japanese colonial rule following the enactment of the Family Register Act (proclaimed on March 4, 1909, Law No. 8). The Japanese Government General of Korea began compiling statistics on births, deaths, and stillbirths annually in 1910. In 1937, the Regulations on Population Census of Joseon were

enacted, and the Census Table (birth table, death table, marriage table, divorce table, stillbirth table) was compiled. It was sent to the Japanese Government General of Korea (Department of National Tax Survey) for use. This was the first population census in a modern sense.

During US military government rule (1945~1948), the Ministry of Public Health and Welfare was established in each province under Ordinance No. 25 (November 7, 1945) to process census statistics. The Division of Health and Population Census was established under the Ministry of Public Health and Welfare, which handled the entire processes on registration, collection, compilation of statistics on births, death, stillbirths, marriages, and divorces.

The Population Census Act was enacted in January 1949 and the Decree on Surveying Population Census in December 1949. The latter eventually became independent as the population registration system. Determination and publication of the demographic data was impossible from 1950 to 1952, the Korean War years. They were finally published in 1953, but data quality was poor as there were so many omissions in the registrations. The system was entrusted to the Statistics Office under the Economic Planning Board in 1961 and remains the framework of the census today.

2.4.2. Vital Statistics

The objective of vital statistics is to assess and identify the fundamental changes in structure and size of national demographics such as birth, death, marriage, divorce, etc., in order to provide basic data used in developing public policies on population, residency, health, social welfare, education, transportation, etc. as well as for use by private businesses in building their business plans. Instruments for gathering the vital statistics include the Population Change Survey (PCS), which is conducted monthly based on the citizen's obligation to report individual changes, and Population and Housing Census (PHC), which is conducted every five years. The PCS was designated as national statistics in 1962, the same year the First Five-Year Economic Development Plan was launched, in accordance with the Statistics Act and Vital Statistics Investigation Regulation under the Decree of the Ministry of Strategy and Finance.

In 1970, the PCS format was integrated with the FRR format, and from 1987 to 1991, the VS database and the RR database were developed as part of the first National Basic Information System. In 1997, the electronic input system was completed, and the internet-based vital statistics entry system began operation in 2004.

1) PCS

The PCS is an investigative statistics survey of reports on birth, death, marriage, and divorce

based on individual FRR and covers all citizens living within and outside the country. It is different from the RR in that it covers citizens living abroad. However, since the survey is published monthly following the review of changes and trends from the first day to the last day of the month, the PCS is not based on real-time data (Table Ⅲ-10).

Table Ⅲ-10 | Basic Structure of Population Change Survey

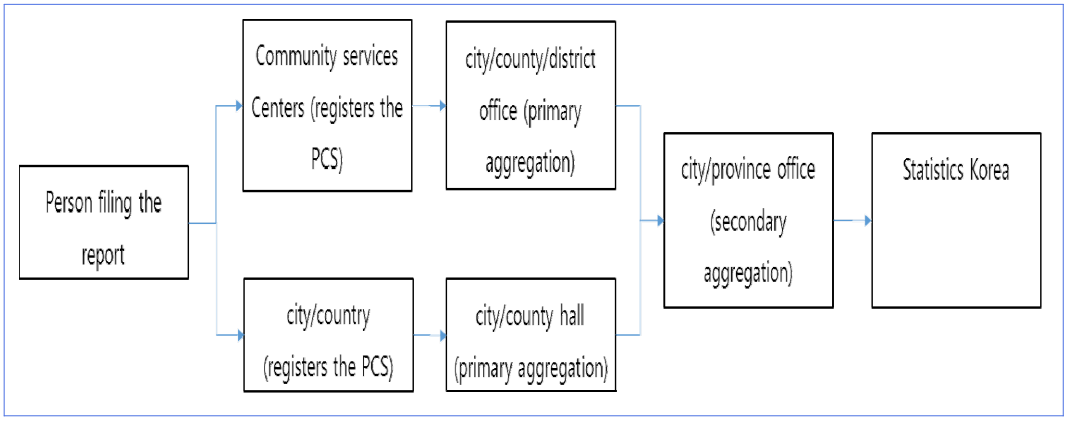
Classification	Main Contents
Legal Basis	• Statistics Act: Designated Statistics (Article 17, Paragraphs 1, 3), Authorization Number (No. 10103, Article 18, Paragraphs 1, 3), Articles 25, 26) • Vital Statistics Investigation Regulations (Ministry of Strategy and Finance Decree No. 425)
Target of Investigation	• Target: all citizens (individuals) living in Korean territory or in foreign countries • Contents: FRR and birth, death, marriage, divorce reports (where foreign residents are included in the investigation)
Period of Investigation	• Investigation period: investigation conducted from the first to the last day of the month regarding the first day to the last day of the preceding month • Investigation cycle: every month

Source: Statistics Korea, 2015

According to the Statistics Act, all citizens living within or out of Korea must fill out the items of the PCS in the lower part of the birth and death forms when reporting such occurrences. The PCS items to fill out for the birth report include gestation week, weight of the infant, multiple birth, order of birth, and parents' nationality, etc. The PCS items for the death report include the cause and type of death (if death is caused by external factors, the accident type and time of death must be indicated), region and location of the accident, nationality, and the educational level. The marriage report must include the marriage date, nationalities of the married couple, and the type of marriage. The divorce report must include the marriage date, divorce date, number of children under 19, type of divorce, and the reason for divorce.

According to the work process of the PCS, when a person files a report at the community service center or the city/county hall, the data is gathered first at the city/county/district level and gathered for a second time at the metropolitan city/province level, and then finally sent to Statistics Korea. The PCS is not a real-time survey but a set of monthly batch statistics that begins on the first day of the month and ends on the last day of the month. There are four stages in the PCS work process: data entry, linking, categorization, and publication. The procedure for processing statistics on the cause of death is presented below in Figure III-4.

Figure III-4 | Work Process of the PCS



Source: Song, H. J. et al, 2016

The process for handling statistics on the cause of death is presented in the following Table III-11.

Table III-11 | Process of Statistics on the Cause of Death

Process	Death Entry	Linkage between Data	Data Classification	Public Announcement of Data
Major Activities	1. death certificate (doctor) 2. death report (family) 3. data verification 1(missing items, suspicious input of data, etc.)	1. collection of related administrative data 2. linkage between death report information and administrative data 3. data verification 2(consistency between records)	1. verification of cause of death 2. conclusion on the major cause of death 3. code classification pursuant to WHO standard (ICD-10)	1. drawing up of classification table 2. analysis 3. public announcement

Source: Lee, J. Y., 2015; Song, H. J. et al, 2016

The results of the survey are made public largely by public announcement (monthly and yearly), publication of reports, and disclosure of data (Table III-12).

Table Ⅲ-12 | Disclosure Methods for Vital Statistics

Classification	Data	Public Announcement and Publication
Public Announcement of Data	Birth and death (cause of death)	Annual (August)
	Marriage, divorce	Annual (April)
	Vital statistics for multicultural population (birth, death, marriage, divorce)	Annual (November)
	Life table	Annual (December)
	Demographic trend (birth, death, marriage, divorce in a month)	Monthly (two months after conducting survey)
Publication of Data	Annual report on vital statistics	Marriage/divorce (May), summary/birth/death (October)
	Annual statistical report on causes of death	Unit on national level (October), unit on city and provincial level (November)
	Life table	December
Disclosure of Data	Press release: Statistics Korea website	Real-time online (http://kostat.go.kr)
	Statistics table, report (online periodicals): National Statistics website	Real-time online (http://kosis.kr)
	Detailed statistical data other than publicly announced data: Micro Data	Real-time online (http://mdss.kostat.go.kr)

Source: Statistics Korea, 2014

The vital statistics is combined with other important data as a reference for national policy decision-making and private business purposes in finance, insurance, and other areas (Table Ⅲ-13).

Table Ⅲ-13 | Production and Purposes of the Population Change Survey

Category	Statistics Produced	Main Purposes
Birth	Number of births, crude birth rate, fertility rate, gender ratio of birth, number of multiple births, etc.	• basic data for projecting population • forecast of number of beds in maternity wards and doctors per region in proportion to the number of births • forecast of demand for baby products, assessment of child-reading expenses, estimation of investment in educational facilities by year • forecast of labor supply and policy on supply and demand for military service resources • forecast of savings and investment resulting from population increase in each region • selected data on birth control or birth promotion policy • forecast of changes in household consumption expenditures resulting from changes in fertility • provided to international organizations such as UN, WHO, OECD, etc.
Death	Number of the deceased, mortality rate, cause of death, life expectancy, etc.	• basic data for projecting population • basic data for setting policies on health and diseases • formulating preventive measures against accidents such as traffic accidents or suicide • basic data for distributing health and medical resources • basic data for the life table • provided to international organization such as UN, WHO, OECD, etc.
Marriage	Number of marriages, marriage rate, average age of marriage, types of marriage, marriage with foreign nationals, etc.	• basic data on fertility for projecting population • basic data for predicting housing demand • calculating wedding expenses and predicting demand for marital items
Divorce	Number of divorces (by age), average age of divorce, types of divorce, divorce with foreign nationals, etc.	• basic data for preventing juvenile problems resulting from the divorce of parents • basic data for setting policies on preventing household problems and maintaining a healthy family

Source: Statistics Korea, 2014

2) PHC

The PHC is carried out for all citizens and foreigners living within the national territory of Korea and their residency at the time of survey every five years. Statistics Korea supervises the Population and Housing Census, and the general survey of the PHC is carried out by the local government of either the city/province of the city/county/district. The special survey is carried out by five central government agencies including the foreign missions based overseas (Ministry of Foreign Affairs), the penitentiaries (Ministry of Justice), and the army (Ministry of National Defense) as presented in Table Ⅲ-14.

Table Ⅲ-14 | Changes in the Population Survey

Category	Statistics Produced	Main Purposes
17	Nov. 2005	• 10% sample survey conducted simultaneously (financial activities, population movement, fertility, the aged persons, housing, welfare) • internet-based survey introduced for the first time and web-based data entry into local PC introduced
18	Nov. 2010	• 10% sample survey conducted simultaneously (financial activities, population movement, fertility, the elderly, housing, welfare) • internet-based survey expanded and ICR (intelligent character recognition) data entry method introduced
19	Nov. 2015	• the complete enumeration survey converted into registration census method • sample survey expanded (10% → 20%), internet-based survey method applied, and ICR data entry method used

Source: Statistics Korea, 2015

In 2015, the traditional door-to-door survey method was discontinued for the census on population, household, and size and structure of housing. Instead, a complete enumeration survey of registration census that makes use of administrative information is now done. Basically, the registered census creates 12 basic statistical items by linking 21 types of administrative information such as the RR Register and Building Register from 11 government agencies including the Ministry of Land, Infrastructure and Transport, Ministry of Education, Ministry of the Interior, Ministry of Justice, Supreme Court, Ministry of Health and Welfare, Korea Electric Power Corporation, and others. Previously, all citizens were required to answer the census, but only 20% are required to do so today. The use of the survey outcome is expanded to include cooperative projects among the government ministries, which can result in huge savings in the government spending (Table Ⅲ-15).

Table III-15 | Main features of the 19th Population Census

Category	Statistics Produced	Main Purposes
Response from Citizens	Done by 100% of respondents (approximately 50 million)	Done by 20% of respondents (approximately 10 million) (burden of response reduced by 80%)
Use of Survey Outcome	Result of the statistical survey provided	• Result of statistical survey provided • Data necessary for citizens and government provided through linkage with other administrative information
Budget	271.2 billion KRW	125.7 billion KRW
Qualification of Data	Limitation in policy utilization resulting from lack of administrative information by data-providing organization	Result of registration census is fed back to the data-providing organization, and administrative information is reorganized

source: www.census.go.kr; Song, H. J. et al, 2016

3. Korea's CRVS Information System

3.1. Electronic Government for Strengthening CRVS

3.1.1. Administrative Digitalization and Electronic Government

Korea's CRVS has been institutionalized with the Supreme Court, the Ministry of Home Affairs, and Statistics Korea respectively administering family relations registration, resident registration, and vital statistics. The administration until the early 1980s was primarily handled by civil servants who made manual hardcopy records of data, which were stored, modified, and distributed. The digitalization of government affairs was launched in full swing in the 1980s following the era of rapid economic growth and institutionalized democracy, and this afforded the public much greater convenience and promptness in government services.

The first National Information Infrastructure (NII) project (1987-1991) and the second National Information Infrastructure project (1992-1996) were implemented following the launching of the administrative digitalization project. The first NII project was actively implemented with the strong commitment of the President of Korea through the establishment of the Network Coordination Committee chaired by the chief presidential secretary. During this period, five major infrastructure networks were established in the areas of administration, national defense, public security, budgeting, and educational research. Through the

establishment of the administrative network, six key classes of administrative data including those on residents, real estate, automobiles, employment, financial statistics, and customs clearance were put on a database, enabling automated and remote processing. The establishment of the database on RR led to the abolition of paper documentation and issuance, and exchange of RR data became possible among the metropolitan governments. Following the establishment of the RR management system, the RR digitalization project was promoted. With the completion of the project in January 1991, the RR management system was in operation in 3,700 eup/myeon/dong district offices nationwide. In the second NNI project, seven priority tasks for implementation led to the digitalization of EDI customs clearance (Korea Customs Service), the post office (formerly the Ministry of Telecommunications), public welfare (Ministry of Health and Welfare), industrial property rights (Korea Intellectual Property Office), and management of fishing vessels (Ministry of Fisheries), among others.

The launching of the ultra high-speed information network in 1995 enabled nationwide use of ultra high-speed internet, and the electronic government project was initiated in the new millennium based on this initiative. The implementation of the Government for Citizens project in 2001 led to the establishment of the electronic government offering electronic civil application services of high standards. The first round of the project, implemented from 2001 to 2002, led to the abolition of paper documentation through the establishment of a consolidated system on sharing five key government databases including data on residents, real estate, automobiles, enterprises, and taxation. The objective of this project was to minimize the number of visits to government organizations. Eleven other projects were also implemented during this period including one for sharing information on the four major social insurances, internet-based Home Tax Service, and the National Education Information System (NEIS). This led to the establishment of a system enabling information sharing among the administrative organizations including 20 types of information on civil registration, real estate, automobiles, and taxes.

During the second round of the project implemented from 2003 to 2007, 31 tasks were promoted including digitalization of the entire processes of document processing, informatization of central government and local government budget processes, informatization of personnel administration, and sharing of administrative information. Under the administrative information sharing system, an administrative information sharing center was built that enables civil petitioners to make verification and confirmation without having to append so many different pieces of evidentiary documentation during the civil application process. This is possible by the sharing of information between the owners of information (administrative organizations, the judiciary, public institutions) and the users of information (administrative organizations, the judiciary, and financial institutions). To become integrated into the administrative database, online sharing of major administrative information was enabled first, and this was consolidated with the major administrative database in phases.

The first such information shared was key data that needed to be shared government-wide for the processing of tasks and civil petitions. Those categories of administrative information in highest demand were extracted, and a summarized database enabling sharing of information real-time was established (Administrative Information Sharing Promotion Committee, 2007).

Table Ⅲ-16 | CRVS informatizatiproject on

Stage	Major business details	CRVS
Computerization of administration (1978-1986)	• Computerization of administrative tasks including personnel management, compensation, and immigration control	• civil registration is converted from manual processing to PC processing • an abstract is issued when visiting the district office on one's domicile
National Information Infrastructure (1987-1996)	1st round (1987-1991): five major networks established (administration, national defense, public security, finance, educational research) 2nd round (1992-1996): 7 priority tasks including EDI customs clearance, post office, welfare	• 6 projects put into database in the administrative network including civil registration and financial statistics • Digitalization of manually entered data on civil registration (70 million cases) and abolition of manual processing of RR card • integrated processing of civil registration and integrated issuance of documents
Ultra high-speed telecommunications network (1995-2005)	Establishment of ultra high-speed internet network and optical cables in major areas established	
Electronic government (2001-2007)	• 1st round (2001-2002): 11 projects including electronic civil application (G4C) • 2nd round (2003-2007): 31 projects including informatization of city and county administration, electronic documentation, enhancement in distribution	• internet issuance of civil registration and shared use among government ministries • establishment of database on family register and internet service (2003) • establishment of web-based vital statistics reporting system linked with family register database
Smart electronic government (2013-present)	• enhancement of electronic government (2008-2012): government of maintenance 3.0 (2013-present): establishment of Smart environment for customized service	• promotion of birth/death reporting system based on hospitals (20 15~) • innovation in population housing census method and establishment of big data analysis foundation (2015~) • establishment of Cloud environment including CRVS (2015~)

Source: Song, H. J. et al, 2016

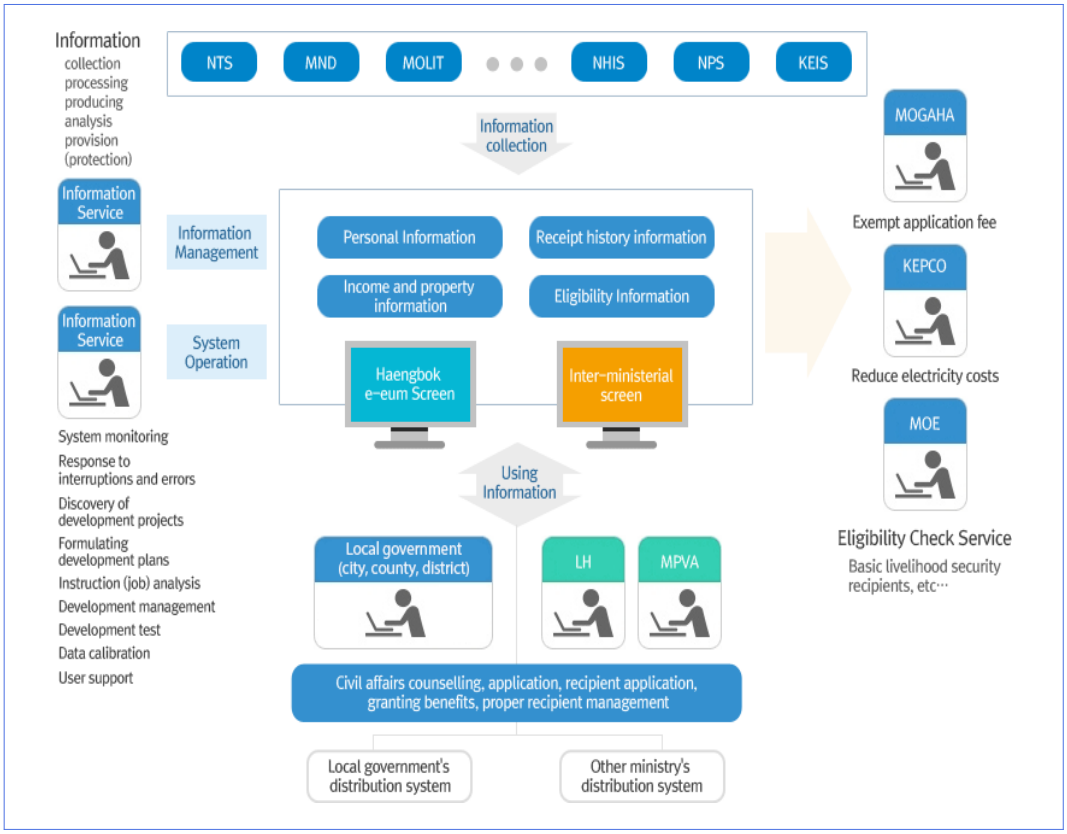
3.1.2. Information sharing in electronic government project

1) Minwon 24

The G4C project, the civil application innovation project implemented during the first round of the electronic government project (2001-2002), is currently represented by the Minwon 24 system following several changes in name and system upgrading. This online public service portal provides a wide range of online services for the public. Residents can apply for and obtain the public services they need from any location with an Internet connection, without having to visit a government agency. At present, over 5,000 types of legal petitions and 3,000 types of civil petitions can be made via the internet, and 1,200 types of civil petitions can be perused and issued.

2) Social Security Information System

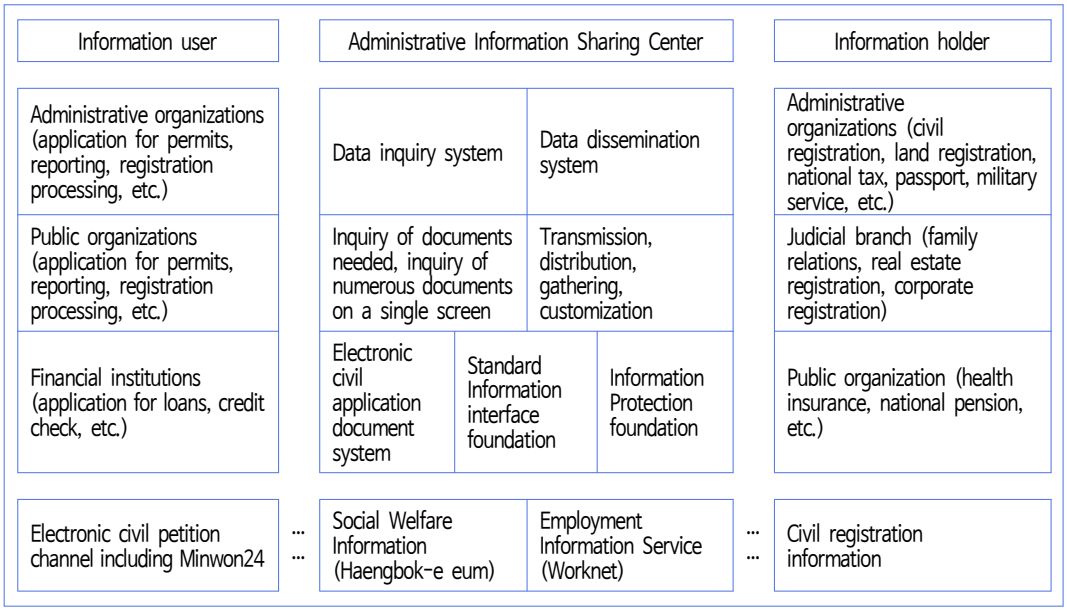
Figure III-5 | System Block Diagram of Haengbok-e eum



The Social Security Information System (Haengbok e-eum) effectively renders support and management of various social welfare programs based on the individual and household database of the Ministry of Health and Welfare. The system links data on social welfare programs managed by the central government organizations including the Korea Tax Service, Ministry of National Defense, National Health Insurance Service, and National Pension Service, and all are provided to the local governments. The data, in turn, is linked to the civil registration system managed by the local governments, enabling them to offer welfare services in a timely manner. A total of 552 types of data on income and assets as well as service history information from relevant administrative and public organizations are linked. This enables designation of welfare recipients and handling of other relevant affairs. Persons eligible for social welfare benefits and services are managed and supported in real-time. The system is the foundation of welfare services and helps resolve the blind spots in coverage of welfare services.

3) Administrative Information Sharing System

Figure III-6 | Structure of Administrative Information Sharing System



The Administrative Information Sharing System, implemented in full swing since 2005, is the core initiative of the electronic government project for overhaul of public services and information resources management (Yoon, J.W. et.al, 2015). Organizations, enterprises, and individuals commonly use major types of administrative information owned by each organization for handling of administrative affairs and providing civil petition services. The administrative information sharing system provided the momentum for significantly

streamlining the handling of government affairs through the establishment of the national government administrative information sharing system, which involved integrating and interfacing major administrative databases within the government. The data on civil registration are essential for the first stage of civil application administration services for the public.

The establishment of the administrative sharing system in 2002 provided the foundation for sharing 20 types of administrative information online including data on residents, land, and family register. The Informatization Strategy Plan was formulated in 2006 for expansion of the administration information sharing system. Measures on protection and standardization of personal information were formulated, and a government-wide administrative information center was established. The Electronic Government Act was revised in 2008, which lead to the reinforcement of procedures and security of the administrative information sharing system. Examples of administrative information sharing are listed in the following Table III-17.

Table Ⅲ-17 | Major Examples of Administrative Information Sharing

Classification	Details
Civil registration information	Used in 110 tasks including passport issuance by 63 central government organizations, local governments, public organizations
Passport issuance	Information needed in passport issuance such as civil registration, military record, driver's license, etc. confirmed online
Social welfare	Data from the Ministry of the Interior, National Tax Service, and four major public insurances are interfaced to check income and asset matters => reduces required documentation to be appended
Four major public insurances	53 types of administrative information from 10 organizations used in the affairs for the 4 major public insurances (health, national pension, industrial accident, unemployment) => reduces required documentation to be appended

Source: National Information Society Agency, 2014

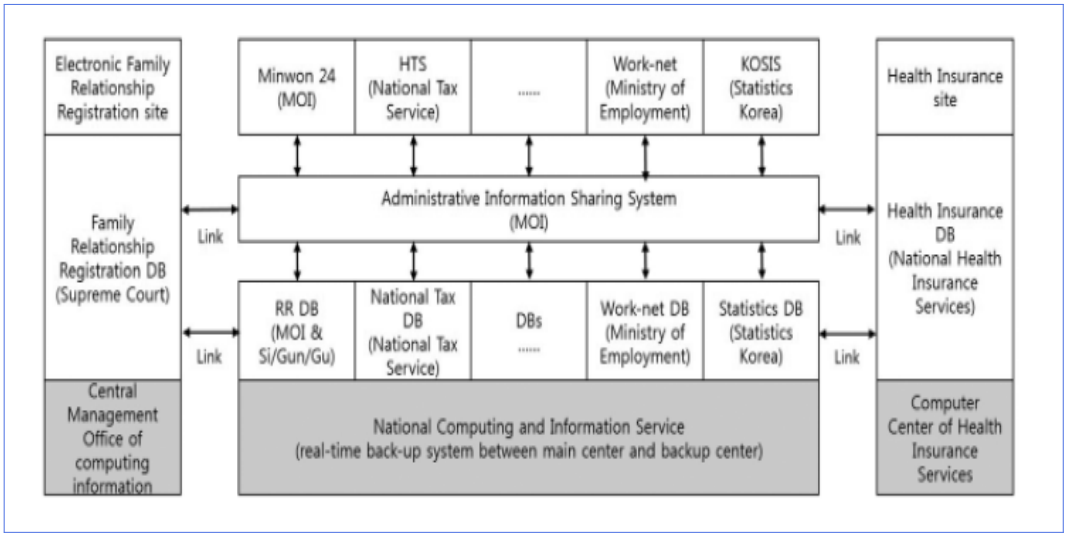
3.2. CRVS Related Systems

3.2.1. Overview

The two primary components of the information system for CRVS are the general task processing system and the information system. The former is administered by the city and country district community centers, which handle family relations registration, resident registration, and vital statistics, while the latter is managed independently by the Supreme Court; the Ministry of the Interior; city, county, and district offices; and Statistics Korea. While

the database on family relations registration is administered independently from the Government Computer Center of the Supreme Court, the information system of the administrative organization is co-located at two integrated computer centers. Portals for electronic family relations registration, Minwon 24, national statistics, and the civil registration database that provide administrative services as in Figure III-7 as well as various information systems such as the civil registration database enable the sharing of information through connectivity to the information system of various information systems of organizations. The health insurance information system of the National Health Insurance Corporation (NHIC) is managed by the NHIC instead of the integrated computer center.

Figure III-7 | Basic Structure of the CRVS Information System



Source: Song, H. J. et al, 2016

3.2.2. Information System by Sector

1) Information System on Family Register

The Family Register Computerization System was the information system for identification registration at the initial stage. It was developed under the auspices of the Ministry of Internal Affairs and was distributed to 36 organizations nationwide administering the family register following trial operation in 1994. Limitations were found in connectivity and sharing of information because the organizations introduced the computerization system individually, not all at the same time. (Ministry of the Interior/the Office of Court Administration, 1999). In order to resolve this issue, the Office of Court Administration and the Ministry of the Interior

engaged in Business Process Re-engineering (BPR) of the family register in 1998 and formulated "measures on implementing computerization of family register affairs for the establishment of a nationwide online system". Digitalization of the family register amounting to over 50 million cases was promoted in 2000. In 2001, the family register information system was developed that included interfacing of the Central Family Register Center with relevant organizations, and was distributed to national government offices handling family registry in 2002. Digitalization of the family registry was promoted by the Office of the Court Administration, which was the main agency responsible for the identification of registration affairs with cooperation from the Ministry of the Interior. Starting in 2001, the Office of the Court Administration began to independently implement the digitalization project (Table Ⅲ-18).

Table Ⅲ-18 | Implementation Process of Digitalization of Family Register

Year	Details
2002	Comprehensive plan on digitalization of family register established, family register information system using client/server method distributed nationwide
2003	Web-based family register information system developed, consolidated management of DB
2006	Certificate of family register issued through unmanned certifying issuing machine
2007	Protection of personal information strengthened

Source: National Information Society Agency, 2014

2) Family Relations Registration Information System

The information system for making an application for revision of identification registration was developed following the implementation of the family relations registration system in 2008. Family relations registration affairs are handled nationwide through the judicial network interfaced with district courts. The judicial network was built in 1992 and was connected to courts nationwide in 2004. In 2006, a 2.5Gbps high-speed nationwide network connecting the Supreme Court and the district courts was laid nationwide. In 2008, a 10Gbps high speed LAN was built in the Central Center (Bundang). (The Office of Court Administration, 2008).

Digitalization of family relations registration affairs by the Supreme Court was done in three stages. During the first stage, the Government Computer Center of the Supreme Court completed the web-based family relations registration information system (http://efamily.scourt.go.kr) in 2007. During the second stage, the Nationality System (2008) of the Ministry of Justice and the civil registration system (2011) of the Ministry of the Interior were interfaced, which enabled

public viewing, issuance, reporting, and application of various certificates on family relations that certify identification of citizens including those for birth, marriage, adoption, or death through the electronic family relations registration information system of the Supreme Court or the Minwon 24 system of the Ministry of the Interior starting in 2013. During the third stage, internet reporting service of various reports on birth, marriage, and death became possible online in 2015. Digitalization has greatly increased convenience for the public.

3) Civil Registration Information System

The development of the Civil Registration Information System was launched in 1987 and was opened in the 3,700 eup/myeon/dong community centers nationwide in 1991. This led to the digitalization of civil registration information (1.9 million on households, 5.1 million on individuals) which had, until then, been kept in hardcopy form. Electronic processing of civil registration information such as civil registration affairs, issuance of certificates, and statistics reporting was launched, and it became possible to change information and to obtain certificates through the wide-area network regardless of one's residence. This system led to the establishment of a database on resident information in the city/county/district offices as well as a vertical information connectivity system linking the central government ministry with city/county/eup/myeon/dong offices.

The implementation system for the establishment of the electronic resident registration system was organized in line with the basic implementation system of the administrative network project. The system was organized by the Ministry of Internal Affairs that administered the relevant affairs. DACOM was in charge of the entire project, and Korean software companies took part in the development of the system. In the area of civil registration management, Samsung SDS took part in the development of software for the host, and Byuksan Information Industry handled the expansion of the system nationwide. The tasks eligible for digitalization in civil registration management and the scope of development were divided into tasks requiring online immediate processing, tasks requiring batch processing, and other affairs. Tasks requiring online immediate processing included data management such as code management and register printout; civil registration affairs; and administrative and welfare areas including military service, civil defense, livelihood protection, and medical care. Batch processing included data management including affairs on administration and code management, notification related to civil registration, statistics, and public viewing and inquiry.

Since then, the civil registration sharing system was established and various types of data that had been independently generated and managed by each government ministry were integrated, and the system was built in 2001. One hundred six types of services on civil application affairs were launched in 2002. In 2004, software for the civil registration

computerization system, which superseded manual recording of RR card, was developed in 2004, and with the use of the software, the project for building the RR card into a database was implemented from 2005 to 2009 (Yoon, et al, 2015).

The civil registration information system is composed of the central information system and the city/county/district information system. The central information system offers data on civil registration, CRVS, confirmation of the issuance of the RR card, verification of authenticity of the certificate, and other affairs of government officials of city/province/country/district. The city/county/district information system is linked with the government officials of city/country/district/eup/myeon/dong and is used for such affairs as move-in/move-out reporting, public viewing, distribution, RR card handling, and birth registration. These two systems are connected to the administrative information sharing system of 31 central administrative organizations (70 tasks) including the Ministry of Foreign Affairs, National Tax Service, and Statistics Korea. Also, the central and city/county/district information system handles online the birth registration, public viewing/distribution of the RR card, and issuance/renewal of the RR card through the civil petitioner, Minwon 24, and kiosks.

3.3. The Family Register and the Information System on Family Relations Registration

3.3.1. Introduction of the Family Relations Registration System

The Family Register was the civil registration system of Korea in the past. It recorded the status of citizens according to “family” with respect to the head of the household. Asian countries including Japan, India, Lao PDR, and Myanmar had similar systems, and family relationships were recorded in the “family book,” the “household registration book,” or the like. The Family Register System was a legal institution that grouped the family with respect to the male head of the family and recorded succession of the family through direct male descendents.

In 2005, the Constitutional Court declared the Family Register system to be discriminatory based on gender in that it upheld stereotypes on the roles of gender and regarded individuals as tools for maintaining the family lineage and, therefore, that it was incompatible with Article 36 (1)[12] of the Constitution of the Republic of Korea, which sets forth the right to autonomous decision-making of individuals and family members. Accordingly, the Court declared the system

12) Article 36(1) of the Constitution: “Marriage and family life shall be entered into and sustained on the basis of individual dignity and equality of the sexes, and the State shall do everything in its power to achieve that goal.”

to be incompatible with the transition towards democratic relationships of modern families and family types (Constitutional Court, February 3, 2005). Following the abolition of the Family Register system, the Act on the Registration, etc. of Family Relations, which stipulated 'matters concerning the registration of establishment and changes in family relations such as birth, marriage, divorce, etc. of people and matters concerning certification thereof,' was enacted in April 2007 and enforced in January 2008.

The Family Relations Registration system organizes the family relations register according to the permanent domicile of individual citizens, unlike the family register that places the family head at the center. The system abolishes the principle of patrilinealism and allows a child to have its name entered in the mother's family register. Unlike the previous Family Register system that determined status of citizens in each household with respect to the head of the family, the Family Relations Registration system registers each individual citizen and places importance on the identity of individual citizens.

Table Ⅲ-19 | The Functions of Family Relations Registration System

	Details
Official notice/notarization of status of residents	• Status of individual residents is registered, put into official notice and notarized
Official notice/notarization of family relations registration	• Items entered on the family relations register are presumed to be true and are very credible. However, due to the possibility of being exposed as a result of use as counterevidence, the items are not officially recognized.
Official notice/notarization of nationality	• There is no separate register for nationality. In accordance with the family relations as listed on the register, the citizen shall be put on official notice and notarized as a citizen of the Republic of Korea (Acquisition or Loss of Nationality, Article 11, Act on the Registration, etc. of Family Relations).
Basic data for Population Change Survey	• Birth, death, marriage, and divorce have been reported in the Population Change Survey categories in the Family Register since 1970, and they are used as the basic data for the Population Change Survey (Designated Statistics, Article 17, Statistics Act; Article 5, Regulations on Population Change Survey).
Civil Registration data	• Changes in family relations can be registered on the Civil Registration Table, or the registered items may be modified or deleted (Articles 14 and 15, Civil Registration Act).
Data relating to inheritance of property	• Can serve as basic data for ligation on inheritance of property in civil lawsuits

The database of the family relations register was established for management of data on individual citizens. Information on others than oneself could be used when necessary. Five types of certificates were issued from the electronic family registration register depending on the purpose of certification, which minimized the disclosure of personal information for persons other than the one concerned. Transformation of the traditional family register system into the family relations registration system brought about democratic institutional reforms such as those for gender equality and protection of personal information as well as e-government services through the establishment of the information system.

From the perspective of CRVS, family relations registration serves extremely varied purposes, similar to those of the family register system. In other words, family relations registration serves diverse judiciary and administrative purposes including identification of residents, family relations registration, official notice/notarization of nationality, civil registration, vital statistics, and basic data for inheritance.

3.3.2. Organization handling Family Relations Registration and work process

The registration of family relations is a government task handled by the Supreme Court. The Registration Bureau of the National Court Administration processes administrative affairs works in collaboration with the Local Administration Bureau of the Ministry of the Interior, which handles civil registration affairs. The Supreme Court delegates supervision of registration affairs to the cities and townships (si/eup/myeon). The supervision of registration affairs is delegated to the family court, which has jurisdiction over the place where the office of si/eup/myeon is located. Offices under the local district governments handle the civil registration affairs, and different channels within the same organization process both the family relations registration affairs and civil registration affairs. The Metropolitan Government does not play a major role in the registration affairs of family relations. Since the registration of family relations is a government task delegated to the head of si/eup/myeon district offices, the expenses incurred are borne by the government.

The development, management, and upgrading of the family relations registration system is a government task handled by the Central Control Office of Computerized Information. The Central Control Office of Computerized Information under the National Court Administration has the following responsibilities including keeping and management of registers, etc., management of user information, etc. (“Regulations on the Registration, etc. of Family Relations”, 2016).

1. Keeping and management of registers, etc.
2. Management of index information including registers
3. Management of user information
4. Management of codes and precedents
5. Information sharing with appropriate organizations
6. Management of statistical data on registration of family relations
7. Maintenance of the system program
8. Requirements in data processing, registration of problems, countermeasures, and technical support
9. Keeping and management of registration information on family relations
10. Security management of registration information on family relations

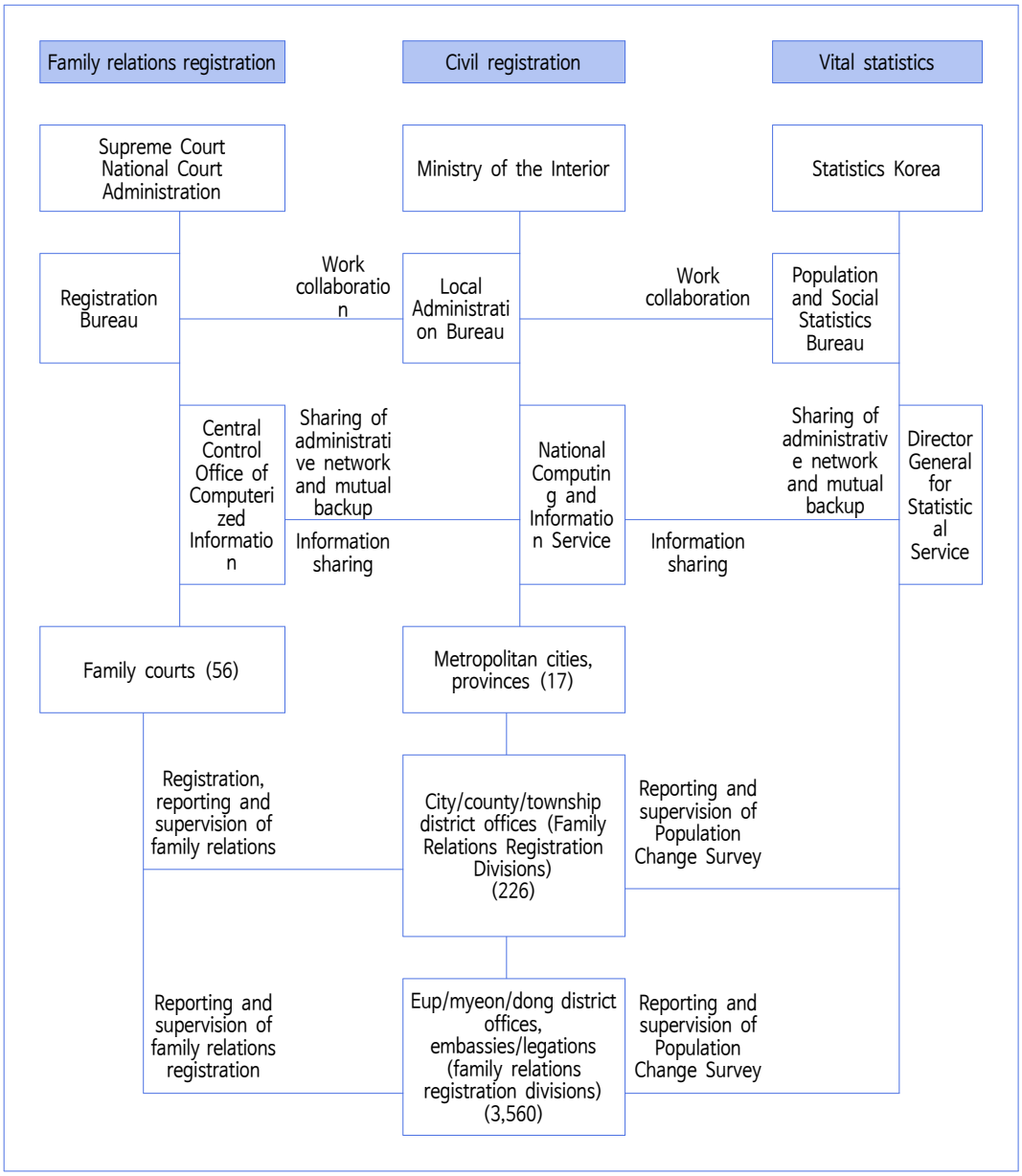
The Central Control Office of Computerized Information is backed up in real-time with the National Computing and Information Service in Daejeon, which integrates and manages the information systems of the central government ministries. Through the administrative information sharing system, information among the government organizations is shared and disclosed to the public. For example, information on the registration of family relations is shared with the Ministry of Justice (nationality), National Tax Service (inheritance), and other central administrative organizations. The civil petitioners may handle tasks such as issuance of certificates on family relations or internet Q&A by connecting to the administrative information sharing system through the Minwon24 system.

For registration of family relations, the civil applicant fills out the birth report and submits it to the computerized information processing unit of the family relations registration division of district offices. The report is processed and stored on the information system on family relations registration of the Central Control Office of Computerized Information under the National Court Administration, and it is then transmitted to the civil registration information system of the Ministry of the Interior. The Resident Registration Number is given on the Resident Registration Table, and the birth becomes official. The Population Change Survey, which is simultaneously compiled in the upper and lower sections of the same forms as the birth report and death report, is transmitted to the Statistical Office of Korea on a periodical basis and tallied. The following figure represents the governance and work process of CRVS including family relations registration, resident registration, population change survey, etc.

Furthermore, unlike the Family Register Act, the Family Relations Registration Act includes regulations on the information system for the electronic processing of family relations registration affairs. The Family Relations Registration Act is a consolidation of the Resident Registration Act of the Ministry of the Interior and the Electronic Government Act. Numerous regulations including those on matters on compiling and recording the register, processing

registration affairs, using the registered computerized data, issuing certificates and filing reports using electronic documents call for computerized processing through the computerized data processing system.

Figure Ⅲ-8 | Organizations Handling Family Relations Registration and Work Flow



*The numbers in parentheses are the numbers of organizations (as of 2015)

Table Ⅲ-20 Major Regulations the Information System of the Act on the Registration, etc. of Family Relations

Clauses	Major Contents
Compiling and recording of the register (Article 9, Paragraph 1)	The registration matters on family relations entered and processed by the computerized information processing system are categorized and compiled by individual citizens based on the permanent residency
Processing of registration affairs (Article 11)	The heads of the si/eup/myeon offices process the registration affairs through the computerized information processing system. The Minister of the National Court Administration separately compiles and manages the same computerized data listed on the registry.
Use of computerized registration data (Article 13)	Approval from or consultation with the Minister of the National Court Administration is necessary when using the registered computerized data
Issuance of certificates (Article 117; Article 14-2)	The person him/herself, his/her spouse, parents or children may request perus an electronic method the whole or part of information recorded in the register (Article 117); the person him/herself, his/her spouse, parents or children may request the issuance of certificates for each of the registered matters through the internet (Article 14-2)
Reporting in Electronic Form (Article 23-2)	Reporting concerning the registration prescribed by the Supreme Court rules may be handled electronic form using a computerized information processing system. The reporting affairs will be handled by the head of si/eup/myeon of the legal domicile of the person him/herself.

3.3.3. Establishment of the Electronic Family Relations Registration System

The Family Relations Registration system was formerly the Family Register system, It was not included in the National Basic Information Project (1987) dedicated to building the government's central database. Following the implementation of the National Digitalization Project (1996), the family register system was implemented as part of the judiciary digitalization project. Digitalization of the family register was promoted as part of the reform to the administrative processes, undertaken in response to customer dissatisfaction concerning the lack of accuracy and consistency in registry data, which was paper-based and manually handled by civil servants, as well as the increase in cost and time as a result of having to visit the district office. This project emphasizes digitalization of the registry through improvement in the quality of data on the family registry, which was prone to inaccuracies due to manual handling, failures of users to make renewals on time, and complexity of appended documents (Table III-21).

Table Ⅲ-21 | Problems and Measures to Improve the Family Register System based on Paper and Manual Work

Name of Organization	Problems	Improvements
National Tax Service	Data on the deceased is identified one year later inheritance tax	Target of inheritance tax is identified immediately through the establishment of family register digital network
Statistics Korea	Inaccuracy in vital statistics including birth, death, marriage, and divorce	Accuracy secured in vital statistics
Ministry of Foreign Affairs	Frequent send back omissions in documents and fax reporting of family registry by the diplomatic missions; complication in receiving certified cop of family registry for issuance/renewal of passports by Korean nationals living abroad	system established for reporting and issuance of family registers in the diplomatic missions
Ministry of Justice	Inaccurate in writing full name in Chinese characters; requests to append a certified copy of the family register in the civil application documents for Korean nationals living abroad	Prompt and accurate issuance of certified copy related to nationality by the diplomatic missions

Source: Lee, K.H, 1999: 65

The Supreme Court developed the information system on family relations registration following the three major processes of formulating the basic plan, establishing the database, and building the internet-based system (Refer to Table III-22). During the first project, the Supreme Court established the Central Control Office on Computerizing the Family Register based on Client/Service (C/S) in 2001, took over the digitalization project of family register affairs promoted by the Ministry of the Interior, and formulated the comprehensive plan on the digitalization of the family register.

As part of the second project, the Supreme Court developed the Client/Service family register information system in 2002 and developed the web-based system in May of 2003, which was expanded to some 233 cities and districts nationwide as well as over 1,600 government offices handling family register matters. During the administration of President Kim Dae-jung, the Ministry of the Interior pushed ahead with 11 projects including Government for Citizens (G4C) that was aimed at reforming the civil application process, the Home Tax Service (HTS), and the Korea Online e-Procurement System (G2B) as well as 31 projects during the administration of President Roh Moo-hyun including development of the comprehensive administration information system and administrative information sharing system among the city and district offices.

Table III-22 | Digitalization Stages of Family Relations Registration Affairs by the Supreme Court

Project Classification	Family Register Digitalization Plan (2001)	Family Register Information system (2002~2007)	Family Relations Registration System (2008~2012)	Electronic Family Relations Registration System (2013~present)
Major performances	Took over the family register digitalization project from the Ministry of the Interior Formulated comprehensive plan on digitalization of family register Established the Central Control Office on Computerizing the Family Register based on C/S	C/S-based family register information system expanded nationwide Web-based family register information system developed and expanded nationwide Public reading and issuance service launched in the diplomatic mission based in Japan Statistic program developed	Information system on family relations registration established (2006-2007) Unmanned certificate issuing machine for certified copies and certificates installed Linkage with the nationality system of the Ministry of Justice Linkage with the Resident Registration system (2011)	Public reading and reporting of internet-based family registry Internet issuance of various certificates on family relations Issuance of certificates by diplomatic missions overseas through the method of certified mail (77 diplomatic offices in 35 nations)

Source: National Information Society Agency, 2014: 138

As part of the third project, the family relations registration system was developed in 2008 to replace the existing family register system following the enactment of the Act on the Registration of Family Relations that same year, after the Constitutional Court declared the Family Register Act unconstitutional in 2005. The new system registered reports on family relations registration and allowed the public reading and issuance of certificates for registration items. In the past, the personal information of all members within the family register was carried in the registry, exposing unnecessary personal information. Under the new system, five certificates that minimized the disclosure of personal information were issued including the family relations certificate, the basic certificate, and the marital relations certificate depending on the purpose of certification. With the operation of the family relations registration information system, anyone may register birth, death, marriage, or death with the government offices handling family relations registration including city and district offices nationwide and receive certificates. Certificates may also be issued from some 1,000 unmanned certificate issuing machines established in government offices throughout the nation.

Fourth, with the launching of the electronic family relations registration system (http://efamily.scourt.go.kr) in 2013, it became possible to receive certificates conveniently through the internet both at home or office without having to visit a government office or apply for the certificate via mail. Particularly, through the nationality system of the Ministry of Justice (2008) and the resident registration system (2011), public reading, issuance,

reporting, and application for various certificates on changes in family relations including birth, marriage, adoption, or death, as well as changing one's name, correction in the register, and creating a surname by those who have acquired the Korean nationality became possible through the internet by linking to the electronic family relations registration system of the Supreme Court or the Minwon24 system of the Ministry of the Interior. Since 2015, internet reporting service has also been provided, enabling civil petitioners to file reports of birth, marriage, or death online. This has greatly improved convenience for the public while significantly reducing social costs.

3.3.4. Major features of the electronic family relations registration system

The start-up screen of the electronic family relations registration system introduces as major features the public reading and issuance of the family relations register and compilation of internet reports (Figure III-9). The system is also linked to the internet registry office that handles the registry affairs, another important function of the Supreme Court, as well as the online lawsuit administration system. The lowest section in the start-up screen of Minwon 24 system links to the electronic family relations registration system and the internet registry office.

Figure Ⅲ-9 | Start-up Screen of the Electronic Family Relations Registration System



Source: Electronic Family Relations Registration System (http://efamily.scourt.go.kr)

The details of affairs and processes in the information system are as follows: First, the Family Registry Act of the past had virtually no restrictions on issuance of certified copies of the family register, which led to the leakage of personal information. Under the Family Relations Registration Act, certificates are classified by purpose; information categories provided are restricted; and the person having the authority to apply for the issuance is restricted to the person him/herself, spouse, lineal blood relatives, and agents. All of these restrictions have institutionalized the protection of personal information. The institutional reforms for protecting personal information are reflected in the means of perusing, issuing, and reporting in the electronic family relations registration system. To make use of the electronic family relations registration system, an additional procedure for confirming the identity of the person him/herself is needed under Article 2, Paragraph 8 of the Electronic Signature Act using the authentication certificate as the medium.

Second, when accessing the electronic family relations registration system and the Minwon 24 system through the internet, five general certificates including the family relations certificate on the person him/herself, spouse, and children as well as basic certificates can be issued free of charge. The number of public viewings of joint use of family relations information through the Minwon 24 system (http://minwon.go.kr) increased from 1.83 million in 2011 to 2.91 million in 2015. This is the fifth most common use of the system following issuance of certified copies of the Resident Registration Table, certificate on land registration, land register, and certificate on building registration (Ministry of the Interior, 2016:134).

Table Ⅲ-23 | Types of Certificates and Information to be Entered in Certificates

Classification	Information Entered	
	Common	General Certificates
Certificate of family relations	Permanent residency, name, gender, origin of surname, date of birth, resident registration number of the person him/herself	Matters concerning parents, spouse, children born in present marriage
Basic certificate		Matters concerning birth, death and loss of nationality of the person him/herself
Certificate of marital relations		Matters concerning spouse and current marriage
Certificate of adoptive relations		Matters concerning birth parents/adoptive parents or adopted child
Certificate of child adopted through full adoption		Matters concerning birth parents, adoptive parents or child adopted through full adoption

Source: Electronic family relations registration system (http://efamily.scourt.go.kr)

Third, electronic filing of reports is possible through the electronic family relations registration system without having to visit the district offices of si/eup/myeon when changing the name registered in the family relations register, when a foreigner acquiring Korean nationality creates a new Korean surname, when a Korean national who is not registered as a citizen of the Republic of Korea in the family relations register creates a new family relations register, or when correcting errors or omissions in the family relations register that were made when originally recording the family relations register (Table III-24). When filing reports for any of these four kinds of tasks through the internet, there is no need to submit a certified copy of the decision of permission from the Court, which precludes the need for paper documents and simplifies the work process.

Figure III-10 | Start-up Screen of Minwon 24 System



Source: Minwon 24, the government civil application portal (http://www.minwon.go.kr)

Table Ⅲ-24 | Filing of Reports through Visits and the Internet

Category	Reporting	Reporting the internet
Identification	Identification card (resident registration card, etc.)	Authentication certificate
Certified copy of decision of permission	Necessary	Unnecessary
Place of filing the report	Office family relations registration (city and district offices)	nternet
Notification of result	None	Notification via SMS text or e-mail (upon consent of reception)
Identification of the person submitting the report	The person filing the report does not have to be present	Only the person filing the report may apply for the report
Reporting time	9AM to 6PM on weekdays (working hours of civil servants)	The same
Matters to be reported	All matters to be reported	Changing one's same, creating a new surname by a foreigner who has acquired Korean nationality, creating a new family relations register and making correction in the family relations registry
Fee	KRW 1,000	Free of charge

3.3.5. Building the electronic family relations registration system

1) Evaluation of the development stages of the information system on family relations registration

The information system for family relations registration has been significantly upgraded in the new millennium. The system has afforded several important benefits including streamlining of the work process, reduction in processing time, and greater convenience and satisfaction for both officials and clients. For example, the procedure for Korean nationals living overseas to receive the family relations registration certificate has evolved largely in four stages.

First, prior to the digitalization of the information system, Korean nationals residing overseas

had three choices in applying for a copy: to apply for the copy by mail from the district office, to have an agent in Korea visit the district office to apply for the copy of the register, or to apply for the copy at the district office through the embassy in the foreign nation. In these cases, it took at least one month to receive the certificate.

Second, when providing computerized metropolitan computerized service through the database, the Korean nationals living abroad submitted the application form in person at the diplomatic mission overseas. The embassy then filed the application with the Supreme Court electronically. The certificate issued was transmitted and then given to the Korean national living overseas when he/she visited the consulate. The time required was significantly reduced to only one or two days.

Third, through the internet-based e-government service, Korean nationals overseas were able to apply for and receive the certificate through the internet, and the time needed was reduced to a mere ten minutes. The problem is that even for the internet issuance of certificates, the civil petitioner had to submit a paper document to the organization requiring the certificate. In order to reduce the demand for the internet issuance of certificates, there is a need for information sharing between the organization holding the information on family relations registration and the organization in need of the information. As mentioned previously, the electronic family relations registration system of the Supreme Court issues four types of electronic reports and five types of electronic certificates.

The final stage is the Supreme Court, which holds information on family relations registration. The Supreme Court provides the information to the organization that requires it through the administrative information sharing system. In the event information is shared among the organizations, there is no need to apply for the issuance and submission of paper documentation. However, since information on family relations registration is extremely sensitive and personal and its leakage or abuse would invite extreme public displeasure, approval beforehand for transmission and post confirmation of receipt by the civil petitioner is essential when sharing information among the organizations. To this end, the Electronic Government Act sets forth the “Prior consent of owners of information” (Article 42) and “Rights of owners of information to request access” (Article 43). It is the choice of the civil petitioner whether to receive paper documentation through the internet and submit it to the organization, which involves some inconvenience, or to give prior consent for sharing of information between the Supreme Court and the organization in need of the information and to not receive and submit paper documentation. At present, the Supreme Court does not allow the sharing of information on family relations registration with other organizations through the administrative information sharing system on grounds of protecting personal information and separating the function of the judiciary and administrative branches. There is the need to consider introducing

an information sharing system among the organizations to virtually guarantee complete protection of personal information.

2) Monetary benefits of the electronic family relations registration system

The Supreme Court has built and further enhanced the information system on family relations registration in the new millennium, actively reflecting the public demand for efficiency in judicial administration and public services. As a result, electronic processing of CRVS including birth and death is rated far ahead compared with that of other advanced nations. Among the many benefits of the electronic family relations registration system, the monetary benefit is estimated at KRW 234.5 billion annually(National Court Administration, 2010). This includes the benefit of the civil petitioner receiving certificates through the internet without actually having to visit the government office.

Table Ⅲ-25 | Benefits of the Electronic Family Relations Registration System (yearly) (unit: KRW 100 million, %)

Benefits (yearly)	Amount (%)
Effect of internet issuance	2,301(98.1)
Effect of providing statistical data	26(1.1)
Effect of internet reporting	13(0.6)
Effect of linking the judicial affairs system with the resident registration system	5(0.2)
Total	2,345(100.0)

Source: National Court Administration, 2010

The second advantage of the system is the intangible benefits such as performance reforms, increased capacity of the staff who are handling tasks, and increased customer satisfaction. The information system handles approximately 2.4 million cases annually through the information system, offering increased efficiency in performance and standardized service. There should also be greater convenience for civil petitioners as a result of the internet issuance of some 10.76 million certificates and internet processing of over 240 thousand cases annually. Furthermore, some 1.1 million data filings are expected to be processed as statistics and reported to the general public as statistical data(National Court Administration, 2010).

The family relations registration system was also recognized in the international community, becoming the first judiciary system to obtain ISO 20000 certification (2010) and recognized by the Information Security Management System (ISMS) in 2014.

3.4. Information System on Civil Registration

3.4.1. Overview

The Digitization of RR Project seeks to promote the convenience of residents and enhance efficiency in administrative affairs by digitalizing data on civil registration that records residential status of residents, etc. The nationally consolidated CMIS enables remote entry of data on residents, civil petitioning, civil registration affairs, support for relevant organizations (Civil Defense, military mobilization, etc.), and processing of various statistical affairs.

3.4.2. History

The Digitization of RR Project in the initial stage was carried out as part of the Administrative Information Infrastructure Implementation Project when Korea digitized 43 types of administrative work for 25 government agencies.

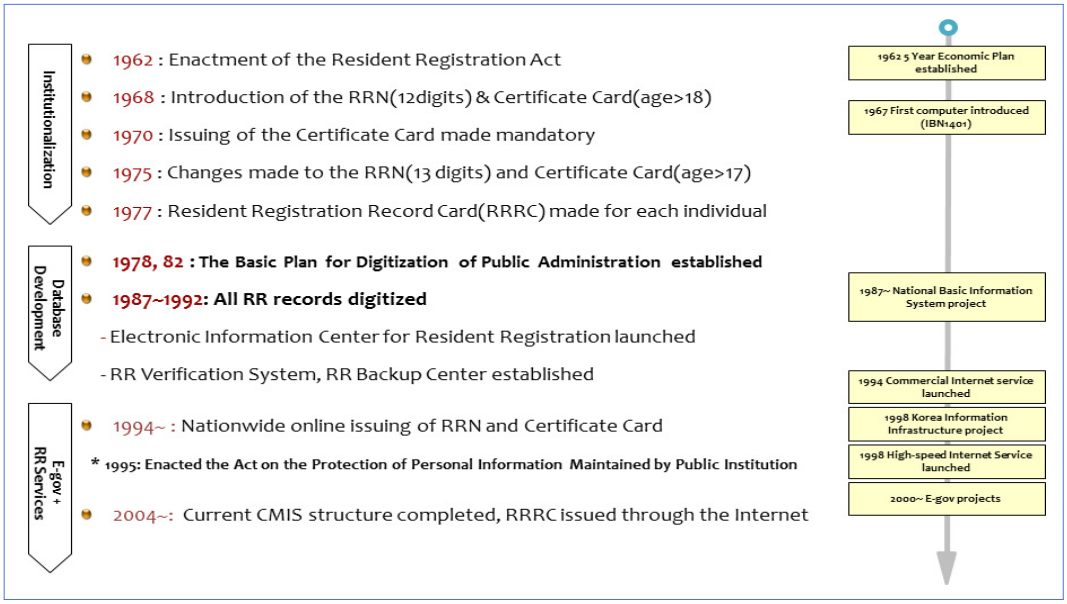
The following projects: ① RR, ② real estate (MOI), ③financial statistics, ④ automobile management (Ministry of Transportation), ⑤ employment management (Ministry of Labor), and ⑥ customs management (Korea Customs Service) were the first to be implemented for digitizing the administrative tasks of five government agencies.

Of these projects, the beginning of the Digitization of RR Project can be traced back to the pilot project for digitizing the resident management for eight local community centers nationwide from April 1986 to March 1987 and the one-year pilot project for digitizing of RR record cards of three regional offices in Seoul in 1988, which all served as preparation for the basic digitization process.

Since then, the RR Information Network Project (1988-1992) that developed various systems, input relevant data, and built the database, the Online Issuing Service for RR Record Copies from local resident community centers (1991), the Digitization of Electoral Work (1992), the Issuing Service for RR Record Copies from non-resident local community centers (1994), the Simultaneous Processing for Move-in and Move-out Reporting Service (1995), the Digitization of Photos/Fingerprints and Names in Chinese Characters for the RR Record Card (1999-2000), and so on have been implemented.

The diagram below shows Korea's overall implementation process that took place from the enactment of the RR Act, which was the beginning of the implementation of the CMIS.

Figure III-11 | History of CMIS Developement



Source: Ko, M. H., 2012

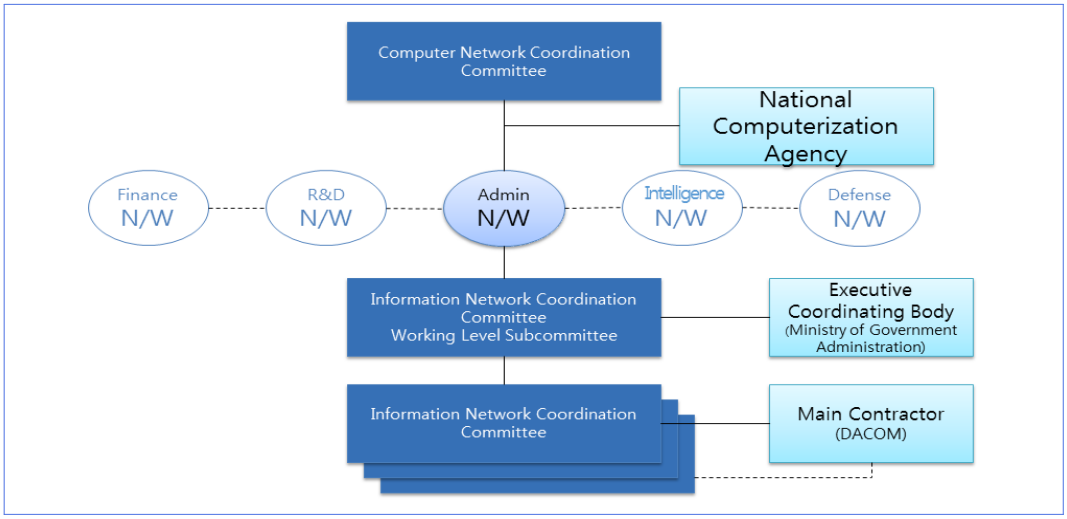
3.4.3. Governance and Legal Framework

1) Governance for the Administrative Information Network Implementation Project

The implementation structure of the Administrative Information Network Implementation Project consisted of five various organizations; three committees, including the Information Network Coordination Committee, which was the highest-level decision making body of the project; three functional departments; the National Information Agency (NIA); and the contractor.

The Information Network Coordination Committee deliberated on and coordinated the base policies for national informatization, determined how to finance and repay the cost of the implementation of the project, and reviewed and coordinated the implementation of various technologies and equipment for the project. This committee also reviewed plans for making improvements and amendments to the legal framework and regulations regarding the purchase of equipment for organizations. The committee reviewed and coordinated the project plan, evaluated the result of the implementation, and supervised the project. The implementation system for the administrative information network and tasks administered by each organization are summarized in Figure III-12 and Table III-26.

Figure Ⅲ-12 | Implementation Structure of the Administrative Information Network Implementation Project



Source: National Information Society Agency, 2005

Table Ⅲ-26 | Major Agencies and Tasks

Organization	Functions
Information Network Coordination Committee	• Deliberate•coordinate the basic policies for national informatization • Finance and repay funds, deliberate•coordinate related technology and implementation of equipment
Working Level Subcommittee	• Review agenda before submission to the Information Network Coordination Committee
Administrative Information Network Implementation Committee	• Deliberate•coordinate project plans for the administrative information network • Deliberate•coordinate delegated matters from the Information Network Coordination Committee
Working Level Subcommittee	• Review agenda before submission to the Administrative Information Network Coordination Committee
Overseeing Organization	• Oversee implementation of tasks such as collaboration between relevant organizations
Managing Organization	• Review and confirm requests and content of development for tasks for digitization
User Organization	• Make use of various information available on the administrative information network
National Computerization Agency (NCA)	• Supervise the implementation of the administrative information network project and standardize related technology
Contractor	• Develop priority tasks and build the information network

Source: Kwon, H.Y., Ko, Y.S., 2016 (unpublished manuscript)

Table Ⅲ-27 | Major Events of Korea's Digitization of RR

Year	Contents
1986. 4~1987. 3	Pilot project for digitization of resident management (8 local community centers nationwide)
1987. 2	Finalization of the Comprehensive Plan for Administrative Information Network
1988. 5~9	Input of RR data (completion of digital input in 1989) (52.15 million counts → households: 10.9 million / individuals: 41.25 million)
1991. 1	Public service available at local community centers of residency (first time electronic issuing of RR Record Copies)
1991. 11	Nationwide online network connectivity
1994. 7	Abolished move-in/out reporting, implemented one-time move-in reporting
1995. 5	Integrated move-in/out reporting(one-time move-in) and issuing of RR Record copies irrespective of residency
1997~1998. 11	Built the RR Certificate Card Issuing Centers (implemented hardware, re-developed all software)
1999. 3	Input of video data in all local community centers nationwide
1999. 9~2000. 5	Reissued all RR Certificate Cards (the current plastic card), some 35.14 million cards
2000. 12	Built and operated Resident Summary DB for Comprehensive Information System of district office administrative affairs
2001. 8~12	Built the RR Information Sharing System
2002. 2	Started providing services of the RR Information Sharing System
2002. 1~6	Built the RR Information Backup Center
2002. 1~2003.9	Implemented the project for transferring the RR System from local community centers to district offices
2003. 9	Transition to nationwide RR DB (started: 2003. 9)
2003. 2~2004. 5	Developed the Verification System for Authenticity of RR Certificate Card
2004. 4	Nationwide Internet based issuing of RR Record Copy service available
2005. 5~2009. 12	Project for Building DB of Original Image of the RR Record Cards
2009. 10	Nationwide online move-in reporting service available Online move-in reporting for civil service applicant possible through the G4C system

Source: Kwon, H.Y., Ko, Y.S., 2016 (unpublished manuscript)

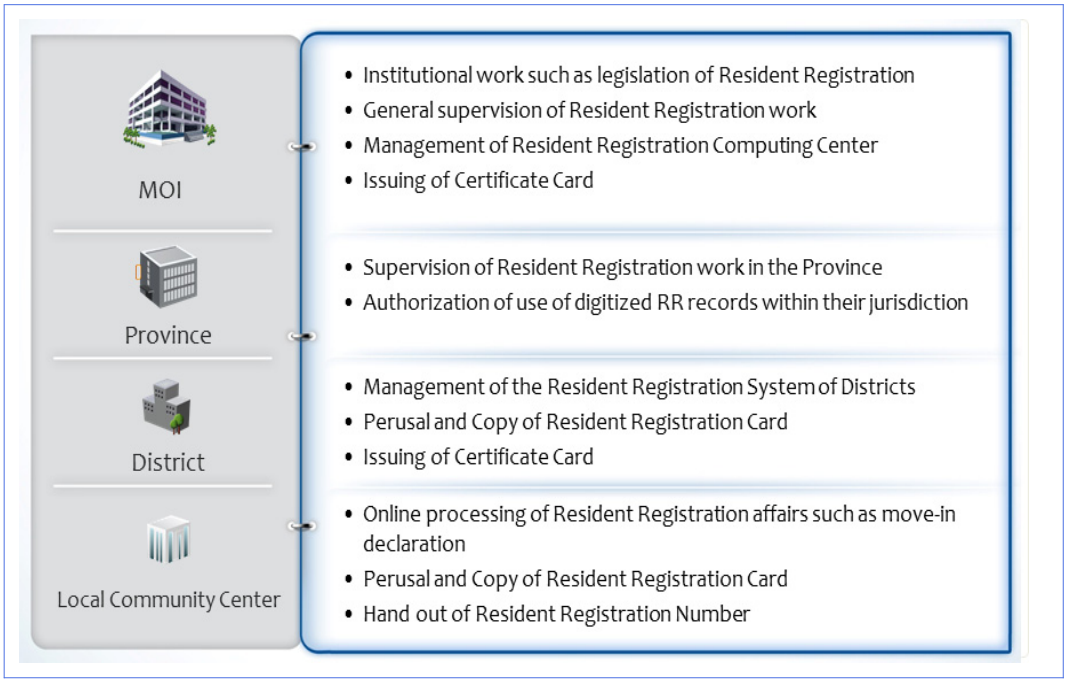
The RR Information Center was used as a comprehensive working-level TFT during the Digitization of RR Project. This center was established based on the requests made by the mayors for district offices to issue RR Certificate Cards and comprehensive process-related tasks. The first center started its services in December 1997 in Gyeonggi Province. In the beginning, 11 people operated this center to 24/7 year-round service so all the time one pair

of persons worked with rotation. A total of 29.6 billion KRW was used to implement and install the nascent RR Information Center during its first operation, which included the main digital equipment, servers, storage, backup, communications equipment, security devices, etc. and 2.5 billion KRW was needed annually to maintain this center.

The main tasks of the RR Information Center are as follows: ① maintain and manage changes in the RR information; ② provide the base information needed for developing national policies (basic livelihood support, national and regional taxes, issuing passports, military service, identity checks, driver's licenses, national pension, national medical insurance (810 million times release in 2001); ③ issuing and managing the RR Certificate Cards (3.2 million cards in 2001, 11,000 cards per day); ④ training and managing the software training program for local autonomous organizations; ⑤ operating the RR Information Sharing System (implemented from June-December 2001) and the authenticity service for RR Certificate Card as well as providing verification services for RR Record copies; and ⑥ maintaining IT equipment and operation management, etc.

Currently, the structure of the CMIS of Korea has been systematized, as shown in the table below.

Figure III-13 | The Structure of the CMIS of Korea



Source: Kwon, H.Y., Ko, Y.S., 2016 (unpublished manuscript)

2) Legal Framework for Implementing the Administrative Computer Network

The implementation of the Administrative Computer Network was possible because Korea provided clear and strong legal support. Enacted on May 1986 and executed in 1987, the Act on Information Communications Network Expansion and Promotion of Utilization was the legislation for this network.

By defining the necessary items for building and improving the foundation for establishing an information society, the Act on Information Communications Network Expansion and Promotion of Utilization sought to improve Korea's global competitiveness and proactively absorb the coming wave of this information society in order to become a fully developed nation that would improve its citizens' quality of life of the people and public welfare. This act can also be seen as a sign of Korea's strong will to prepare for the future of having a competitive informatization policy and implementation of public informatization programs.

The main contents of this Act are as detailed below.

First, the government ministry responsible for the computer network was designated as the Ministry of Communications and Post. In order to facilitate cooperation among government agencies, the Computer Network Coordination Committee was set up under the Presidential Office.

Second, in order to expand the network and promote its use, the government established a relevant basic plan and implementation plan every year and announced them.

Third, specialized organizations could be designated and promoted to facilitate the efficient development of technologies and equipment related to the information communications network. Also, the Act stipulated that the government had to comprehensively manage and disseminate a technology map for the relevant industries, as well as information on technology.

Fourth, the institutions for regulatory approval and technological standards of this equipment were legalized in order to guarantee compatibility and connectivity between each other. By limiting the sales of devices that did not obtain regulatory approval from the Minister of Information and Communications, consumers were protected from accidentally using incompatible devices and utilization efficiency was raised as well.

Fifth, in order to lead the effort in expanding the network and promoting its use by the government and public organizations, this Act allowed for the implementation of national information and a communications network, promoted pilot projects that made a large impact on the private sector, implemented an information sharing system, and encouraged joint research and development related using computer network.

Sixth, the adverse effects of digitization were minimized and stability and trust in the computer network was secured by limiting important information on Korea's industries, science, and technology to exit to abroad and also limiting the leakage of personal information processed within the network.

Together with the will of the government and concentrated investments, this Act allowed for the preparation for building the database of administrative information frequently used daily life, such as real estate and vehicle registration information. Moreover, individual laws included of having jurisdiction over their information were enacted which made it possible to digitize and systematize this information.

3) Regulation on the Operation of the CMIS-Directive Ministerial Decree of Management of the RR System (Regulation on Operating and Managing the RR Information System)

Table Ⅲ-28 | Main Contents of Regulation on the Operation of the CMIS

Category	Details
Data Management	• Prevent loss·damage·theft, keep and maintain in best condition • Designate data management personnel at the MOI and local governments • Maintain consistency of data for each system • Retain daily backup for 1 week, weekly backup for 1 month • Prepare recovery plan in case of loss and destruction of data
User Management	• Designate CMIS user, give/take away permission, preliminary user • Periodic change in user password, prohibit sharing and lending
Program Management	• Maintain list of programs used for CMIS • Prohibit changes in data structure of the CMIS programs • Disseminate guidebook on installation and operation of the program (MOI)
Information System Management	• Publish standard for IT equipment (MOI) • Perform monthly and periodic inspection of CMIS equipment • Maintain emergency contact information list including troubleshooting and other relevant organizations • Local governments carry out needed measured laid out by the MOI's guidebook for troubleshooting
Code Management	• Specify the list and content of codes used in the CMIS and share it among government organizations • Report to MOI when local governments discover changes or error in the codes
Security Principle	• Develop technical measures in accordance with the Personal Information Protection Act and Enforcement Rule of Information and Communications Security
Access Control and Security Management for Contract Service	• Access Control: head of local governments must perform regular inspection and supervise access authority of CMIS users and report to the Minister of MOI • Outsourcing: when outsourcing the maintenance of the CMIS, the contractor must comply with the Security Management Manual for Informatization Projects; CEO of the contractor must be designated as security manager and establish their own security management system
Protection of Personal Information	• Responsible for technical/managerial/physical protection measures for the CMIS such as preservation of access logs, internal management plans, etc. in accordance with the Personal Information Protection Act • When outsourcing maintenance of the CMIS, commissioning of personal information processing must be in compliance with the regulation of the Personal Information Protection Act

Source: Kwon, H.Y., Ko, Y.S., 2016 (unpublished manuscript)

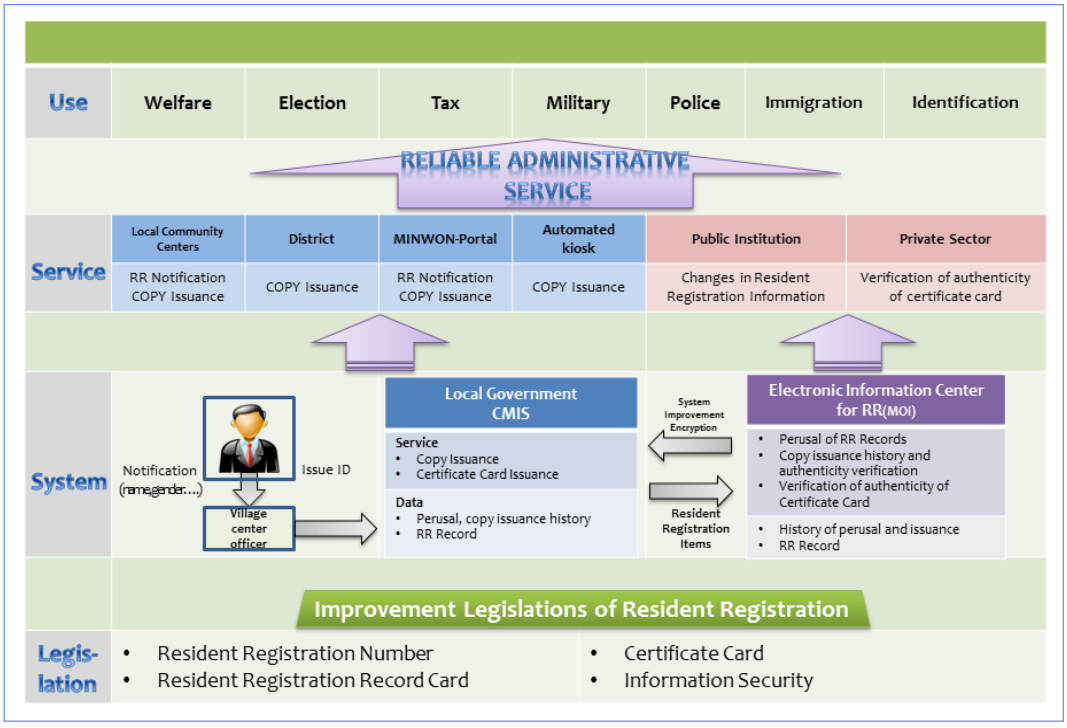
In Korea, the process and details of the management of the CMIS are outlined in the directive of the MOI and the ministerial decree of management of the RR system. Clear details on data management, user management, program management, and more are included in these regulations. Making use of the latest information, tough management of user authority and access, and the standardization of programs and IT systems have all contributed to the worldwide success of Korea's CMIS system. On the other hand, strict enforcement and management of the CMIS based on various regulations, such as the Personal Information Protection Act and Enforcement Rule of Information and Communications Security, have protected the CMIS from any major incident so far.

4) Detailed Structure of the CMIS

a) Architect of CMIS Service

The picture below shows the whole structure of Korea's CMIS, which is made up of local, central, sharing, and utilization systems. Through RR data flow and its connectivity, you can easily see what each system is doing and how the RR data is being used.

Figure III-14 | Architecture of the CMIS



Source: Song, H. J. et al, 2016

The architecture of the CMIS service in Korea includes four important elements. For the legislation part, it is possible to operate the CMIS in a very efficient manner for system itself, service, and use because both the laws and directives for RRN, RRC, RR Certificate Card, information security, and RR management are detailed enacted.

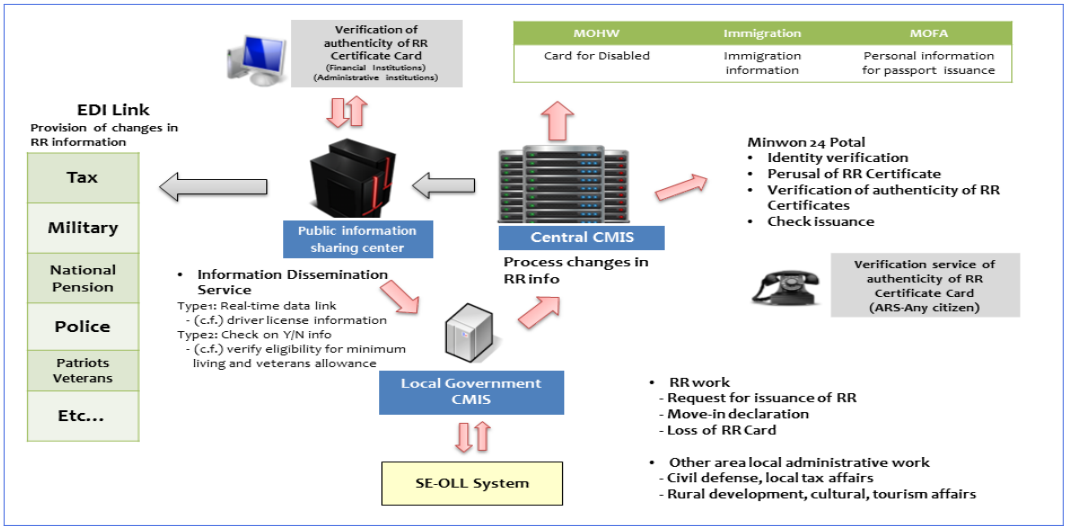
The third element is the system. The central government agency responsible for policy and the local governments responsible for the execution of this policy both built systematic systems in accordance with their roles and greatly concentrated on maintaining connectivity between the systems. This has allowed for fast, reliable, and consistent service delivery throughout Korea for all citizens.

The second and first elements allow for the provision of reliable and trustworthy RR services. Moreover, by making use of the RR DB system, more reliable services have been delivered while trust and customer satisfaction were significantly increased.

b) Flow of the RR Data and Utilization of the CMIS

Through the public information sharing center, the services of the central government agencies for taxes, military service, and police can be provided. The Minwon24 portal provides a diverse number of e-government services already. Also, the RR data is being well utilized by the Se-OLL system, which is the basis for local government e-government projects. The Se-OLL system is one of the best practices in IT. It is the information system of the Si/Gun/Gu (city/county/district) or the districts capable of efficiently supporting 23 types of work.

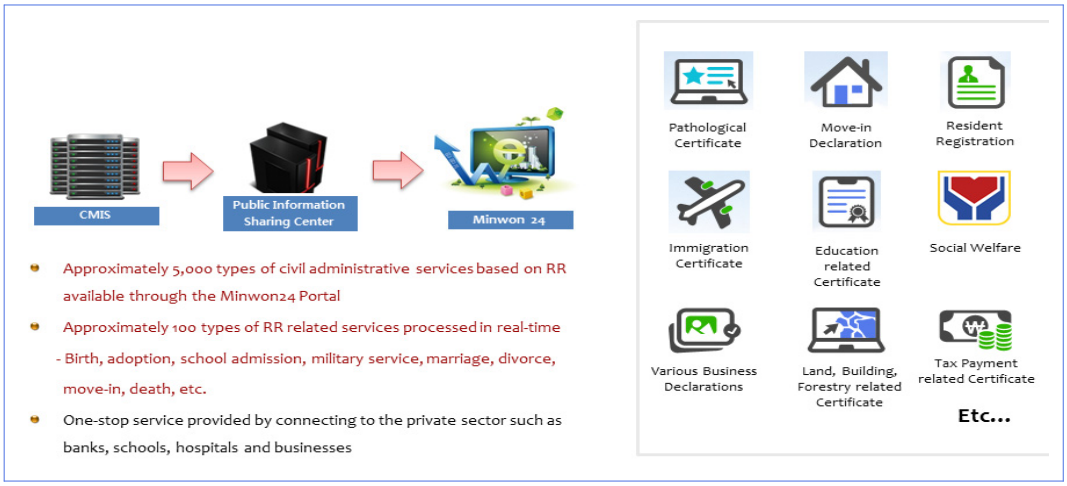
Figure III-15 | The Structure of Se-OLL system



Source: Song, H. J. et al, 2016

The picture below concentrates on the Minwon24 Portal Services provided through the CMIS in KOREA. Korea's Minwon24 Portal is a one-stop service to the citizen. Until the establishment of this service, the RR data and CMIS both played a key role.

Figure III-16 | Minwon24 Portal Service in Korea



Source: Website of Minwon 24 (http://www.minwon.go.kr)

3.4.4. Detailed System Structure of the CMIS

The base unit where basic data on RR is generated is at the district level of the RR system. The Comprehensive Administrative Information System includes and consists of both the RR management system and civil petition administration system. The main tasks within the RR management system include RR management, move-in/out reporting, the issuing of various certifications, perusal and issuing of RR record copies, work connected to RR Information Centers, connecting to the summarized database of district offices, etc. The basis of these tasks comes from RR information being input at the local community centers. The information within the RR management system changes when there is a change in the basic information in the RR database. The changed information is stored in an integrated manner with information from other diverse Internet-based civil petition administration systems (from the residency system to geographic, automobile, environmental, welfare, and other systems), which are run solely by local governments.

The district level comprehensive administrative information system is connected with the RR Information Center, which is the highest system level run and is managed by the MOI for the RR information of all Koreans. These systems are interconnected and process any request made for tasks related to changes in RR information. For example, when provinces and central

government agencies request for RR information, the RR Information Center works together with the district level comprehensive administrative information system to provide the requested information.

The RR system consists of RR digital data in 232 district offices and the integrated DB (R-DBMS) at the RR Information Center. Due to the large amount of information (individual personal information, image files, historical information, etc.) available in the RR Information Network, the efficiency of information utilization is quite high. However, from the perspective of information security, no matter what protective measures are offered, because so much information is connected to this network, there will always exist a certain amount of risk.

The process of gathering RR information can be easily understood once the network that connects the district office RR tasks and the RR Information Center is understood.

The process begins with registration of RR information at the local community centers of the district offices, which are gathered into the RR system and are also backed up for disaster recovery at the same time. The accumulated RR information goes through an information change process where the information is connected to the RR Information Center and the backup center. The connectivity to these two centers is achieved through the Korea Information Infrastructure (KII) network and the Local Government Administration Information network. There is one-day time lag to provide information to agencies requesting RR information.

When looking into the structure of work within the RR Information Center, it is easy to see how the RR information is input and statistically processed. The RR-related work within the 232 district offices is divided into three sub-systems: the RR management system, the digital legal seal system, and the RR-related work system.

Table Ⅲ-29 | Main Work of RR Management Systems

Category	RR Management System of District Office	Legal Seal Digital Service of District Office	RR Related Work System of District Office
Overview of Service	• RR reporting • RR related work • RR connected work	• RR related legal seal work	• RR related work
Main Work	• RR(move-in/out certificate) • Transfer of domicile • Processing RR Certificate Card • Perusal and delivery • Data management • Other related work	• Legal seal management • Legal seal ledger • Issuance of legal seal certificate • Legal seal for disabled • Legal seal notification • Legal seal center work	• FRR related work • In-school children related work • Election • Manual disposal of original ledger • Fine related work

Source: Kwon, H.Y., Ko, Y.S., 2016 (unpublished manuscript); Lee, S.S. et al, 2011

When civil servants of the district offices request for information, this request is relayed through the RR information utilization system. Meanwhile, the system used by the civil servants at the local community centers is connected to the RR management system of the local community centers. On the other hand, when using kiosk or accessing on-line service for record issuing is connected to both systems, which collect data from both systems and then provide this to the RR Information Center to the final end-user. From government agencies requesting for RR data, it directly provide through the RR information Center.

RR-related information can be confirmed through the information processing of the RR summary DB of the district offices when the applicant for RR services requests for this information either in-person at a local administrative office or through the unattended information system. (In these cases, only pre-authorized information can be provided to the service applicant.) Some of the tasks and services that need RR information are: RR Record copy-related work, automobile registration related work, medical benefit certification, local taxes, etc.

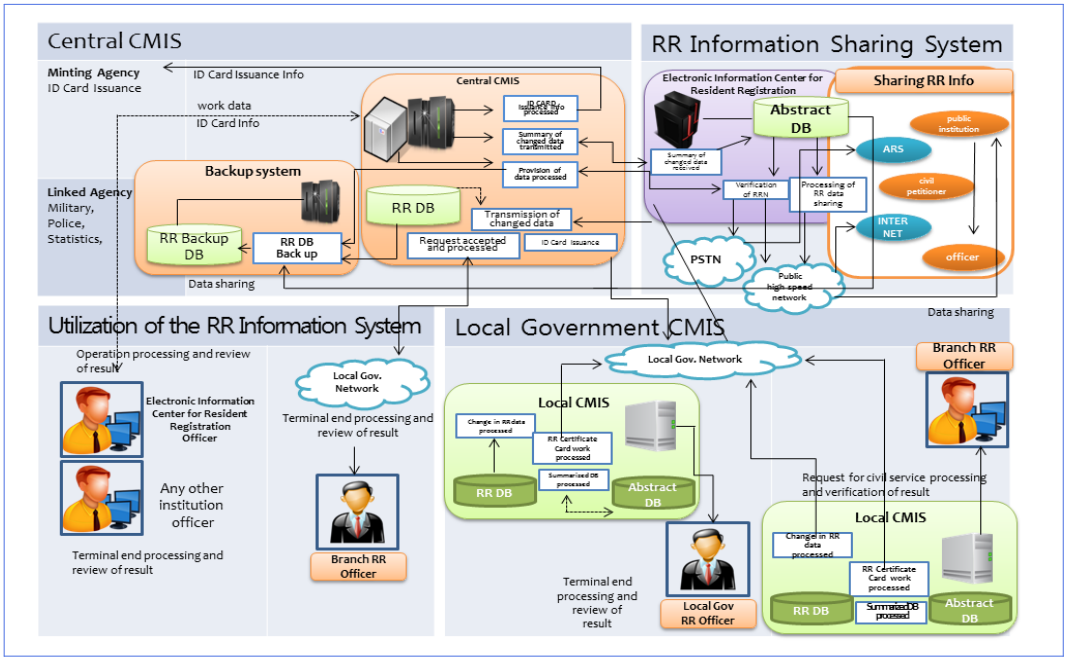
When the RIN is provided, the district office local administrative information system that made this request for information will send the RIN to the RR Information Center of the MOI and once the code is matched and confirmed, the requested information is released. On the other hand, when the district office where the service was requested differs from the district office of current residency of citizen, the requested information will be provided by going through the RR Information Center of the MOI.

For example, when a civil servant is processing tax-related task that he or she has pre-authorized, he or she can input the RIN, name of the service applicant, and purpose of the request and then receive the authorization to process the task at hand because the RR Information Center will release the needed information to the district office that is handling this task. As a result, the civil servant processing this task can confirm the identity and related information of the service applicant and provide the service as requested by the applicant.

The graphic below provides an overview of each system.

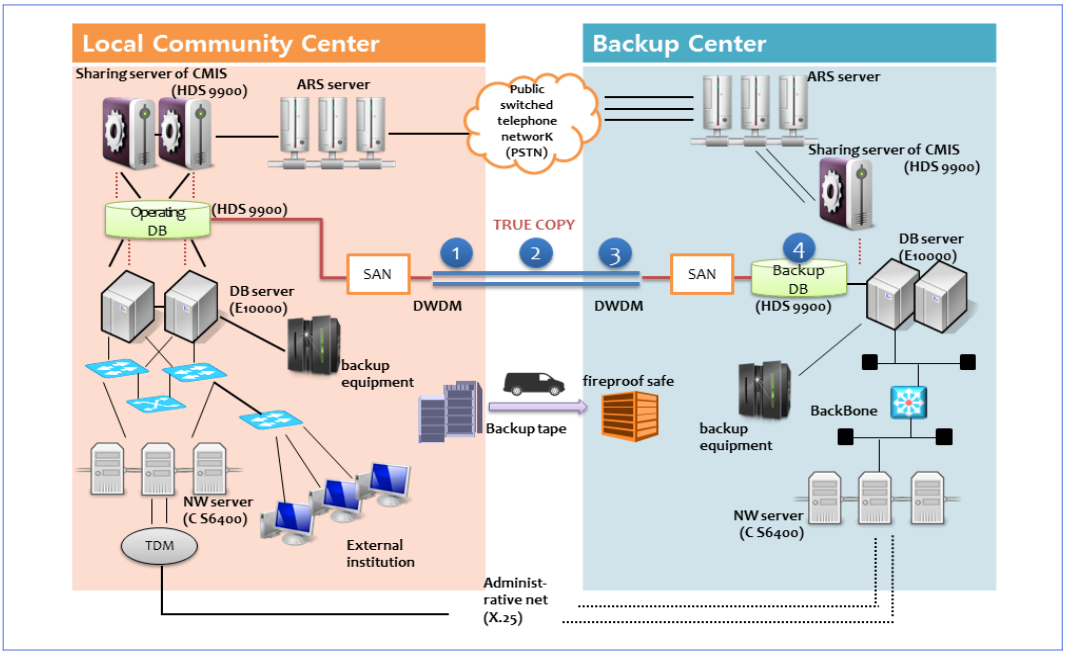
The most unique security feature of Korea's CMIS is that a separate backup center and system have been established and are being maintained. This is important for making RR and e-government services available during natural disasters. This feature is also important because the loss of important RR data can be prevented.

Figure III-17 | Overview of CMIS and Related System



Source: Kwon, H.Y., Ko, Y.S., 2016 (unpublished manuscript)

Figure III-18 | Backup Center of RR DB



Source: Kwon, H.Y., Ko, Y.S., 2016 (unpublished manuscript)

3.5. The Case of Korea Related to the Linkage and Utilization of CRVS

3.5.1. National Tax Integration System (NTIS) and Home Tax System (HTS)

1) Significance

Korea faces uncertainty in terms of tax revenue due to changes in society wrought by the very low birth rate, the aging of society, and other factors. In order to ensure adequate revenue for government programs and fiscal outlays, Korea has taken a number of steps to improve its national tax administration (Park Y.H., 2016).

The National Tax Integration System was established in Korea in 1997. During the initial stage of implementation of the system, the primary focus was on its quantitative expansion (Korea Development Institute, 2013). In addition to the complexity of the system itself, the antiquation of the system and deterioration in the government's fiscal condition were cited as problems. This led to increased demand for services (Korea Development Institute, 2013). A 'fair society' and 'justice in taxation' have in recent years become significant issues in Korea, and discussions were held on devising an effective system to resolve various chronic issues in taxation administration (Park M.H., 2016). The National Tax Service introduced the Home Tax Service in 2002 and the National Taxation Information System (NTIS) in 2015. These systems enabled the National Tax Service to further develop the taxation service and better protect the rights of taxpayers through the interfacing of highly advanced telecommunications technology, Korea's strong suit, with the civil resident registration system.

2) The use of CRVS by the National Tax Service

The National Tax Service collects and manages the name and the resident registration number as important data, and manages data on individual businesses and corporations, for the purpose of identifying those liable for taxation (Choi Y.H., 2015). Under the NTIS system, overall data on national taxation administration affairs involves collecting taxes by various unique identification numbers such as the resident registration number, the corporate registration number, and the foreigner registration number, and taxpayers are managed based on the taxpayer identification number. Since each system defines and manages models on taxpayer information for each individual, data on taxpayers are repeatedly represented in the unit business system. Accordingly, when changing information on taxpayers as a matter of course through revision of tax laws and the like, each system individually makes changes. The business system on internal business or business regarding people periodically updates

data on taxpayers' information through the NTIS in order to prevent overlap in taxpayer information (National Tax Service, 2013).

The general database on income of the National Tax Service holds important data for identifying the recipients of various social welfare services. Names and the RRN become the basis for the data (Choi Y.H., et al, 2015). The National Tax Service generates data on household income and assets, individual welfare pensions and service pensions by interfacing with local governments. This ensures accuracy in designating recipients of the welfare service and prevents overlap in services, while also playing a crucial role in preventing welfare fraud (Choi Y.H. et al., 2015).

3) Major Tasks and Functions

a) National Tax Integration System (NTIS)

The National Tax Integration System (NTIS) is an extensive information system building project through which some 22,300 programs were developed and 180 billion sets of data were created over a period of five years and six months, from January 2010 to June 2015, at a cost of over KRW 200 billion (Press release, National Tax Service, 2016). Expertise on electronic taxation accumulated over the past two decades and highly advanced IT technology were applied to consolidate several systems that had been dispersed into a single extremely efficient next-generation system (Press release, National Tax Service, 2016). The NTIS has two portals: one for taxation affairs used for internal tasks and the Home Tax portal used for taxation affairs by the internet.

Through the NTIS system, diverse, accurate, analytical data are generated, and guidelines are provided in advance regarding matters on which the taxpayer is likely to make mistakes. Past records of tax payments are summarized to enable the user to see helpful information at a glance. The system has thus encouraged the public to voluntarily and honestly report their taxes (Press release, National Tax Service, 2016). Also, based on the advanced technology, IT services including 'Pre-filled and Full-filled' services are provided, effectively helping to minimize costs to taxpayers in preparing their tax returns (Press release, National Tax Service, 2016).

b) Home Tax Service

The informatization of the taxation administration became systematized in full swing following the introduction of the National Tax Integration System in January 1997. The Home Tax System of the National Tax Service was introduced in April 2002, and it made service

much more convenient for taxpayers. Taxpayers using the system no longer had to visit the tax office but could handle tax matters through the website ((www.hometax.go.kr) whether at home or at the workplace. The service afforded greater accessibility and convenience to the citizens with regard to tax payment and at the same time effectively reduced administrative expenses (Yoon B.S., Woo S.D., 2007). Under the Home Tax Service, taxpayers receive electronic notices, and taxpayers who file tax returns are able to inquire into basic information needed for making tax payment. Also, taxes can be paid merely by entering the bank name and account number of the taxpayer, and the result is automatically notified to the Bank of Korea, major government ministries, and the taxpayer (Yoon B.S., Woo S.D., 2007).

Through the Home Tax Service, the past records of taxpayers can be checked easily, and since basic information on taxes to be paid is automatically linked to details of electronic billing and electronic filing of returns, errors in making entries can be prevented (Yoon B.S., Woo S.D., 2007). Electronic filing of tax returns refers to reporting of various taxes through the internet. Ten types of taxes can be filed electronically in Korea including the corporate tax, composite income tax, value-added tax, withholding tax, special consumption tax, liquor tax, securities transaction tax, stamp tax, education tax, and special rural development tax. Taxpayers no longer have to fill out all the data when using the system and can obtain more accurate information than when visiting the tax office (Yoon B.S., Woo S.D., 2007)

4) Implications of the System

Following the process of political democratization, Korea has steadily endeavored to rationalize policy for improving taxation administration. The establishment of the Korea Tax Institute in 1992 helped expand professional research capacity in the field of taxation, and this was followed by the development of ICT technology and implementation of systems for effective taxation administration including the National Tax Integration System and the Home Tax Service (Korea Development Institute, 2010). Through the recent establishment of the NTIS, individual services that were provided through 33 individual computerized systems were integrated into one, and the system was made flexible and efficient through the standardization of the development method of the program. For effective response to system problems following the establishment of the system, the National Tax Service organized the 'Next-generation System Stabilization Planning Group'. The Group minimized the confusion that arose immediately following the establishment of the system in cooperation with the dedicated staff. Thanks to the ongoing efforts in managing and improving the NTIS, 87.9% of Home Tax Service users responded that they were satisfied with the quality of the service and considered the service important for preparing tax returns (Korea Institute of Public Finance, 2016).

A systematic foundation was established for providing taxpayers with diverse information on taxation by improving the connectivity of the dispersed systems through the NTIS. This rendered the analytical data more precise, which in turn allowed for provision of customized services to each individual taxpayer and, furthermore, greater reliability, efficiency, and sustainability in taxation administration.

3.5.2. On-line Birth Registration: Establishment of the Universal Birth Registration

1) The concept of Universal Birth Registration

Universal Birth Registration is now being discussed in the international community. It is an important agenda of sustainable development. Universal Birth Registration is an institutionalized system under which all children are registered at birth and issued with a certificate by a public organization regardless of the qualification of stay in the nation where the child was born or the status of the parents. The system reports a child's birth, and the birth is officially recognized by the government. It guarantees that 'all children' are registered at birth without one child being omitted. Many countries including the US, the United Kingdom, and France have adopted the Universal Birth Registration system.

Universal Birth Registration is the most fundamental right of a child. The status of a child is officially established by the government, and the child's identity is recognized. It also bears significance as a minimal safety net to counter various risks such as child abuse, illegal adoption, human trafficking as well as the risk of being excluded from basic social benefits including education and medical care. Children of parents who have uncertain nationality such as refugees, stateless people, unregistered visitors, and displaced persons; single mothers; or children of low-income families tend to have difficulty becoming registered at birth. The Universal Birth Registration System is important in that it becomes the means to extend the protection of the social security system of the state to such children.[13)]

2) Efforts to Improve Birth Registration System in Korea

The persons with primary obligation to report birth in Korea are the parents. If the parents do not report a birth, there is no way to verify whether the child exists. The Convention on the Rights of the Child (CRC) declared that "the child shall be registered immediately after

13) UNHCR Summary Report on Birth Registration: Child Protection Unit, Division of International Protection, August 2013

birth and shall have the right from birth to acquire a name and nationality." Article 3 of the Convention sets forth that the parties concerned must uphold the best interests of the child, and Article 4 stipulates that the states must undertake all appropriate, administrative, legislative, and other measures for the implementation of the rights recognized in the present Convention. Since Korea has ratified the Convention on the Rights of the Child, it has the same effect as Korean law in accordance with Article 6, Paragraph 2 of the Constitution of the Republic of Korea. However, Universal Birth Registration is still not done in Korea, despite the fact that most of the citizens are registered at birth and statistics on death reports are compiled by means of extremely efficient civil registration system and the family relations registration system, and the electronic government have effectively increased the welfare of the public. Implementation of the Convention on reporting all births is not legally binding. The UN Committee on the Rights of the Child urged in 2012 that Korea "take measures to enable birth registration of all children regardless of the legal status of the parents."

Korea is, thus, moving to improve the system. It is revising the ordinance in 2016 and devising a system on birth registration. On May 20, 2016, the revision bill on Registration, etc. of Family Relations (Family Relations Registration Act) was passed. In the past, parents who did not register a birth within 30 days (one month) of birth without any justifiable reason only had to pay a fine of KRW 50,000, but this was not enough to increase the rate of birth reporting. Under the revised law, in the event the parents, who have the obligation to report a birth, fail to file the report within 30 days, the prosecutor or the head of the local government may make the birth report on behalf of the child. This is meaningful in that the government has provided the institutional backup for reporting the birth of a child who was not registered by parents and who would otherwise be not covered by the welfare system.

In February 2017, the Supreme Court announced "major details on the policies and system of the judicial branch in 2017". Among many goals mentioned by the Supreme Court with regard to the improvement of the system was the establishment of an online birth registration system. In the past, birth registration was done by visiting the family relations registration office and filling out the documentation. In the future, online birth registration will be possible at home by accessing the electronic family relations registration system of the Supreme Court by interfacing with the hospital, government organization, and the electronic family relations registration system of the Supreme Court.

In August of 2016, the Cabinet Council of the government finalized funding of some KRW 99.3 billion for the establishment of the online birth registration system. Part of this funding will go towards the Supreme Court's computerized system for family relations registration, and the Supreme Court is currently in discussion with relevant organizations including the Ministry of the Interior and Health Insurance Review & Assessment Service for sharing of data

and system connectivity. It seeks to have the system up and running in the second half of 2017, and the Korean government hopes that the system will indeed enhance convenience for parents and reduce costs.

3) Agenda for implementing the Universal Birth Registration system in Korea

Despite efforts by the government to improve the birth registration system, it still has a long way to go before it can offer the value and means of a truly effective Universal Birth Registration system as promoted by the international community.

Even as there is positive evaluation and expectation regarding the revision of the Family Relations Registration Act, there are still limitations in protecting the fundamental rights of all children in Korea. It has been pointed out that by the time the government becomes aware of the fact that a child's birth registration has been omitted, the child would already have faced various risks, and the system has been criticized in that it would only amount to ex post facto measures even following the revision of the law.

Also, as regards the internet birth registration system, which the government plans to implement in full swing this year, the main organizers of the system—the Ministry of the Interior and the Supreme Court—are merely engaged in discussions on the establishment of the system. They have not yet had any discussions on the ordinance, and for this reason, objections are expected from the medical community including obstetricians.

According to the birth statistics of 2015, 99.2% of newborns in Korea are born in hospitals (Statistics Korea, 2016), which implies that establishing the birth registration system at medical institutions would be extremely conducive toward realizing Universal Birth Registration. To this end, 16 civic organizations for immigrants and children's human rights such as Save the Children and the Korean Committee for UNICEF launched a campaign on Universal Birth Registration. They are calling for revision in measures to expand the obligation for birth registration not only to include parents but also the medical institutions and medical attendants. The health and medical as well as human rights experts call for a system where birth can be notified through the medical institution in order to provide proper medical services and guarantee the human rights of children.

The association of medical doctors, however, raises serious concern over the institutionalization of the Universal Birth Registration. The medical community vehemently claims that Universal Birth Registration is the responsibility of the parents, and making the medical doctors

responsible for the act would give rise to serious problems such as a considerable administrative burden and parents' avoidance of maternity hospitals. Furthermore, single mothers who do not want to go through birth registration would attempt to give birth in places other than medical facilities, which would ultimately put many mothers and children in harm's way. It remains to be seen whether an institutional backup can be established for Universal Birth Registration by means of Korea's highly advanced technology and civil registration system.

3.6. Crisis management, countermeasures, and resolution measures of the Korea's CRVS System

The CRVS system serves many different purposes including administrative processing of birth and death reporting, family relations registration, civil registration, and issuance of the resident registration card. Its functioning required institutionalization of a legal framework and establishment of a high-tech system for informatization. Like all such complex systems, there are risks at each stage of administrative processing as well as conflicts among the parties concerned. Since the CRVS involves gathering, collecting, and using sensitive information of citizens on matters such as birth, marriage, and relocation of domicile, there have always been concerns over the possibility of leakage and abuse of personal information. On-going discussion and continual decision-making are required on the contentious issues such the development of alternative means of identification, the mandatory carrying of the RR card, and protection of biometric information entered on the RR card.

3.6.1. Infringement of personal information

Korea's Resident Registration Card was changed in the form of PVC in 1999. The number of items of personal data entered on the RR Card has been reduced since it was first issued, but it still includes the name, resident registration number, address and status of change in address, place of issuance, and biometric data including photo, fingerprint, and blood type (optional) (Table III-30).

There are concerns over forgery, falsification, and leakage of the RRN in the resident registration cards. Needless to say, they contain sensitive personal data. RRNs have been commonly used for identification for both public and commercial purposes online and offline. Since it is extremely easy to collect and use the RRN, leakage of personal information through the loss of RR card, leakage of the RRN, or internet hacking constitute significant infringements of privacy and pose a great risk of financial fraud or crime both at home and abroad. A total of 166,6000 privacy violation complaints were received in 2012, of which 139,000 involved

the falsification and abuse of RRNs and other forms of ID. Of these cases of identity theft, 3,855 were attributed to the absence or inadequacy of technical privacy protection measures, and 3,507 involved nonconsensual collection and use of personal data (Korea Internet & Security Agency, 2013).

Table Ⅲ-30 | Entries on RR Card

Category	First issuance	1st revision	2nd revision	3rd revision
year	1968	1975	1983	1999
Information on front side	Name photo RRN (12 digits) Date of birth Permanent domicile Address Military record Military specialty Date of issuance Authority of Issuance Warning against failure to carry Lost-and-found guide	name photo RRN (13 digits) Date of birth Permanent domicile Address Military record Military specialty number Date of issuance Authority of issuance Warning against failure to carry Lost-and-found guide	name photo RRN (13 digits) Permanent domicile address military record date of issuance authority of issuance name of the household head	Name (including Chinese characters) photo RRN (13 digits) address date of issuance authority of issuance
Information on back side	Change in address occupation fingerprints (both thumbs)	Change in address occupation fingerprints (both thumbs)	Changes in details Military specialty number Fingerprint (one thumb) Lost-and-found guide	Changes in details Fingerprint (one thumb) Lost-and-found guide

The government introduced the internet-based resident registration authentication service in 2007 and pushed ahead with changing the RR card to make it difficult to alter or forge and to embed an IC chip into it. Smart card types with electronic chips were presented as an alternative to the existing RR card for prevention of forgery or alteration (Song H. J., 2010). Plans to introduce the electronic ID card were proposed in the late 1990s, 2006, and 2010. but all were thwarted as a result of opposition from civic groups and public opinion out of concern that the cards would lead to the abuse of personal data, infringement of privacy, and government monopoly of information. It remains a contentious issue today.

Meanwhile, the government sought to improve the system prohibiting the collection or minimizing the use of the RRN on the internet. The Personal Information Protection Act enacted in 2011 provided the grounds for handling sensitive information and handling unique identification information, and set forth regulation completely prohibiting the collection of the RRN in the public and private sectors. Following the enactment of the Personal Information Protection Act and Act on Promotion of Information and Communications Network Utilization and Information Protection, etc., the collection of the RRN was prohibited in 2012. The RRN could only be used under certain very restricted circumstances and only by the administrative

organization, and in the event there are no grounds in the ordinance, the grounds had to be provided. Other means of identification such as an i-PIN, mobile phone, authentication certificate, or date of birth were to be used. Gathering of the RRN on the internet became strictly prohibited unless otherwise prescribed by other ordinances.

Table Ⅲ-31 | Comparison of Alternatives to Confirmation of Identification

Category	I-PIN	Mobile Phone	Authentication certificate
Number of subscribers	About 15 million	About 54 million	About 6 million
Authentication method	IP + password	Birth date, name, mobile phone number	Password
Identification confirmation agency	Credit ratings agency	Mobile telecommunications company	Authentication certificate agency
targets	Subscribers to i-IN ID	Cell phone owners using their name	(commonly used) issuance of authentication certificate

Leakage of personal information is becoming more and more common and now exceeds 100 million cases each year at banks, insurance companies, and securities companies. In response, the government in July 2015 revised the Personal Information Protection Act to require encryption of all RRN by all organizations and businesses handling RRN. With the ruling from the Constitutional Court of Korea that enabled changes in the RRN in exceptional cases such as damage from leakage of the RRN (December 2015), it became possible to change the RRN as of May 30, 2017 in the event of actual damage or high risk of damage from the leakage of personal information.

Thanks to the digitalization of administrative information and sharing of administrative information among government organizations, the Korean government owns a huge volume of personal information files that have become digitalized, and the RRN plays the key role in their management. The digitalization of CRVS, in particular, enables prompt and convenient offering of customized services for major life events including one's birth, marriage, and death. Use of the resident registration information as a means of identifying a person is essential for diverse administrative needs. The government continues to formulate improvement measures to deal with problems and side effects while minimizing social costs regarding the issues of protection of personal information and maintaining privacy.

3.6.2. Data Management in the Stage of Digitalization

Numerous problems arose in the initial stage of computerization of the system in the early 1990s during the process of digitalization of data. First of all, since the organizations individually kept the computerized data without the nationwide network available, both the hardcopies and electronic data had to be used at the same time. For example, when a civil petitioner moved out from a domicile after filing the move-out report and moved to a new address after filing the move-in report, documents were submitted to the eup/myeon/dong district office, which were digitally entered by the organization and transmitted in a batch file. The original register of civil registration drawn up in hardcopy format had to be sent by mail. Since there was a huge number of registers that had to be sent, organizations signed an agreement with the post office. However, original registers often became lost en route, and loss would elicit a request for investigation. Sometimes, the registers became lost by mistake, but in some cases, they were lost intentionally or stolen for purposes of identity theft. When the move-in report was filed, the head of the neighbourhood association visited the house, verified the residential status, and notified the district office of the move-in.

Since the original registers held the past residential records, they had great value as data. Now that the information network is complete, civil registration affairs are handled without the original paper register, but the paper register is still kept by the government. Digitalizing the original register of course involved typographical errors. Many names could be written in either of two acceptable ways (e.g. Ryu or Yu), and they were often entered erroneously with the result that the same person effectively had two identities. Sometimes, the Chinese characters were entered erroneously. In order to prevent these problems, there is now a process for comparing the system with the original register twice a year. When errors are discovered, the name is compared with that on the original paper register and corrections are made as necessary.

In the case of the resident registration number, there was the problem of exposure of identification. For North Korean defectors, the regional code was exposed in the last seven digits of the RRN, and they faced disadvantages as a result. At the initial stage, North Korean defectors were given the RRN with the address of Hanawon, the settlement support center for North Korean defectors. Regional codes were originally confidential information, but the regional code for Hanawon eventually became widely known, and the RRN was used to identify North Korean defectors in China. This caused difficulties for North Korean defectors going to China. Also, some citizens of the Republic of Korea who were given RRN in the Hanawon area were mistakenly identified as North Korean defectors when going to China. In order to resolve these problems, North Korean defectors were given civil registrations with codes for areas other than Hanawon.

3.6.3. Conflict regarding the system and resistance towards change

Korea's CRVS has evolved over a long period of time and has undergone a great deal of change in performance practices and procedures. Those administrative procedures that had been handled manually were digitalized, and many documents are now issued online. Innovation in the work process was a major challenge because of great change. When the CRVS system was digitalized and established on the internet, the city, county, and district offices as well as the eup/myeon/dong community centers could no longer receive the commission fees for the issuance of paper certificates for civil registration and family registers, and this naturally elicited strong objections from officials all over the country. At the time, small fees were collected for issuance of paper certificates for family relations registration and civil registration, but these government offices no longer have that income stream. Furthermore, with the more recent introduction of new information technology including mobile devices, cloud computing, and big data analysis, there is a need for even more drastic adjustment and innovation in system practices and procedures. There could very well be more resistance, which points to the need to consider a new type of incentive that can replace the existing incentive as well as steady persuasion and publicity regarding institutional changes.

Another major obstacle is the possibility of conflict or lack of cooperation among the government ministries or the interested parties during the evolution process. CRVS affairs involve collection of information on major life events such as birth, death, and marriage, which is linked, managed, and utilized, and this information is inevitably connected with most of the government ministries in the fields of health, welfare, employment, national defense, elections, public security, industry, taxation, and education.

The building of a system based on close cooperation among the regional governments and the central government is also essential. If the CRVS system is administered as a business process focusing on government ministries without being integrated or connected both microscopically and macroscopically, the 'islands of automation' will become a segmented system. This would create discontinuity and inconsistency in administration, which would in turn bring about inconvenience and inefficiency for the public. The biggest obstacles to cooperation and information sharing among the government ministries using the administrative information sharing system in Korea are the leakage of private information and the difficulty in determining what parties are responsible for such leakage (Song, H. J. et al, 2016). In order to resolve this issue, effective technological measures for information security and protection of personal information should be devised, in addition to diverse measures promoting reliability among the ministries from an organizational perspective.

4. Key success factors[14)]

4.1. Strong leadership on the establishment of electronic government, computerization, and sharing of administrative information, and realistic support

Various factors have contributed to the success of Korea's CRVS system, including strong leadership, adequate funding, development and reinforcement of human resources, and establishment of strong cooperation between the private sector and the government.

The beginning and initial development of Korea's CRVS system were based on strong leadership and political determination. The enactment of the Resident Registration Act, the establishment and computerization of a database on civil registration, online service (Minwon24), the administrative information sharing system and National Computing and Information Agency (NCIS) were the result of strong determination and execution of the leadership. The advisory committee was established under the auspices of the President of Korea, and necessary funding was provided. Such leadership was not expressed merely by political determination: specific comprehensive plans were established for the execution of the political declaration, which was followed by practical support such as sincere implementation of the plan and input of all resources necessary for the plan.

Backed by the electronic government system and rapidly improving internet accessibility, Korea's CRVS system went through the following processes: 1) batch processing through computerization of administrative internal unit business (1978-1986); 2) automation and remote processing of government tasks through the establishment of key government databases including those for family relations registration, civil registration, and vital statistics as well as the establishment of the five national infrastructure networks (1987-1996); and establishment of a nationwide ultra high-speed civil telecommunications network (1995~2014); 3) establishment of civil application innovation service (G4C), which eliminated the need for hardcopy documents and minimized the number of visits to government agencies (2001-2002), implementation of 31 projects including digitalization of the entire procedures of document processing and administrative information sharing; and 4) the upgrading of the electronic information system that brought about integration of the information system from 2008 to the present (Song, H. J. et.al, 2016).

14) Reference was made to the report by Song, H.J. et al. (2016) regarding the success factors of Korea's CRVS system. Some of the newly emerged success factors were added in this study.

4.2. Cooperation and interfacing of human resources between the private sector and government organizations

In order to bring about steady development and appropriate reforms in the government system, outstanding human resources for the system must be supported. In fact, these human resources account for only about 10% of all civil servants in Korea, a considerably lower percentage than the 20% in the OECD nations overall. The number of staff working in the statistics division (1,554 persons, 1.6%), those working in the computer division (2,883 persons, 3.0%), and those working in the telecommunications division (474 persons, 0.5%) are very low (refer to Table III-32). In addition, to secure human resources for the planning and operation of the system, there is a need for on-going training of the front-line staff.

There were too few people actually involved in planning and operating the system, but the lack of personnel was resolved through the use of personnel from government agencies. Notably, human resources from public organizations including the National Information Agency, the Korea Internet & Security Agency, and the Korea Local Information Research & Development Institute provided critical support. As regards the professional computer experts overseeing the key planning tasks, the professionals employed by system integration companies in the private sector played a crucial role. There are projects that significantly affect the efficiency in public services and public administration; projects that require special management because of a high level of complexity; and other cases where the heads of administrative agencies, etc. deem it necessary to entrust the management of electronic government to the system integration companies for the development and operation of the information system (Article 64-2, Electronic Government Act).

Table Ⅲ-32 | Civil Servants in Telecommunications and statistics Division of the Ministry of the Interior

Category	State Public Officials					Education	Public Security	Postal Service	Total
	Statistics	Computer	Communications	General Administration	Subtotal				
Government officials	1,554	2,883	474	89,684	94,595	347,281	148,828	31,404	622,108
Local government officials	n.a.	n.a.	n.a.	n.a.	295,344	68,060	None	none	363,404

* 'n.a.' means that the data is not available, 'none' means that are no local government officials in public security and postal service divisions

source: Ministry of the Interior, 2015; Ministry of Personnel Management, 2015; Song, H. J. et al, 2016

4.3. Flexible financial assistance

The government budget is generally executed according to a rigid one-year schedule by the Budget Deliberation Committee of the National Assembly and the accounting audit system of the Board of Audit and Inspection. This arrangement poses the major obstacle to implementing a new system, and funding for Korea's CRVS system was only rendered under the most exceptional circumstances. The major success factors were the multiyear orientation of budget funding for major projects, government-wide accomplishment, financial/non-financial expense/benefits, innovation in current business flow, and the budget system's focus on innovation and change rather than emphasizing the one-year business unit accomplishment as in the general budget system reflecting the flow or current business and emphasizing the perspective of flow. Such innovative implementation was made possible by the determination of the political leadership.

Developing countries in difficult fiscal circumstances need to consider using flexible measures of fiscal management such as the telecommunications fund, based on Korea's experience. If not, a project such as digitalization of the civil registration system could not be implemented as it would be crowded out by other government spending priorities. Meanwhile, in the event a flexible system such as fiscal management through the telecommunications fund is difficult to realize due to a lack of funding, official assistance funds or funds from international organizations could be used and managed under a cooperative system. In this case, public-private partnership (PPP) in the form of BOO (Build-Own-Operate) and BOT (Build-Operate-Transfer) could be considered.

4.4. Establishment of organic cooperative system among the relevant organizations

Since the CRVS system requires cooperation across many organizations, cooperation and information sharing with relevant agencies are the key success factors. Taking a look back on Korea's history of CRVS development, such cooperation and efforts have indeed played a crucial role. One example was the co-existence of online data processing and paper-based document processing when the manually processed offline system was transformed into a computer-based digital system. Organic and close collaboration among the organizations handling online tasks and offline tasks was the key factor for building the electronic civil registration system. For example, safe delivery by the postal system was needed in order to transfer the civil registration documents nationwide. The information processed digitally originated from data entered on paper documents. If the original copy of a civil registration could not be moved safely nationwide, the authenticity of the information held by the electronic resident registration system could not be confirmed and the viability of digitalization of the civil registration system could not be guaranteed. The need for secure postal delivery could hardly be understated at a time when citizens frequently relocated to find work during Korea's rapid industrialization.

The role of the judicial system is also important, specifically to swiftly and effectively deal with loss or theft of the Resident Registration Card or relevant hardcopy documents. Loss or theft could easily lead to identity theft, which itself is a serious societal issue. Efforts should be made to prevent loss and theft, and this would require organic cooperation among the agencies handling civil registration affairs, the postal service, law enforcement, and the judiciary. This would allow quick investigation by law enforcement and the judiciary, which would in turn maintain the reliability of data and information on civil registration. In the event that the authorities do not act promptly in the event of loss or theft of paper documentation sent by postal delivery, the public will lose confidence in identity instruments and their confidence may be difficult to restore.

5. Cost-benefit analysis of CRVS

5.1. Cost-benefit assessment method of the information system

5.1.1. Overview of analysis of economic feasibility of the information system

The study into the cost-benefit of the information system project was launched in full swing

in the late 1990s. It was done to assess the system's economic feasibility prior to the implementation of the new project. The study focused on details of the project involving the establishment of diverse systems, managing operational accomplishment, and securing efficiency. The analysis of the effect of building a large-scale informatization system must necessarily be done over a long period of time due to the varying amounts of funding and varying periods of effectiveness. Reflection of time flow is thus important. The life cycle of the information system is flexibly applied over five to ten years. Sensitivity analysis is done simultaneously based on the magnitude of benefits or expenses, life span of the project, and the discount rate. In general, the social discount rate stands at 5.5% and the life span is five to ten years. The Net Present Value (NPV) and Benefit Cost Ratio (BCR) are used[15].

Table Ⅲ-33 | Benefit-Cost Ratio and Net Present Value

Category	Details
Benefit-Cost Ratio (BCR)	• The BCR is the discounted ratio of benefit and cost. The cost and benefit to be generated in the future is calculated in present value, and the present value of the benefit is divided by the present value of cost. • In general, a project is deemed economically feasible if the BCR is greater than 1. • Since the BCR does not represent the total benefit but only deals with the cost to benefit ratio, it is advised to adopt the project with the highest profitability. • The absolute net benefit is relatively bigger but has lower social ripple effects than a project with a low BCR, and there is a higher possibility of adopting a project with a greater BCR.
Net Present Value (NPV)	• The NPV is the value of discounting all costs and benefits of the project to the present value of the base year and deducting the expenses from the benefits. It is the difference between benefits and costs that is calculated in the present value. If the NPV is greater than 0, the project is deemed economically feasible. • Projects with a positive NPV will be profitable even after retrieving capital expenditures under the applied discount rate. The greater the NPV, the more profitable the project. • Since the feasibility of a project is determined by the absolute net benefit of public investment project, it is not appropriate for sorting maximization of cost to b

Source: Korea Open CourseWare (www.kocw.net), Lecture on analysis of economical feasibility

The expenses of the informatization system include R&D expenses. These include consulting fees for the formulation of ISP/BPR; initial investment, which includes asset acquisition fees, reserve fund, personnel expenses, commodities expenses, and travel expenses; as well as operational and maintenance expenses, which include consignment business expenses, installation equipment maintenance expenses, and facilities expenses.

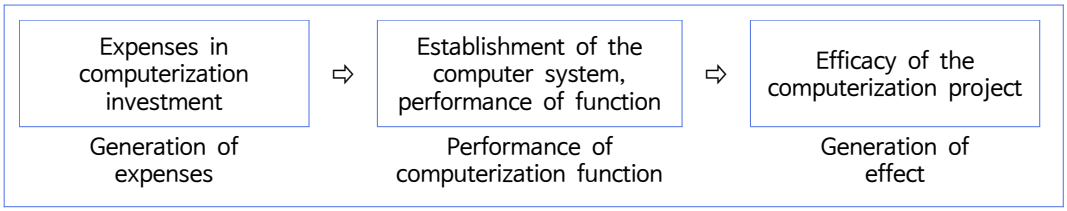
15) Methods of economical feasibility analysis include Benefit Cost Analysis, Net Present Value, and internal revenue. In general, economical feasibility analysis on investment into the public sector is based on BCR and NPV.

According to guidelines on feasibility study of the informatization sector, increased productivity prompted by informatization is regarded as a major benefit: the direct benefits are the reductions in task processing hours, personnel expenses, use of paper, mailing expenses, information expenses, and financial expenses, and the reduction in time in task handling. The secondary benefit is the benefit of introducing the major information system (2004). The benefit of the informatization system is used in analysis of economical feasibility with focus on the direct benefits and tangible benefits. Direct benefits are the benefits anticipated by the objective of the project and are realized in a short span of time. Examples of direct benefits are efficiency gains in internal affairs, personnel reduction or controlled personnel increase, and saving of clients' time.

5.1.2. Evaluation method of the initial computerization project

In addition to the cost benefit model of the information system in the developed form, the National Computerization Agency (presently the National Information Society Agency) has presented as following the simplified evaluation model of the computerization project.

Figure Ⅲ-19 | Relationship of Investment Expenses, Functionality, and Efficacy of the Computerization Project



Source: National Computerization Agency, 1995

Based on the seven principles (Newcomer & Craudle, 1992) of assessment of the information system in the public sector, the basic principle for assessment of the computerization project will be summarized as follows:

First, in order to conduct evaluation on the computerization project, the level of achievement of performance versus the plan is assessed. Evaluation on the achievement level of the goal and contribution level regarding the administrative network project will be made a priority. Second, for the objective and intention of computerization including enhanced services for the public, provision/utilization of data necessary in policy-making must be reflected in the evaluation. It must be emphasized that the non-profit nature of the government organizations must be fully reflected in the cost-benefit analysis. Third, there is the need to analyze the effect of the National Information Infrastructure that is promoted over a long period of time. Continuous evaluation is needed with the flow of time that is not one-time evaluation.

5.2. Cost-benefit assessment of CRVS

5.2.1. Cost estimation

Estimation of cost of CRVS building is a daunting task. It involves not only long term investments with various kinds and types of projects, but also indirect investment such as national internet networks, as well as direct investments. But the results of the analysis are not always meaningful to the recipient countries that will make investment in the future, because the past technology cannot be compared to the present and future ones. In this paper, we will provide a rough estimation of the investment and operation cost on CRVS particularly on electronic government.

CRVS investment has been made continuously from 1990, but full-scale investment was made after the 2000s. From 2000 to 2007, average of KRW 200 billion was invested and in 2007, more than KRW 300 billion was invested. The investment includes such projects as automation of document processing, expansion of public information sharing, national welfare service, government-wide integrated data processing and information protections systems.

5.2.2. Outcomes of studies on benefit assessment of CRVS

The CRVS building and computerization project in Korea was launched in the 1980s and continued after 2000. It is meaningless to compare the amount spent at the time given the rapid development that has occurred. A total of KRW 357.1 billion was spent in the first stage of the administrative network project including KRW 31 billion for software development, KRW 198 billion for hardware development, KRKW 21 billion for telecommunications, and KRW 106.9 billion in operational expenses. Even if the total spending is converted into net present value (as a result of technological development), the technology back then cannot be compared with that of the present. At this point in time, it would be possible to introduce a digitalization system with better features and at lower cost, and the meaning of BCR becomes insignificant.

Rather than calculating the direct cost-benefit value, the outcome of the studies on CRVS benefits will be shared here.

A total of KRW 380 billion was spent over the decade from 1993 to 2002 on the digitalization of the family register and family relations registration systems. An average of 1,390 persons were working on this government computerization project in any given month, which had the effect of saving KRW 300 billion annually (based on 2002) (Press release, the Supreme Court, October 2002).

In the G4C administration informatization project, a total of KRW 16.82 billion was spent from October 2000 to November 2002 including KRW 990 million for BPR/ISP and KRW 15.93 billion for building the information system. According to the study conducted by the Ministry of the Interior in 2005, the establishment of the G4C project reduced overall costs by KRW 1.26 trillion through the sharing of administrative information, reduction in documents required, and reduction in civil registration affairs (Korea Information Society Development Institute, December 2008).

The second project on the enhancement of the administrative information sharing project is assessed to have brought about KRW 66.3 billion in savings in civil application processing by the administrative, public, and financial institutions and KRW 172.7 billion in savings in general affairs processing. The reduction in documents required and transportation is believed to have reduced carbon emissions (tCO2) by 141 thousand tons (Kim T.J., et al, 2011).

The Supreme Court's electronic processing of CRVS is estimated to create more than KRW 230 billion worth of benefits annually, these benefits including effect of internet issuance, providing statistical data, internet reporting and effect of linking the judicial affairs system with the resident registration system.

5.2.3. Consideration in cost-benefit assessment

1) Common components for expense assessment of the system

The expenses in the system can be categorized into expenses for the introduction of the information system in the public sector (system building and purchase of equipment), maintenance, and operational expenses. Expenses for introducing the information system include the expenditure for system development, which comprises service expenses for formulating the Information Strategy Plan (ISP), SW development, DB building, and building of the system operational environment, as well as expenses of supervision of the information system and for asset acquisition of system-related commercial SW and HW. Maintenance and operational expenses include maintenance for the facility equipment, management service for the outsourcing staff and other consignment business expenses, personnel expenses for internal operation, expenses for replacement of HW and SAW, electricity usage charges, and network circuit usage charges (operational expenses may be a certain portion such as 15% of the SW development expense and 8% of the HW and commercial SW). Taking into consideration the fact that this was a large-scale project, a certain amount of reserve expenses and personnel expenses for computerization (1.4 ratio or required personnel and indirect expense overhead, etc.) was also set aside. On-going maintenance of the information system, HW, and SW is needed following their development, and operational expenses need to be

secured in the government ministry budget for the duration of the relevant project. Expenses for training civil servants administering the system also need to be taken into full consideration.

2) Formula for benefit assessment (example)

Table Ⅲ-34 | Example of Benefit Assessment Formula

Category		Details
Effect of internal affairs processing	Effect of improved performance of civil servants	• annual total time saved[16] ×average hourly wage of civil servant
	Saving of task processing hours	• annual number of cases processed×reduced hours per case×average hourly wage of civil servant • system log-in hours (system log-in hours for task processing) • unit task processing hours (difference in time between work system use and time spent in manual processing • business processing volume (amount of business increased following computerization)
	Reduction in business expenses	• Reduced volume of documents (integrated network, etc.) ×reduced expenses per business • unit price of expense required in data entry and confirmation×number of tasks • reduction in monitoring expense+reduction in production and stock expense+reduction in data collection expense
Processing affairs for the citizens	Improved performance of civil servants handling civil petitions	• annul total time saved×average hourly wage of civil servant[17]
	Improved service for civil petitioners	• total hours saved annually×average hourly wage of the economically active population[18] • number of visits for civil application×reduction rate ×hourly wage and transportation expense • number of calls at the call center×reduction ratio ×hourly wage
	Reduction in expenses for certificate issuance	• reduction in opportunity cost resulting from simplification of issuance of civil petition documents
	Reduction in mailing expenses	• annual number of mails sent×mailing expenses× reduction in expenses

Source: Korea Computerization Agency, 1995; Korea Development Institute, 2004; Song H. J., Lee O.H., 2007; Public Investment Management Center, Korea Development Institute, 2011; Korea Local Information Research & Development Institute, 2008; Kim S.K., 2009

16) Annual total reduction time = (processing hour per case prior to computerization project - processing time per case following the computerization project) ×total number of cases processed annually

17) Method of calculating average wage of civil servants per hour: the average monthly wage of civil servants by grade and hourly wage is divided by grade and calculated as the average wage of a civil servant

18) Method of calculating the average hourly wage of a citizen: refers to the annual average wage per capita. GNP/economically active population is calculated by average monthly wage and average hourly wage per capita

The benefits of the CRVS system include reduction in expenses in performance of administrative affairs, greater support for administrative policies developed by the ultimate arbiter, and increased administrative service for the public. In performance of administrative affairs, the reduction in manpower is possible by the implementation of tasks with fewer people. The time spent can also be reduced as a result of reduced time in processing and service delivery, as well as reduction in the use of paper and document storage, which can lead to savings in expenses for office space. The following is the benefit formula presented in research outcome approached from the perspective of the information system building project, building of individual systems, and management of operational accomplishments.

5.3. Other benefits of CRVS system

In principle, assessment on the information system of the public sector should be made with respect to the achievement level of the goal and contribution level. Since it is a project by the government organization that pursues the public interest, the objectives and intentions of computerization and informatization should be reflected. In addition to the computerization of business, intangible benefits or indirect benefits such as increased service for the people and use of necessary information for decision-making of policies should also be taken into consideration.

Through the introduction of CRVS, accurate and expedient information on CRVS is provided to the policy-makers, which serve as the basis for policy-making and decision-making, enabling evidence-based administrative support. By formulating relevant plans in a prompt and adequate manner, accurate and speedy administrative services can be provided. Computerization of vital statistics also has the supplementary effect of preventing damage in the event data processing or provision is delayed if computerization did not take place. There is also qualitative improvement of data processing as well as enhancement in the data management standard.

The ripple effects in the industrial and economic sectors include fostering of the information industry through large-scale government spending; generation of demand in the information industry including hardware and software; and increased utilization of existing government computer resources. In this category are direct benefits such as the investment effect for each industry prompted by computerization that can be calculated through production induced economic value in the IT industry.

The ripple effects in the social and cultural sectors include increased computer literacy among the general public, higher public awareness of the informatization society, and greater confidence among the general public. Also, through dissemination and dispersion of information,

it can lead to more balanced development of regional parts of the country outside of the metropolitan areas.

6. Policy Implications

Several policy implications and lessons can be drawn from Korea's CRVS experience. First is the path dependency. Current policy can only be correctly understood from the extension of past policy. Current system is the accumulation of the past and no new system can be successful without acknowledging it. There is a need to ensure the continuity of the system so that offline system could still be used for the online system. The key success factor of Korea's case is that online CRVS system systematically implemented new information technology on top of the past and existing civil registration administration system. For those recipient countries, new online system can be more successful only when it incorporates its own past and current system along with advanced countries experience and cutting edge technology.

Secondly, the recipient country should be able to manage interest group politics. In most cases, stakeholders and interest groups of paper based old system is different from those of online system. Some organizations will be abolished and some will be newly established. Management and control the information will be administered by different organizations when online system is introduced. In doing so, it is very probable that old groups who lose the power try to resist severely. Political leaders should be able to control the interest group politics to minimize the resistance and maximize the corporation.

Third lesson is that nation-wide Internet is needed to ensure the success of CRVS online system. Online input, sharing and utilizing of information is the basic feature of online CRVS system and such functions are useless without nation-wide Internet. In Korea, nation-wide Internet was ready when the government started E-government and online CRVS projects. Thus, recipient countries should plan to have nation-wide Internet.

Government-wide E-government project is another success factor of Korean case. Korea's online CRVS was introduced as a part of large scale E-government project. Large-scale e-government project included computerization of all the paper-based documents and building DB and these activities allowed government-wide sharing of information. Online system without e-government project would result in isolated CRVS and the level of utilization of the system would be very low.

Last but not the least important lesson is training and education. Government officials of every level should have high level of computer literacy. Government officials should be able to use such IT equipment as computer in order to perform jobs needed for online CRVS system. Korean government emphasized the importance of IT related training an education and this heled a lot for the government officials to have sufficient competency for mastering online CRVS system.

Ⅳ. Policy Proposals

The following policy proposals are presented for the development of the civil registration systems in Myanmar, Indonesia, and Lao PDR based on Korea's experience in developing its civil registration system.

1. Policy proposals for Myanmar

1.1. Law and Regulation on CRVS

Korea's institutions linked with CRVS have been established on clear legal basis at each stage of development, from the enactment of the Civil Registration Act in 1961 to the Family Relationship Act and the Electronic Government Act so far. Myanmar currently has no law governing Myanmar's CRVS. As discussed before, there are only laws that are partially applicable to CRVS such as Myanmar Citizenship Law (1982) and Ward or Village Tract Administration Act (2012), and they are not systematically linked to each other. Korea has developed a dual system of the Family Registration Act and the Civil Registration Act. For Myanmar, it is suggested to establish a comprehensive legal framework to cover the entire CRVS system. Such laws and institution would designate and set forth the role of the main agency handling CRVS, the role and responsibility of each agency, the regulations on the policy implementation system, the legal basis for sharing of information among the government agencies, the regulations on information that could be shared as well as the regulations on protection of personal information. Like the case of Korea, the law should be regularly updated in line with the development of CRVS.

1.2. CRVS System management structure including organization management

As mentioned previously, Myanmar's CRVS affairs are administered by numerous organizations.

There is no organic and systematic cooperation among the organizations, and this remains the biggest challenge. In the case of Korea, due to distinct characteristics of historical backgrounds, while the governance at the upper level is divided into family relationship registration and civil registration, the work for both is integrated at the lower level to facilitate effective sharing and pooling of information. It would be advisable to establish an agency exclusively responsible for overseeing the civil registration affairs that are currently handled by different organizations. Myanmar currently has the Coordination Committee on Birth and Death[19] to promote cooperation among the government agencies with regard to CRVS. Effective cooperation could be realized when the main organization is designated to coordinate the activities of the relevant organizations. Making linkage for cooperation with the Interagency Working Group[20] established in 2006 and the Social and Vital Cluster[21] started since 2016 is also needed.

1.3. Budget and Investment Planning on System

According to WHO in 2014, it is estimated to have cost 2.2 million USD for Myanmar to introduce the civil registration and vital statistics (CRVS) system (The UNICEF 2015 also estimated the cost to be about 2 million USD). Fund procured for 2012-2013 was 46,000 USD, which means over 2 million USD was still required. Although the Myanmar government allocates part of budget to the CRVS, it is still too insufficient to establish a required system. To narrow the gap, assistance from international organizations including the World Bank would be required. Moreover, based on the experience of Korea, it is deemed essential to gain support from government leaders who set prioritize establishing civil registration and vital statistics system.

1.4. Appropriate system and technical assistance

1.4.1. Establishment of key database through centralized system

Korea has invested a considerable amount of time in consolidating the system into one while

19) The Coordination Committee on Birth and Death (CCBDR) was formed in January 2014 to strengthen and upgrade the CRVS system in accordance with global standards, and to enhance collaboration in preparing reports of vital statistics. Reformed in August 2016, the Committee hosts regular meeting with 13 ministries including the MoHS.(KSP Workshop Presentation, 2017).

20) The Interagency Working Group (IAWG) is operated by CSO, whose key development partners include UNICEF and Bloomberg. It facilitates to collaboration among the stakeholders, including the main departments and international agencies related to birth registration, and provides technical support for strengthening the CRVS, in accordance with the strategic plan of CCBDR (KSP Workshop Presentation, 2017).

21) The Social and Vital Cluster has collaborated with the key development partners such as UNICEF and Bloomberg to implement the National Strategy for the Development of Statistics (NSDS) (refer to p.30) since 2016 (KSP Workshop Presentation, 2017).

building the civil registration system. In Myanmar, the system has yet to be completely established in each government agency. One effective approach could be to build the integrated database top-down starting from the central government. To this end, the implementation structure must be clearly designated as mentioned previously and the enactment of the ordinance specifying the role and responsibility of the relevant government ministry is a prerequisite. In order to build a system where all registration affairs are interfaced, the key information must be input into the database following consultation among the involved government agencies. Individual organizations must summarize the commonly required key data related to CRVS and put it into the database.

In addition to interfacing with central government agencies, consolidation of data should also be considered at the regional level such as townships that collect data for basic civil registration. In Korea, data on civil registration is collected from the cities, counties, and districts which are horizontally linked to the central government agency. The effective operation of the system will become possible when district offices are integrated and operated.

1.4.2. Minimization of side effects in introducing the identification system through the national ID number

Korea uses the resident registration number given at birth reporting as a means of identifying individuals for many purposes in various systems. As mentioned previously, Myanmar has its national ID number given to individuals for identification at the age of 10. Myanmar should consider giving this number at birth. However, in introducing this system, privacy protections should also be discussed with reference to Korea's cases of privacy infringement resulting from leakage of the RRN and other kinds of abuses that have occurred in Korea. Taking into consideration the resistance from ethnic groups in Myanmar out of concern over excessive government control regarding the issuance of the RR card, the management system of the individual identification number should be designed in a way that can minimize the abuse of personal information.

1.4.3. Shift from paper hardcopy to online system

During the initial stage of implementing the resident registration system, Korea also used hardcopy documents. With the launching of the Administration Computerization Project (1970-1980s), computers were introduced and human resources were secured to build the administrative database for each stage. Tasks were also computerized. During the Administrative Network Project (1980-1990s), the central government and local governments were linked into one telecommunications network and information was shared for joint use.

Myanmar is currently striving to partially computerize the system by establishing an e-platform for birth records, but its effort is not interfaced with relevant government ministries and some agencies have not made as much progress as others. Computerization of civil registration affairs has, therefore, proven difficult as a result. Assistance in computers and human resources training for digitalizing civil registration in each government ministry is essential. At the same time, standardization regulations for interoperability among the systems should be put in place to ensure standardization of the system from the design stage. As seen in Korea's case, standardization is crucial for sharing of information when tasks of multiple organizations are interfaced. To this end, Korea has strived to ensure consistency in information for civil registration nationwide by developing the management system of the Resident Registration Table.

Prior to institutionalization of the electronic government in the 1990s, Korea managed civil registration data in both hardcopy and digital formats. For efficiency and promptness in administrative processing, cooperation between the online and offline systems was very important. Myanmar could also make reference to this case in its system operation.

2. Policy proposal for Indonesia

2.1. Law and Regulation on CRVS

CRVS is considered as a national priority of Indonesia led by BAPPENAS. This is similar to the case of Korea where the government took a lead in establishing the CRVS system. Under this national drive, the most important goal is the amendment of relative laws and de-regulation of CRVS system. That meaning, the required documents and complex process of birth and death register have to be simplified, and that can lead to the increase in the coverage of CRVS. Also, the integrated database for data sharing among government departments would link CRVS data and public services such as social welfare. In the case of Korea, it has established administration information public service system and enacted relevant laws and regulations in order to link public service with other welfare service. Taking the lesson from the Korean case, relevant database from different ministries of Indonesia needs to be integrated to promote efficiency which includes the integration of currently separately operated database such as SIAK (MoHA) and KUAC (recording Muslim marriage). Also in addition, a standard of data usage in budgeting and estimating policy demand is necessary in local and department level.

2.2. CRVS System management structure including organization management

The most essential success factor of the Korean CRVS system would be the systematic cooperation system. Taking this lesson into consideration for Indonesia, it could be said that although there is strong public will to establish the CRVS system, there needs to be more effort in strengthening cooperation between institutions and public officers. In order to reduce capacity gap among local governments in the era of decentralization, there has to be advancement on government official capacity building. In addition, working together with Indonesia's donors to develop various training programs and provide incentives to those who participate will be essential. Furthermore, it would be important to induce an IT innovation at the local governments so that Indonesia transforms from a manual system to an IT based digital system.

There also appears that there exist information and awareness gap among Indonesian people. In the case of Korea, the reason why people visited the local office for birth and death registration is because registration was an essential factor for receiving social benefits. For Indonesia, it might be a good idea to promote awareness on the practical benefits citizens could receive from registering birth and death.

2.3. Budget and Investment Planning on System

Various development plans have been established and implemented by the Indonesian government regarding CRVS computerization and on-line system, but these initiatives require considerable financial resources. As with the successful case of Korea, these development plans will be possible with flexible financing through information telecommunication funds and assistance and collaboration with donor governments and multilateral institutions.

2.4. Appropriate system and technical assistance

Differing from Korea's experience to first build wire communication networks through optical cable, Indonesia is simultaneously building the optical cable and CRVS computerization system through mobile communication networks. It may be easier for Indonesia to develop a mobile-based CRVS service as Indonesia is witnessing rapid increase of personal internet users and mobile telecommunication services. Also, Korea has connected the highest level system of CRVS computerization information center and the local government information system,

while Indonesia is at the stage of using a manual data processing system. It is important to promote data utilization through a whole-of-government consolidated data center establishment.

3. Policy proposal for Lao PDR

The CRVS status of Laos and measures for cooperation has already been discussed through the 1st KSP project 2015-2016. In this report, the policy proposal on the systematization of CRVS and the project for building the CMIS will be discussed. These efforts are on-going through the 2nd KSP project 2016-2017.

In Particular, in the case of Korea mentioned above, all the off-line documents were computerized through the national promotion, and a quick and natural CRVS system was constructed through the national network project. Laos is required to computerize the family book and its resident's personalities, health and residence information in the sense that the residence registration system centering on the family book is being implemented. It is necessary to establish the relevant laws and regulations in order to secure the legitimacy of related business, and to add momentum.

3.1. Overview of the Project

3.1.1. Objective of the CMIS Building Project

The purpose of this proposal is to transform the paper-based work process of resident management such as converting family books into digital document, changing working environment with IT system or Database (DB) containing the individual resident information of all the citizens of Laos. In order to realize this goal, the first step consists of performing Business Process Re-engineering (BPR) by reforming the legal framework for RR-related work and simplifying as well as standardizing the process for RR-related work. The second step is developing and distributing the CMIS, which can process the entire RR-related work carried out by central government agencies and local governments. The third step is implementing a system for sharing RR-related information among the affiliated government agencies including the Ministry of Welfare, the Ministry of Labor, the Ministry of Defense and Statistics Korea.

The practical objectives of this project are as listed below.

① To provide one-stop or non-stop delivery for RR-related public services by building a basic personal information database of approximately 6.8 million citizens living in 17

provinces and 1 prefecture and connecting the database online to allow for online processing regardless of the location of government agencies.

② To build a new public service that can process and provide all RR-related civil services where the citizens need to visit a government agency only one time to turn in one set of application documents.

③ To maximize the efficiency of public administration by building an information sharing system for all RR-related government organizations in the areas of welfare, health, labor, national defense, etc.

④ To minimize the documentation required for people to turn in for receiving public services by innovating the administrative work process through reforming the legal framework for consistency and simplifying the processing procedure.

⑤ To build a system that will provide important statistics and data to central government agencies for formulating policies and promoting the infrastructure for e-government by establishing a standardized IT infrastructure system.

3.1.2. Need for the CMIS Building Project

Currently in Laos, RR-related work, which forms the basis of a nation, is being processed manually by village communities and managed based on family books. It is impossible to gather accurate information on individual citizens, which leads to formulation of policies based on inaccurate information and thereby reducing the government's credibility while increasing numerous errors in processing administrative work related to RR information.

Moreover, with the proliferation of wired and wireless networks and the smart devices that make use these networks, the delivery of RR-related public services, irrespective of residency jurisdiction, has become a necessity for increasing number of people. By building CMIS that can provide these services to the 17 states and 1 prefecture in Laos, high quality public service delivery becomes possible. Furthermore, based on accurate real-time RR information, government policies that make use of this information will become more effective, which will lead to more people trusting government policies.

Recently, it has become imperative to build a nationwide e-government system in order to foster the ICT industry that has become the engine for national growth. However, due to the lack of a proper CMIS, the implementation of e-government has been delayed, which has led to a decline in competitiveness of the ICT industry. Therefore, there is a great need for swift implementation of CMIS in Laos.

3.1.3. Direction of Implementation

Before looking at the details, the direction of implementation is same as below. In consideration of various base factors such as networks, human resources, population, budget, etc., related to implementing the CMIS project, it should be implemented in stages for the 17 provinces and 1 prefecture based on priority. As pilot projects for each stage are completed, a rigorous evaluation will be required to identify possible issues and prepare the solutions to minimize the incidents of trial-and-error and ultimately maximize the efficiency of investments.

In order to actively make use of the CMIS for administrative affairs, not only does it need to be implemented but just as importantly, the amendment of relevant legislations, improvements in the work process, and the standardization of work all need to take place at the same time to maximize the effectiveness of the CMIS being implemented.

By building the CMIS instead of building scattered silo systems in each region, a dramatic improvement in the administrative work process and the prevention of making a redundant investment is possible since RR information will be shared by all of the central administrative agencies, local governments, and relevant government agencies.

A joint implementation system, which includes all of the stakeholders that will make use of this core system for e-government, should be established and operated.

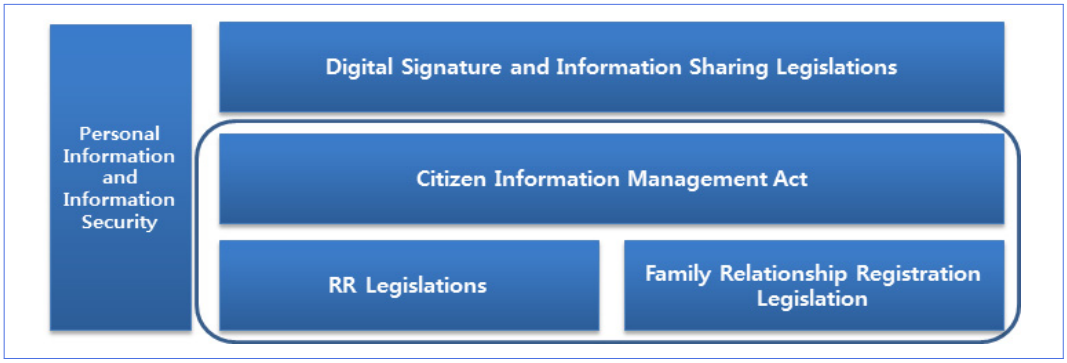
3.2. Law and Regulation on CRVS

3.2.1. Establishment of Legal Framework

1) Overview and Considerations

The first task to carry out in the preceding phase of implementing the CMIS is to design the legal framework. The legal framework for the CMIS can largely be classified into legislation on RR that deals with matters on RR, legislation on family relationships, legislation to digitize and manage these two legislations, and legislation on information sharing that is needed to make use of the CRVS system. For secure and reliable operation of the CMIS, legislation on the protection of personal information and information security could also be included in the legal framework.

Figure Ⅳ-1 | CMIS Legal Framework



The biggest question to take into consideration for building a legal framework for the CMIS is whether the currently existing legislation on RR or family relations will be revised or a new legal framework will be built and enacted along with the implementation of the CMIS.

It is the suggestion of this Consulting Team that the government of Laos enacts a special legislation, the Citizen Information Management Act, that establishes the RIN system, digitizes RR information into the database, establishes the needed governance, and secures the necessary budget so that the CMIS can be implemented in a short period of time and revise existing RR or family related legislations. Once the CMIS is operating smoothly, it will be possible to either newly enact legislations on information sharing, information security, and privacy protection or revise the existing legislations.

A brief introduction of what needs to be done to build a legal framework in accordance with the above suggestions is outlined below.

2) Establishing the RR System

The legal framework for the CMIS must include the basic items of the RR system and the division of labor.

The main objectives for making residents of the muang (state, borough) and the ban (county) register as residents of their respective domicile are to increase the benefits provided to them and to properly process administrative tasks based on accurate demographic and residential information. The heads of the muang·ban will oversee the RR-related work. The RR Act will define various RR-related tasks, such as RR reporting, corrections and deletion of RR information, RINs, issuing and recovering the RR Certificate Cards, among others.

a) RR Reporting

The person with the duty to report must make his or her registration report with the proper documentation to the head of the ban or muang. The registration report includes reporting for registration, corrections, deletions, address change, etc. and must be reported within 14 days of the occurrence of the event that needs to be reported. In the case of moving out of the country, the overseas move must be reported before the departure. The person who bears the responsibility for making the report is called the 'reporting person'. Normally, it is the head of the household who needs to do this, but in case he or she cannot do so, the manager of the household or the person who wishes to register can do it. For people residing in training camps, RR can be reported using the training camp as the unit for reporting and in this case, the manager of the camp becomes the reporting person. All reporting of RR-related matters can be done either by documentation or verbally. When reporting by documentation, the reporting person must fill out the prescribed declaration, which can be turned in by a representative or a messenger. Verbal reporting must be done by the reporting person at the RR reporting public office in person where the civil servant who receives the report will fill out the necessary documentation based on the verbal report. They will then read out the filled-out documentation for final confirmation and then have it signed by the reporting person.

b) Correction and Deletion of RR Information

The changes made to either correct a wrong entry or reflect changes that are different from actual facts regarding the RR are called the "correction of registration." There are three ways to make corrections, which are declaration, direct action, and objection. A correction to registered RR information is made when the reporting person declares changes in RR information to the appropriate authority with documentation that proves the changes that need to be made. Direct action is taken when a declaration is not made within 14 days. An objection is the change made when someone objects to the changes made through direct action. A deletion of registration is made when the person in question either dies or has been determined to have two or more identical RRs registered. Also, when an occupant is removed from a household, the occupant is also deleted. In the case of deletion, just as in the case of making a correction, there are several methods of doing so. If part of the household makes deletion, the resident may continue to keep the RR Certificate Card, and in other instances, the Card is retrieved.

c) Establishing the RIN System

The RIN is a 13-digit number granted by the government to an individual who registers as a resident. A dash is used to separate the first six digits and the last seven digits of the RIN. This number is given out at the ban of birth during the birth registration process.

d) Resident Identification Number (RIN)

The RR Certificate Card is a certificate that proves that the person in question has registered himself/herself as a resident of his/her domicile in accordance with the Resident Registration Act. It must be issued to all Laotian citizens over the age of 17. However, only citizens with a verified family relationship and military status are eligible. The photo, name, RIN, current domicile, right thumb print, and biometric information are recorded on the RR Certificate Card along with verification seal from the head of the ban.

e) Foreigner Registration

As with Laotian citizens, all long-term foreigners in Laos must receive a Foreigner Registration Certificate Card with a Foreigner Registration Number that is generated in accordance with the same regulations applied to the Laotian people.

3) Establishment and Digitization of the FRR System

The registration and verification of matters regarding family relationships, such as birth, marriage, and death, need to be included in the establishment of the legal framework for the CMIS. The main content will be the registration of matters on and changes in family relationships as well as determines authorities responsible for those roles. Also, once defined, the tasks related to FRR need to be delegated to the local government offices of provinces, muang, and ban. The FRR Record Card includes items such as office of registration, name, gender, birth date, RIN, family relationships (i.e., marriage, birth, and death), and any changes. In the case of family which has a foreign national member, it will be registered the name, sex, birth date, nationality and foreign registration number, etc.

The legal framework for the FRR must govern the online digital processing work procedures for registration work that will be carried by the heads of province, muang, and ban local offices. In order to manage and store the FRR Records and make efficient use of digital records, some sort of digital information management or storage system should be implemented. Furthermore, regulations for making use of FRR information through an information sharing system based on authorization provided by the head of the relevant central government agency should be prepared.

The FRR Record Card reporting process needs to be designed so that it is done by an officially approved, such as proper declarations, notification from the relevant authorities, the result of legal proceedings, etc., to maintain proper records for official use. If a citizen does not have a FRR registration, a new FRR Record Card needs to filled out and created. Moreover,

the FRR process needs to have the procedures for maintaining credibility when records in the FRR Record Cards are determined not to have legal validity or are incorrect due to some error by having the heads of the province, muang, and ban notify the reporting person of this fact without delay.

4) Implementing the Informatization of RR

One aspect that should not be overlooked in establishing the legal framework for the CMIS is that a firm legal basis is needed to carry out the informatization project for RR where resident information is gathered systematically from the citizens and digitized into a database. This legal basis will help to draw up a comprehensive policy for the informatization of RR that includes the governance and procedures for project implementation. Moreover, this legislation will include the implementation of a pilot project to promote the use of RR informatization-related technology and devices with the appropriate financial, administrative, and technical support provided. The government will also provide tax incentives or financial supports to contractors and for education and training on digital technology for the development of the information society.

5) Securing the Authenticity of Digital Documents and Protecting Personal Information

When RR information is digitized, it is imperative to build credibility for it. In this regard, an electronic signature is important for sharing and using information. Legislation on electronic signatures will grant legal validity to electronic document just like written documents. However, it needs to address the basic elements for the circulation of electronic documents, such as measures for promoting this circulation, protecting the distributers of these documents, ensuring the credibility and authenticity of electronic documents, etc.

Once the stable implementation of the CMIS occurs, measures for protecting personal information have to also be implemented with great care.

3.3. CRVS System management structure including organization management

3.3.1 Establishing Governance for the CMIS

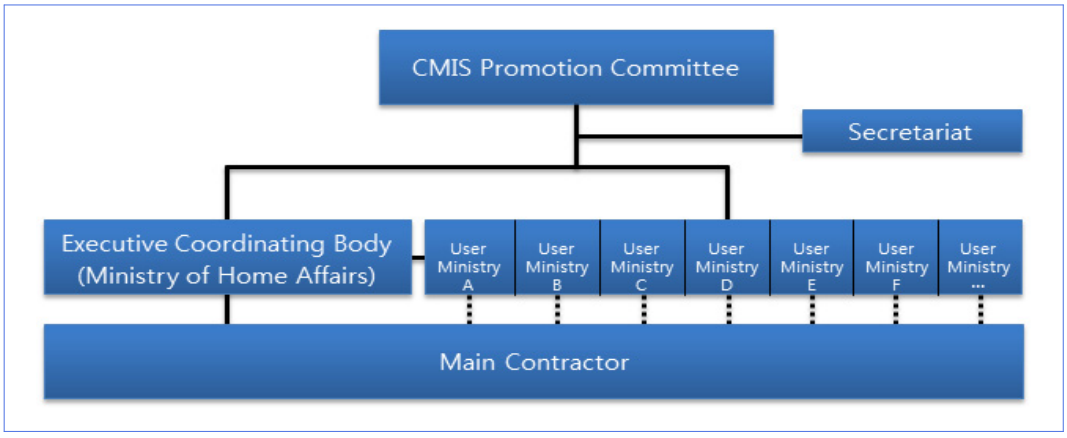
Because of the vast monetary and human capital investments that need to be made and

the nature of the CMIS, which will become the foundation of all e-government systems in the future, a systematic and fully cooperative implementation structure must be established for the CMIS developing project to be implemented. Three preconditions must be met to build this structure for this project.

First, in order to secure the large sum of budgetary support and human expertise to implement the CMIS for a number of years, the implementation system must be established by the chief-of-state, such as the president or someone with equivalent decision-making authority. Second, the project implementation structure must include all of the stakeholders. This is needed all RR-related IT systems must be properly connected to provide one-stop or non-stop digital administrative processing to achieve the original objective of maximizing the efficiency of public administrations. Third, the implementation structure should be multi-layered. A working-level standing committee that can review and decide on the various working level issues and considerations of the CMIS implementation project, an implementation steering committee composed of representatives of various relevant organizations that can deliberate on the project implementation plan and coordinate or resolve various issues, and the Committee for Public Administration Informatization that deliberates and coordinates the basic policies for national informatization must all be established in order to enable swift decision making and efficiency in implementing the project.

The diagram below shows an implementation structure that satisfied all three of the preconditions outlined above.

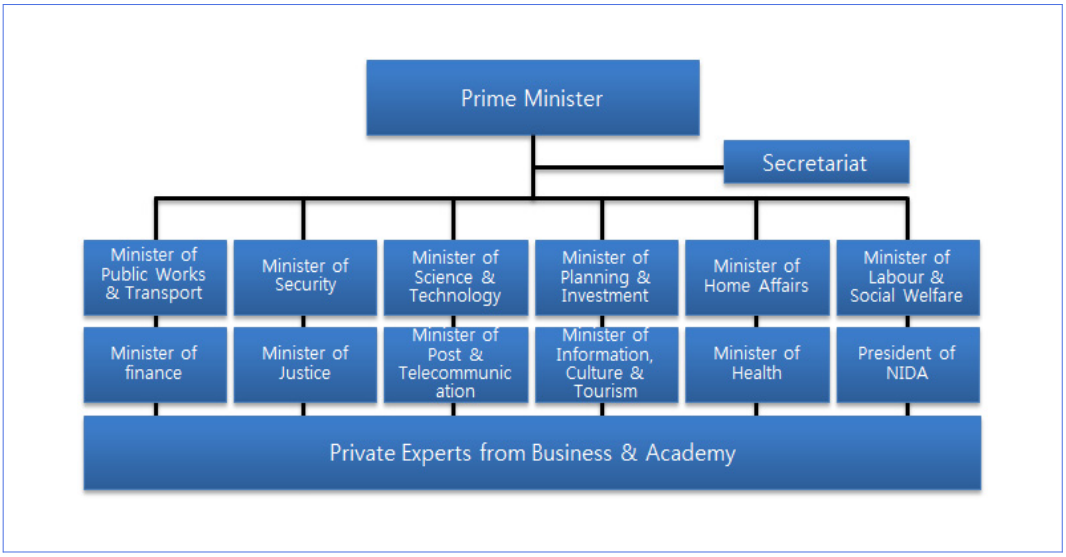
Figure Ⅳ-2 | Diagram of CMIS Implementation Structure



1) Establishing the Committee for Public Administration Informatization

This committee will have various functions, such as deliberating on and coordinating the basic plan for the informatization of public administration, deliberating on and coordinating the financing and repayment of the funds needed for the informatization of public administration, deliberating on and coordinating the various technologies and devices to be implemented and provides legislative support for revising the regulations and laws on the informatization of public administration. This committee would be placed under the president, and the prime minister would serve as its chairperson with the vice ministers from relevant government ministries[22] and external experts serving as members. To provide the necessary support for the operation of this committee, a secretariat composed of 15 civil servants dispatched from the ministries involved would be established.

Figure Ⅳ-3 | Organizational Structure of the Committee for Public Administration Informatization



22) Minister of Public Works and Transport, Minister of Security, Minister of Science and Technology, Minister of Planning and Investment, Minister of Home Affairs, Minister of Labour and Social Welfare, Minister of Finance, Minister of Justice, Minister of Post and Telecommunication, Minister of Information, Culture and Tourism, Minister of Health, and President of National ICT Development Agency

Table Ⅳ-1 The Function of the Committee for Public Administration Informatization

Category	Major functions
Basis for establishment	The regulations and laws on the informatization of public administration
Function	• Deliberating on and coordinating the basic plan for the informatization of public administration • Deliberating on and coordinating the financing and repayment of the funds needed for the informatization of public administration • Deliberating on and coordinating the various technologies and devices to be implemented • Provides legislative support for revising the regulations and laws on the informatization of public administration
Establishment	Established under the President
Composition	Chairperson: Prime Minister M Members: Vice Ministers from relevant government ministries and external experts
Operation of the Committee	A secretariat composed of 15 civil servants dispatched from the ministries involved

2) Establishing the CMIS Implementation Committee

This committee serves to finalize the basic plan for implementing the CMIS, select tasks for it, review the scope of development for each task, test the result of the developed system, review the implementation of various equipment, and more. This committee should be established under the Ministry of Home Affairs with the Vice Minister of Home Affairs as its chairperson and its members shall be the general directors of relevant government ministries[23] as well as external experts. To support the operation of this committee, five civil servants from the Ministry of Home Affairs should be dispatched to the secretariat for this committee.

23) Director General of Public Works and Transport, Director General of Security, Director General of Science and Technology, Director General of Planning and Investment, Director General of Home Affairs, Director General of Labour and Social Welfare, Director General of Finance, Director General of Justice, Director General of Post and Telecommunication, Director General of Information, Culture and Tourism, Director General of Health, and Vice President of National ICT Development Agency

Figure Ⅳ-4 | Organizational Structure of the CMIS Implementation Committee

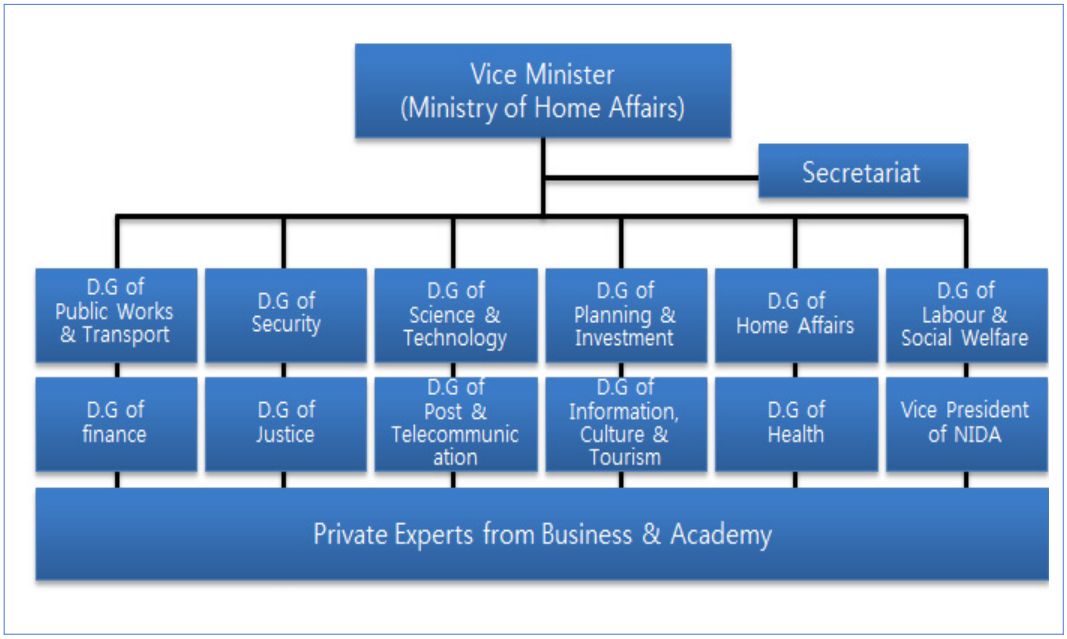


Table Ⅳ-2 | The Function of the CMIS Implementation Committee

Category	Major functions
Basis for establishment	Citizen Information Management Act
Function	• Serves to select tasks and finalize the basic plan for implementing the CMIS • Review the scope of development for each task • Test the result of the developed system • Review the implementation of various equipment
Establishment	E Established under the Ministry of Home Affairs
Composition	Chairperson: Vice Minister of Home Affairs M Members: General Directors of relevant government ministries and external experts
Operation of the Committee	5 civil servants from MOHA should be dispatched to the secretariat

3) Establishing the Agency for National ICT Development

The legal basis for establishing the Agency for National ICT Development should be a part of the Citizen Information Management Act. The Agency needs to be established as a legal entity in the form of a corporation and the articles of association can be changed with authorization from the minister of Home Affairs. To finance the establishment and operation of the Agency, the government, local governments, and government-invested institutions will provide the budget. If needed, state property may be transferred or loaned free of charge.

In regards to the CMIS implementation project, the Agency will provide support for establishing the implementation plan, project management, and supervision. Also, the Agency can carry out various tasks and activities, such as the standardization of technology related to the informatization of public administration for the swift implementation of national projects, provide technical assistance regarding the development of devices and technology related to the informatization of public administration, perform feasibility studies, supervise the informatization projects of various government agencies, and delegated work from the heads of other government agencies.

Figure Ⅳ-5 | Committee Organizational Structure of the Agency for National ICT Development

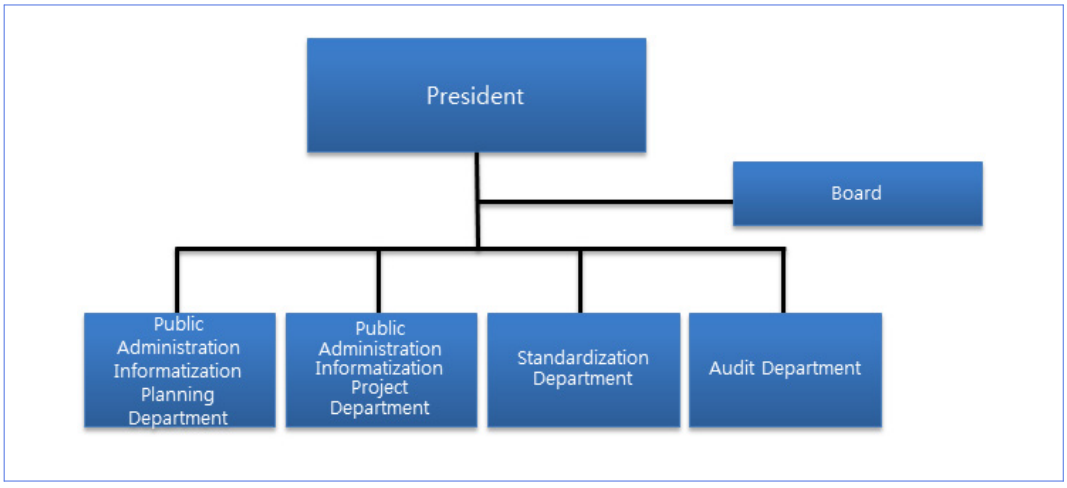


Table Ⅳ-3 | The Function of NIDA

Category	Major functions
Basis for establishment	Citizen Information Management Act
Function	• Designation and general analysis of designated tasks • Review on the design and development of comprehensive data processing system • Standardization of technology on administrative information • Technology on administrative information and technological guidance on the development of equipment • Review and supervision of feasibility on administrative informatization projects initiated by government organizations • Other projects commissioned by the head of government organization
Establishment	Es Established under the Ministry of Home Affairs

4) Establishing the Central Data Center and the Local Data Centers

In order to efficiently manage various databases and provide convenient, stable, and economical services for the CMIS, a Central Data Center and Local Data Centers must be built and operated. The Central Data Center needs to manage the databases for the CMIS as well as operate and maintain the hardware and software of the Local Data Centers. For the development and test operations of the CMIS, the Central Data Center should be operated by the main contractor but once the services of the CMIS are in full production, a government agency needs to operate the Central Data Center. The Local Data Centers are in charge of managing local databases by building, operating, and managing the database of the citizens living within the local region.

The Local Data Centers must be established within the various local governments nationwide. During the CMIS development and test operation phases, the Local Data Centers will be run by the main contractor and the local government jointly. However, once the services of the CMIS are in full production, the head of the local government can decide who will run the Local Data Center. To save on operation budget costs, integrated operation with other nearby Local Data Centers should be favorably reviewed and considered.

However, in order to guarantee the interoperability of information and data used by the CMIS, the designing, changing, supplementation, and additional development of databases, document processing procedures, standardization of codes, scope of users, and procedures for use must be deliberated and arbitrated by the CMIS Implementation Committee and the

CMIS Coordination Committee no matter who is responsible for the operation of the Data Centers.

3.4. Budget and Investment Planning on System

3.4.1. Budget Financing

There are two methods for financing the funds need to implement the CMIS project. The first method is to obtain a loan from the World Bank. The Agency for National ICT Development can take out the loan from the World Bank and implement this project.

The second method is to finance investments from various sources to generate the 70 billion KRW needed to implement the CMIS project with a direct investment of 10 billion KRW from the government, 15 billion KRW from the National Investment Fund, 10 billion KRW from the financial services of the Post Office, 15 billion KRW from financial loan and investment companies, 10 billion KRW from bank loans, and 10 billion KRW from corporate bonds.

3.4.2. Annual Budget Planning

A total of 70 billion KRW will be invested for the implementation of the CMIS project, starting with 10 billion KRW in the first year in 2017, then 20 billion KRW in 2018, 20 billion KRW in 2019 and 20 billion in 2020.

Table Ⅳ-4 | CMIS Budget Planning (unit: KRW 10 billion)

Item	Investment				Development	Total
	Main Computer	Communications Equipment	Center Construction	Work Station	Software Development & Operations	
RR	300	100	-	300	400	1,100

※ It is an estimate of the present point in time

The operational costs of the central data center that is in charge of operating the CMIS and local data centers established in each local autonomy will be supported by the government before operational environment is established, and after the Ministry of Interior (MOI) and relevant local autonomy each uses their informatization budget. Data usage fees and network usage fees between the central and local governments are determined later based on actual operational results.

3.4.3. Cost Settlement

The CMIS main contractor should be negotiate with the MOI and formulates a draft budget for the implementation of the CMIS. The Agency for National ICT Development reviews the appropriateness of the draft budget submitted by the main CMIS contractor and presents the final draft budget for the construction of the CMIS to the CMIS Implementation Committee and the CMIS Coordination Committee. The CMIS Implementation Committee and the CMIS Coordination Committee deliberate and approve the submitted draft budget.

Once the draft budget is approved, the main contractor submits a request to Agency for National ICT Development for a retaining fee amounting to 70% of the total project costs, and the Agency for National ICT Development pays the requested retaining fee to the main contractor. The main contractor uses the retaining fee to implement the project, and once the project is completed, he or she requests for the Agency for National ICT Development to conduct an audit of the project results. The Agency for National ICT Development completes the audit within 14 days of the request and notifies the main contractor of the audit results.

Once notified of a positive audit result, the main contractor requests the Agency for National ICT Development for the remaining contract fee. The Agency for National ICT Development pays the remaining amount to the main contractor, and the project is completed.

3.5. Appropriate system and technical assistance

In order to implement the CRVS system and establish the CMIS, an integrated database that can integrate the resident registration and family relationship information should be constructed. The information should also be used in connection with census statistics, and a smooth communication system must be established so that relevant departments can share information. In particular, it should review the legitimacy of the requirements so that the information of the citizen is not misused. It is necessary to apply personal information protection and information security technology in order to collect information in one place.

3.6. Basic Conditions for Building CMIS

3.6.1. Establishing the Resident Identification Number (RIN) system

1) Principles for Establishing the RIN

In order for the government of Laos to successfully implement a nationwide CMIS system,

a RIN system that can distinguish each of individual citizens needs to be established. The three principles listed below are recommended for designing a RIN system.

① Because the RIN will be used to identify every citizen, the RIN needs to be unique for each individual.
② Except in special cases, the RIN should not change until the citizen passes away.
③ The RIN should not be a simple string of numbers, but should include diverse personal information, such as date of birth, sex, region of birth, etc.

2) Plans for Establishing the RIN Formula

a) Plan A: Implement the Korean RIN Formula

The RIN is composed of 13 digits and is given to every citizen upon birth as a unique identifier. The first six digits represent the year and the date of birth with the century left out, and the last seven digits include the birth century, sex, and region where the RIN was issued. The first number of the last seven digits represent the century of birth and sex. Different numbers are given according to the century of birth and the gender of the citizen[24].

The four numbers starting from the second digit to the fifth digit of the last seven digits represent the organization (city/country/district office) that first issued the RIN and can be used to identify where it is. The last single digit of the seven digits is an error correction number that can be used to determine if a RIN has been falsified or is incorrect.

Format of the RIN: XXXXXX-XXXXXXX

b) Plan B: Implement the Social Security Number Formula of the U.S.

The RIN consists of nine digits divided into three sections. The first three digits represent the area of residency where the RIN was first requested. The next two digits in the second section represent the district divided according to convenience, while the last four digits in the third section represent the order of RIN issuance.

Format of the RIN: XXX-XX-XXXX

24) A male born in the 1800s will be given the number 9 while a female born in the same century is given a 0. And a male born in the 1900s will be given a 1 while a female born in the same era will be given a 2. For the 2000s, a male will receive the number 3 while a female receives a 4.

3.6.2. Selecting Information for RR

It is necessary to determine what information will be entered into the CMIS in order to build it. The information entered into the CMIS will be connected to other systems from various related organizations. Therefore, it should be composed of the individual RR information for each citizen and household RR information to determine who lives in every household.

The individual RR information for input should include the RIN, name, birth date, sex, blood type, marital status, home address, changes in home address (move-in/out date), the RIN of the head of the household, name of the head of the household, and the relationship with the head of the household. The household RR information for input should include the RIN of the head of the household, the name of the head of the household, the RINs of household occupants, the names of household occupants, date of change in address (move-in/out dates), reason for change of address, address, and state of residency.

Table Ⅳ-5 | RR Information for Input

Category	Input Information
Individual RR Information (13)	RIN, name, birth date, sex, blood type, marital status, address, date of change in address(date of move-in/out), RIN of head of household, name of head of household, relation to head of household, photo, fingerprint
Household RR Information (8)	RIN of head of household, name of head of household, RINs of occupants of household, names of occupants of household, date of change in address (date of move-in/out), reason for change in address, address, state of residency

3.6.3. Developing the Standard RR Record Card

In order to build a database that contains the RR information of all the citizens living in Laos, the development of a standard RR Record Card that can be used by all of the country's administrative agencies is needed. This standard RR Record Card should include the information that is needed to carry out RR-related tasks.

The standard RR Record Card needs to be developed separately from the individual RR Record Card that will be used to comprehensively record all personal information declared and the household RR Record Card that will be used to comprehensively record all matters related to the household. The standard individual RR Record Card will only contain the personal information of the individual, while the standard household RR Record Card will contain the

address and personal information of all the occupants of the household.

① Standard Individual RR Record Card [25]: RIN, name, birth date (YYMMDD), sex, blood type, registration office, changes in address (move-in/out dates), name of the head of the household and relationship to him or her, country of residence (area), residency status, registration status, date the RR Certificate Card was issued, photo, transit organization, date first composed and name of the writer, date·reason·name for reissued card, and foreigner registration number.

② Standard Household RR Record Card[26]: name of the head of the household, serial number of the household, date·reason·name for reissued card, changes in address (move-in/out dates), information on the occupants of the household (name, RIN, office of registration, reason for change, state of registration), information on the occupants (name, relationship with the head of the household, RIN, office of registration, move-in/out dates, state of registration), and transit organization.

3.6.4. Census

Once a nationwide RIN system has been established including the RR information determined and the standard RR Record Card developed based on the IT infrastructure especially CMIS, the next step should be a complete population census for all of Laos.

Although this census will be carried out in order to implement the CMIS, close cooperation with relevant organizations should be encouraged to identify the items that should be surveyed for when the census is conducted, due to the high cost of carrying out the project. The UN recommendations on launching a census should be taken into consideration.

3.6.5. Information Sharing, Information Security and Personal Information Protection

Basically, information sharing and its security should be considered in all processes. In addition, Laos needs to take preemptive measures in view of the fact of Korea that information sharing between the organizations is not carried out smoothly and information protection measures are carried out subsequently. Therefore, it is necessary to establish clear governance through systematic and institutional restructuring as mentioned above, and to establish an information sharing system and an integrated legal system for dealing with dysfunctions for protecting personal information and securing systems.

25) Refer to Resident Registration Table for Individuals in the Appendix
26) Refer to Resident Registration Table for Households in the Appendix

Ⅴ. CRVS Knowledge Sharing Forum: Workshop Planning

1. Overview of Workshop

A Global Knowledge Forum was held from May 22-26, 2017 in Seoul, Korea. 76 local and international experts of CRVS, including WB specialists and other stakeholders such as government officials from 27 countries from Asia, South America, and Africa attended the forum. The theme was "Strengthening Civil Registration and Vital Statistics and National Identity Management Systems."

The Forum was divided into 2 categories: days 1-2 was held with the theme of "The High-level Launch of the State-of-the-art Civil Registration and Vital Statistics eLearning Course," and days 3-5 with the theme of KSP Knowledge Sharing Forum opened a CRVS workshop with the three partner countries from Indonesia, Laos PDR, and Myanmar.

2. Workshop Synopsis

Table V-1 | Day One: Sharing Korea's Experience (May 22, Monday)

Time	Contents of the Program
09:00-09:30	Registration and arrival tea
09:30-10:00	Opening and Welcoming Remarks • Mr. Deok-Seob Shim, Assistant Minister, Korea Ministry of Interior • Mr. Yeon Ok Choi, Director General, Social Statistic Bureau, Statistics Korea • Ms. Margot M Brown, Director, Global Operations Knowledge Management, World Bank Group • Mr. Joon-Kyung Kim, President, Korea Development Institute • Mr. Chae Gun Chung, Head, UN Project Office on Governance (former Vice Minister of Interior) Photo Session
10:00-11:30	Korea's E-Government • History (Dr. Kuk Hwan Jeong, Vice President, Korea Institute for Development Strategy) • Demonstration/video • Issues and Challenges (Mr. Doh-Yoon Kim, Principal Manager, National Information Society Agency) Q&A
11:30-13:30	Lunch
13:30-15:00	Korea's Resident Registration System • History (Dr. Sang-Baek Chris Kang, Director, Korea Local Information Research & Development Institute) • Demonstration/video Q&A
15:00-15:30	Tea and Coffee Break
15:30-17:00	Korea Vital Statistics System • History (Ms. Juhwa Song, Deputy Director, Vital Statistics Division, Social Statistic Bureau, Statistics Korea) • Demonstration/video Q&A

Table V-2 | Day Two: CRVS eLearning Course Launch (May 23, Tuesday)

Time	Contents of the Program
09:30-10:00	Opening and Welcoming Remarks • Mr. Yoon Kyung Kim, Director General, International Finance Cooperation Bureau, Korea Ministry of Strategy and Finance (MoSF) • Ms. Haishan Fu, Director, Development of Data Group, WBG • Mr. Hong Tack Chun, Dean, KDI School of Public Policy and Management • Mr. Ashish Kumar, Director of the Statistical Institute for Asia and the Pacific • Mr. Oliver Chinganya, Director, African Centre for Statistics, UN Economic Commission for Africa Photo session
10:00-10:45	Reimaging Learning for Development, Open Learning Campus • Ms. Sheila Jagannathan, Head, Open Learning Campus, WBG
10:45-11:15	Tea and Coffee Break
11:15-12:00	CRVS eLearning Course Overview (WBG) • Dr. Samuel Mills, Senior Health Specialist, WBG
12:00-13:00	Demonstration of CRVS eLearning Course • Ms. Sheila Jagannathan, Head, Open Learning Campus, WBG • Dr. Samuel Mills, Senior Health Specialist, WBG Q&A
13:00-14:30	Lunch
14:30-15:30	Panel Discussion: What are the CRVS training needs of countries? Moderator: Taejong Kim, Professor, KDI School Panelists • Dr. Baba Gana Wakil, Director CRVS, National Population Commission • Mr. Sheikh Mujibur Rahman, Registrar-General, Bangladesh • Mr. Angelo Paunde, Principal Secretary, Ministry of Justice, Mozambique • Mr. Chea Sanford Wesseh, Assistant Minister for Vital Statistics, Ministry of Health, Liberia • Mr. Edward Duffus, Head of Birth Registration Innovation, Plan International Q&A
15:30-16:30	Panel Discussion: How can we use the CRVS learning curriculum to improve in-country capacity of CRVS Systems? Moderator: Ms. Sheila Jagannathan, Head, Open Learning Campus, WBG Panelists • Dr. Yusuf Muranwa, Director-General, National Institute of Statistics, Rwanda • Ms. Emmy Hudson, CEO, Registration, Insolvency and Trusteeship Agency (RITA) • Mr. Felix Ortega de la Torre, Cabinet Advisor, Registro Nacional de Identificación y Estado Civil (RENIEC), Peru • Mr. Oliver Chinganya, Director, African Centre for Statistics, UN Economic Commission for Africa • Ms Carla AbouZahr, Bloomberg Data for Health Initiative Q&A
16:30-17:00	Tea and Coffee Break
17:00-18:00	Center of Excellence for CRVS systems support for country level capacity building Moderator: Dr. Samuel Mills, Senior Health Specialist, WBG Presenter • Dr. Sana Naffa, Senior Program Officer, Center of Excellence for CRVS systems, International Development Centre

Table V-3 | Day Three: Knowledge Sharing Program I (May 24, Wednesday)

Time	Contents of the Program
09:30-11:00	Opening and Welcome Remark • Dr. Jun Ho Shin, Director, International Economic Cooperation Strategy Division, MoSF • Dr. Minah Kang, Professor, Ewha Womans University Photo session Keynote speech: Overview of CRVS and National ID Management System in Korea • Dr. Hee Joon Song, Professor, Ewha Womans University Session 1: Lessons Learned • Moderator Dr. Minah Kang, Professor, Ewha Womans University Presentation 1 Historical Development of Laws on Family Relationship Registration and Resident Registration in Korea • Dr. Hyung-Gun Kim, Senior Research Fellow, Korea Legislation Research Institute Presentation 2 Development and Utilization of Vital Statistics in Korea • Dr. Seung Wook Lee, Senior Research Fellow, Korea Statistics Promotion Institute Q&A
11:00-11:30	Tea and Coffee Break
11:30-12:30	Lessons learned (cont'd) Moderator Dr. Geunjoo Lee, Professor, Ewha Womans University Presentation 3 Integration of CRVS and National ID: ID Cards and Passport etc. • Mr. Sam Choi, Deputy Manager, Korea Minting, Security Printing & ID Card Operating Corporation Presentation 4 The Public Services in Korea (20mins) • Mr. Deuk Jung Kim, Vice President, National IT Industry Promotion Agency Q&A
12:30-14:00	Lunch
14:00-15:30	Session 2: Integration of CRVS and National Identity Management Systems Moderator Dr. Samuel Mills, Senior Health Specialist, WBG Presentation 5 Overview • Dr. Samuel Mills, Senior Health Specialist, WBG Presentation 6 Mauritius Integrated Civil Registration and Identity Management System • Mr. William Mario Ayelou, Registrar of Civil Status, Civil Status Division, Prime Minister's Office, Mauritius Q&A

Table V-4 | Day Four: Knowledge Sharing Program II (May 25, Thursday)

Time	Contents of the Program
09:00-10:30	Session 3: Country Presentation Indonesia Moderator Dr. Haelim Cho, Professor, Ewha Womans University Presentation 7 Plan to Link Birth Registration and Identity Management • Mrs. Anny Julistiani Mardiono, Director of Civil Registration,, Ministry of Home Affairs (MOHA) Presentation 8 Plan to Improve the Production of Vital Statistics • Mr. Parwoto, Head of Preparation Demographic Statistics Section, Statistics Indonesia (BPS) Briefing: The finding of Knowledge Sharing Program Study • Dr. Haelim Cho, Professor, Ewha Womans University (KSP team) Q&A
10:30-11:00	Tea and Coffee Break
11:00-12:30	Session 4: Country Presentation Lao PDR Moderator Dr. Samuel Mills, Senior Health Specialist, WBG Presentation 9 Plan to Improve Civil Registration Coverage (30mins) • Mr. Khansith Luangxay, Divisional Director, Department of Civil Management, Ministry of Home Affairs Presentation 10 Plan to Improve the Production of Vital Statistics (10mins) • Mme. Thirakha Chanthalanouvong, Deputy Director General, Social Statistics Department, Ministry of Planning and Investment Briefing: The finding of Knowledge Sharing Program Study (20mins) • Dr. HunYeong Kwon, Professor, Korea University (KSP team) Q&A
12:30-14:00	Lunch
14:00-16:00	Session 5: Country Presentation Myanmar Moderator Dr. Yujin Choi, Professor, Ewha Womans University Presentation 11 Plan to Improve Birth Registration (20mins) • Ms. Khin Mya Thet, Deputy Director, Ministry of Labour, Immigration and Population (MoLIP) Presentation 12 Plan to Link Birth Registration and Identity Management (20mins) • Ms. Khin Mya Thet, Deputy Director, MoLIP Presentation 13 Review of the Existing Processes for the Production of Vital Statistics (20mins) • Ms. Naw Hsah Ka Paw, Deputy Director, Central Statistical Organization, Ministry of Planning and Finance Briefing: The finding of Knowledge Sharing Program Study (20mins) • Dr. Yujin Choi, Professor, Ewha Womans University (KSP team) Q&A
16:00-16:30	Tea and Coffee Break
16:30-17:30	Session 6: Vital Statistics in the Pacific Moderator Dr. Samuel Mills, Senior Health Specialist, WBG Presentation 14 Plan to Improve Vital Statistics in the Pacific (30mins) • Ms. Gloria Mathenge, Social Statistician, Secretariat of the Pacific Community, New Caledonia Q&A

Table V-5 | Day Five: Field Trip to Daejeon (May 26, Friday)

Time	Contents of the Program
08:00~10:30	Seoul (Hotel) → Daejeon
10:30~12:30	National Computing and Information Service (NCIS)
12:30~13:40	Lunch
13:40~14:00	NCIS → Yuseong District Office
14:00~14:40	Yuseong District Office
14:40~18:00	Daejeon → Seoul
18:00~20:00	Dinner

3. Participants' Feedback

3.1 Program Satisfaction Survey

A total of 27 participants in the days 3-5 forum responded to a program satisfaction survey developed by the Korea Eximbank and KSP. This survey aimed to evaluate overall satisfaction with the followings: the workshop, contribution of the workshop, partnership with Korea, contents of presentation sessions. The rating uses a scale from 1 (Deficient) to 5 (Excellent). The diagrams below Figure III-1 are graphical versions of the workshop survey's results.

In terms of overall satisfaction experienced throughout the workshop, 25 persons of the participants said they were satisfied with the organization of the workshop and were very likely to advance the partnership between Korea and other developing countries.

The overall satisfaction experienced throughout the workshop are evaluated as above average satisfaction level about satisfaction with contents, contribution and usefulness, and overall logistical arrangement.

3.2 Field Trip Satisfaction

The survey covered responses on utility of field trip for understanding CRVS of Korea, and the majority of respondents were highly satisfied at National Computing and Information Service ((NCIS, 85% respectively) and Yuseong District Office (70% respectively) It was concluded that such field trips were successful and meaningful.

3.3 Participants' Opinions

Most participants expressed high satisfaction about the sharing knowledge and experience exchange among the developing countries. They also mentioned that they hope to have such workshops held on a regular basis, perhaps annually.

Figure V-1 | CRVS Forum: Workshop Organization and Activities



4. Program Agenda: Contents of Presentations

This section presents an overview of the main discussions, discussion points of workshop sessions, presentations and the Question-and-Answer sessions.

4.1 Lessons Learned

Table V-6 | Session 1: Main Contents

Historical Development of Laws on Family Relationship Registration and Resident Registration in Korea
• History and major Amendments of Laws on Family Relationship Registration and Resident Registration • The meaning of Amendments of Laws on Family Relationship Registration and Resident Registration
Development and Utilization of Vital Statistics in Korea
• Introduction of various procedures with resident registration (Birth, Death, Marriage and Death Registration Forms), Vital Statistics Registration System, History of Civil Registration and Private Family Registry (Genealogy) • Role of Main Government Organizations including Supreme Court, Ministry of the Interior and Statistics Korea • Introduction of Population Statistics derived from Vital Statistics (Birth, Death, Marriage and Death Registration)
Integration of CRVS and National ID:ID Cards and Passport etc.
• Introduction of NID and e-passport in Korea, including the work flow, capacity and security features • Introduction of security technology of KOMSCO including currency, ID Products, Security Paper and others
The Public Services in Korea
• Introduction of E-Government and Public Services and demonstration its current services (website) • Highway Real Time Traffic Monitoring, Safety Map, Healthcare, HomeTax, Minwon24 (online civil petition), M-Voting, etc.

Dr. Hyung-Gun Kim from the Korea Legislation Research Institute explained how law amendments have been possible in Korea in such a short time: because both the National Assembly and Government could propose the propositions, and due to the supporting organizations for law amendments such as the Ministry of Government Legislation and Korea Legislation Research Institute.

Regarding the request to clarify the difference between the terms 'Family' and 'Household', Dr. Seung Woo Lee from the Korea Statistics Promotion Institute explained that 'family' is the term that emphasizes 'blood-relationship,' and the term 'Household' emphasizes how many people compose the family which the criteria could be varied from country to country. In addition, he explained that 'Family Relationship Registration' is related to 'blood-relationship' and 'Resident Registration' is related to 'residence.' Ms. Junny Kim from the OECD Korea Policy Centre also mentioned that 'Resident Registration' which is based on residence is a much broader concept in comparison with the 'Family Registration' which only covers families who holds Korean Nationality and some foreign families.

On the question about how membership to a specific family or blood-relationship is proved, Ms. Junny Kim answered that it is verified through 'Household Registration' which shows the status of blood-relationship, marriage, adoption, and other legal relationships. In addition, Prof. Minah Kang from Ewha Womans University explained that 'Household Registration' is connected with the life-cycle events such as birth, marriage, adoption, etc.

Regarding the question about the process of practical use of resident registration information, Mr. Sam Choi from the Korea Minting, Security Printing & ID Card Operating Corporation explained that the entire process is under the management of the government and the government only shares vital information with KOMSCO, and that KOMSCO deletes the information after issuing ID Card or Passport. On the question on the status of KOMSCO (on the relationship with the government such as contracts), Mr. Choi explained that KOMSCO is a public organization funded by the government and that KOMSCO's primary function is to manufacture Korea currency.

For the question about the process of dealing with the passport of the dead, Ms. Kim answered that since people should register death within a month, the passport of the deceased cannot be reused. In addition, Mr. William Mario Ayelou (from Mauritius) shared the case of Mauritius: since people should bring their ID Card to civil office for death registration and it is connected to the computerized system, people cannot use other's ID Card after its owner has died.

4.2 Integration of CRVS and National Identity Management Systems

Table V-7 | Session 2: Main Contents

Overview: Integration of CRVS and National Identity Management Systems
• Importance of CRVS and Integration of CRVS & Identity Management Systems • Introduction of cases from Botswana, Norway and Estonia • Introduction of WBG 2016-2030 CRVS Action Plan and interlinked CRVS&ID-M initiatives • WBG signed MOU with the Korean institutions, including the Korea Legislation Research Institute, the Korea National IT Industry Promotion Agency and Korea Statistics Promotion Institute in January 2017 • Emphasis on a single functioning national coordinating mechanism, completed a comprehensive assessment, costed investment case/strategic plan, prioritizing and sequencing of activities, legislation, financial commitment for success of CRVS
Mauritius Integrated Civil Registration and Identity Management System
• Introduction of CRVS during the Dutch, French and British period • Introduction of Information Highway System; Data Sharing among Ministries and Departments could reduce duplication of data, cost and enhance efficiency. • A unique lifetime ID number as a universal means of identification of people and enables tracking from birth to death easier. • Access to system via wireless network and mobile devices reduces capital expenditure on infrastructure development.

Regarding the question on the fingerprint enrolment of new residents, William Mario Ayelou answered that if someone loses his or her ID card, he or she should start from the beginning of registration procedure of identification and all residents in Mauritius, including both nationals and foreigner will be provided with a new ID number.

4.3 Country Presentation of Indonesia

Table V-8 | Session 3: Main Contents

Plan to Link Birth Registration and Identity Management
• Introduction of Governance System and CRVS in Indonesia • Birth Registration Problems: Unregistered Marriage, Neglected Child, Single Parent, Remote Area and Cultural Handicap • Simplification of Birth Registration enhances Coverage of Birth Certificate Ownership(31.25% as of 2014, 61.62% as of 2015, 74.29% as of and 75.39% as of May, 2017) • For integration of birth and ID card management, Indonesia carries forward an integrated management among hospital, school, local institution and government. • Introduction of efforts to accelerate birth certificate ownership, including the Strategic Plan 2011 'All Child must be registered'. • Expand public services for all communities without discrimination, through providing service package including birth certificate, family card, children ID card, health assurance card, death certificate, citizen ID card • Innovation in Civil Registration services using current IT and mobile registration • Introduction of CRVS National Strategic Plan • Demonstration of Data Access Monitoring utilized population data by 208 agencies
Plan to Improve the Production of Vital Statistics
• Introduction of the current challenge of CRVS: large population, large archipelago, new democracy and ongoing decentralization, etc. • Introduction of History of Vital Statistics • Introduction of pros and cons of CRVS for Vital Statistics • Introduction of Barriers in Developing CRVS • Introduction of Plan 2020 Population Census
Briefing: The finding of Knowledge Sharing Program Study
• Recommendation for improving Indonesia's CRVS: CRVS Governance Improvement (Improving the capacity of administers, Improving transparency and Support local government in remote regions): Policy Coherence (More enhanced shared recognition on CRVS among ministries): Statistical System and Data Utilization (Integrated information sharing system among organizations rather than separate database and Organization and human resources in charge of data sharing system for effective data management): Awareness Promotion (Campaigns on the value and right on CRVS among Indonesian people, including population in the poorest regions and remote areas)

Regarding the question on the data sharing between SIAK and BPS, Indonesian delegation answered that MoHA acquires data from SIAK based on two big plans: '2020 population censuses and 'One data initiative.' Also, the MoHA delegation mentioned that they operate population census for international comparison, and that they will make a consolidated one DB and share it with other ministries, and that they are in the progress of making better and qualified statistical indicators with standardized data.

For the question about the birth registration of the child from a single parent family, the delegation answered that they will issue a birth registration certificate with the name of the single parent under the special regulation for single parent family (regulation no. 9 in 2016). Under the regulation, they encourage birth registration for babies who don't have registration certificates and the regulation provides an institutional base for neglected children to use public services since the regulation allows them to register without writing the information of both parents or place of birth.

4.4 Country Presentation of Lao PDR

Table Ⅴ-9 | Session 4: Main Contents

Plan to Improve Civil Registration Coverage
• Introduction of Civil Information Management System and laws on CRVS • Introduction of three main projects: The implementation of CRVS Strategic Plan, Amendment of Law on Family Registration (2009 amended); and Setup the Database for the registration • Challenges on CRVS implementation: Difficulties in coordination and collaboration with relevant ministries regarding to CRVS matters, Comprehensive legislations for CRVS need to be updated, No database for births, deaths, and other vital event registration, The capacity and experience of staffs are limited, Dissemination on CRVS matters does not reach at the rural and remote areas, Provision of budget, vehicles, and equipment for CRVS does not fulfill the needs • Lao PDR will focus on the implementation of three main projects, disseminate on the importance of registration and provide CRVS training for the staff at the central and local level.
Plan to Improve the Production of Vital Statistics
• The Strategy for the Sustainable development of National Statistics System 2016-2025 and Vision by 20301) Vision: Strengthen the development of the National Statistical System to attain the international Standard by 2020 while maintaining coherence with the Party and the Government's polices to assure good national statistics.; Increase official statistics information with high quality within overall areas to supply for creation and evaluation social-economic development plan as target for graduation from Least Developed Country (LDC) and achieve Sustainable Development Goals and integrated national and international database.; Assure official statistics dissemination and exchange with by 2030.2) Mission: The mission of statistics system of Lao PDR is to strengthen national statistics system, and assure international standard quality statistic production so that every citizen in Laos is included in the database via the process of data collection survey and administrative record system based on the slogan "Every citizen has to be counted" and "No one is left behind!". • Efforts for the Vital Statistics, one of prioritized work of LSB: Establishment of Citizen Management Steering Committee (CMSC 2013), Cooperation and Support with related organizations, etc.
Briefing: The finding of Knowledge Sharing Program Study
• Recommendation for improving Lao PDR's CRVS: Strengthening of CMCC and MOHA's authority related to CRVS: New Organization, the Administrative Informatization Promotion Committee, on a presidential agenda: Information Sharing Legislation that covers essential matters for information sharing and certification, personal information protection and information security for a stable CMIS operation

For the questions about the birth registration, generation of ID and connection with family book, the delegation from Indonesia responded the process; after a birth, the representative of the family gets a signature from the head of a village about the birth, and he or she visits the civil office with that confirmation, and after the birth registration at the civil office, they confirm a family registration. After the age of 15, one could get an ID card and it is based on family registration. To get an ID card, one needs a registration form and family registration document; and these processes are done through a computer system.

Indonesian delegation mentioned the family card and asked the merits of family relationship registration in Lao PDR in comparison with the family card—the difficulty of reporting deaths, efforts to raise the registration rate, and whether there any incentives which allow citizens to voluntarily register births and deaths. For these questions, Dr. HunYeong Kwon from Korea University explained that currently Lao PDR is making CMIS, which is based on the family relationship, not residence registration, and this is the modernized system of family book system, with emphasizing that the system of Lao PDR is different from Korea even though procedure and legislation related with family relationship of Lao PDR are similar to those of Korea. In addition, the delegation from Lao PDR mentioned the difficulty of encouraging voluntary birth and death registration, even though people should register within 30 days after birth under the regulation; only people who have some issues such as inheritance register voluntarily and those who without any issues do not.

Consequently, Dr. Kwon emphasized that information collected from local level should be transmitted to the central government. Also, Dr. Samuel Mills from WBG mentioned his expectation of simplification of the registration process due to the new law, which allows direct registration at the hospital, in compassion to the parent(s) visiting local office for birth registration after a baby is born.

Indonesian delegation asked for opinions on the strategy to encourage citizens to improve Indonesian family card system, mentioning that Indonesia, Lao PDR and Myanmar are endeavouring to raise birth registration rate as the members of 2020 regular commitment. For this request, Mr. William Mario Ayelou from Mauritius explained the case Mauritius; Mauritius encourages voluntary birth registration by providing incentives for parents and bank account for baby right after the registration of ID number which given at the birth.

4.5 Country Presentation of Myanmar

Table V-10 | Session 5: Main Contents

Plan to Improve Birth Registration
• Introduction of Household Registration System and Birth & Death Registration • Introduction of Coordination Committee on Birth and Death Registration • Efforts of Myanmar Government to raise the rate of birth registration
Plan to Link Birth Registration and Identity Management
• Introduction of Types of Citizen and Identification Cards • Introduction of applicable laws on identity card • Since the paper-based Myanmar National Identity Card could be duplicated easily, MoLIP is trying to replace the current system with digital archiving system.
Review of the Existing Processes for the Production of Vital Statistics
• Introduction of History of VRS in Myanmar started from the 19th Century • Introduction of Civil Registration and Vital Statistics (related documents, E-platform System, Data Dissemination System, etc.) • Coordination among the CRVS related organizations(Coordinating Committee on Birth and Death Registration, Inter Agency Working Group, Social and Vital Cluster), Increase communication between stakeholders, discuss sharing of data between providers and review vital statistics manually. • Key Challenges in Myanmar: Death registration coverage is quite low, especially in rural areas, Low community awareness, No law enforcement to register births and deaths, Weak in individual level data validation, Low % of usable Causes of Death data • For improving CRVS in Myanmar, they need to improve public awareness of benefits from and responsibilities towards registration, internet connectivity, conduct regular VR training for health staff, train all health workers in communities in conducting verbal autopsy for cause of death, and medical doctors and coders (SCO staff) on the principles of ICE for coding causes of death.
Briefing: The finding of Knowledge Sharing Program Study
• Recommendation for improving Myanmar's CRVS: Minimization of the side effects of introducing the identification system through the national ID number(Introduction of national ID system warrants the caution for privacy infringement resulting from leakage of the RRN and other kinds of abuses; Lowering the risk of side effects of a national ID number relieves the resistance from ethnic groups in Myanmar out of concern over excessive government control): Reinforcement of personnel for computerization and operation of the system(The task of building and computerizing the key database can be achieved with human resources who has an expertise of statistics and computing programs; The CSO has presented as its main objective the reinforcement of Myanmar's statistical system and now considers the training of its staff on basic statistics and software programs including STATA, SPSS, CS Pro, and GMS to be extremely important)

Regarding the question of the future plans of VS for developing Myanmar's VS, a CSO official responded that they are aware of the importance of training to strengthen statistical capacity and that they are trying to establish a system for strengthening the statistics sector and publish related reports.

For the questions about the contents of statistical data usage and whether the system could spread throughout the country, the delegation from Myanmar answered that there are publicly available data on the statistics usage, but it is still in its early stage.

Regarding the question about the timing of issuing ID card, the delegation responded that the ID number is not given at birth due to legal regulations, and since information such as the address can be changed until the 18th birthday after receiving the ID number at 10 years old, people should re-register at the age of 18. Also, they explained that the reason for requiring a separate resident registration document (a confirmation via the village administrator) to get an ID card is because the immigration office does not know the resident's information accurately.

For the questions about the method of generating statistics such as fatality, mortality population census, the delegation responded that the Department of Population uses its own CRVS statistics index.

4.6 Vital Statistics in the Pacific

Table V-11 | Session 6: Main Contents

Plan to Improve Vital Statistics in the Pacific
• The Pacific Community (SPC) coordinates the implementation of a regional CRVS program with the support of a group of partners (the Brisbane Accord Group). • The CRVS program is implemented through the Pacific Vital Statistics Action Plan (PVSAP) which sits under the Ten Year Pacific Statistics Strategy, 2011 - 2020 with 15 Pacific Island countries • In regards to VS, the regional program currently focuses on two specific areas: Building the capacity of countries in the analysis of vital event data (birth, death and cause of death data), and the publication of VS reports (primarily through routine training); Supporting countries to improve the quality of their collections, and to analyze and monitor the performance of their CR systems (record linkage of census and CR collections) • Common challenges are incomplete data sets (especially for events of death and causes of death) and poor data capturing practices. To solve those problems SPC is trying to find the way to support the stakeholders by identifying specific areas of weakness and to recommend the countries to use CR records as the primary source of vital statistics in the long run. • Primary benefits of civil registration systems as sources vital statistics are in their: (i) Cost effectiveness (ii) timeliness (due to their continuous nature) (iii) Ability to derive small area data

In this session, Dr. Seung Woo Lee from the Korea Statistics Promotion Institute pointed out the necessity to analyze the cause of the differences in the level of completion of VS statistics among the Pacific countries. He emphasized the importance of completeness of VS statistics and the effort to secure accuracy of VS statistics after acquiring complete data; some countries could use indirect estimation, depending on the situation. In addition, he pointed out that computerization could not increase the actual reporting rate itself and mentioned that they need to consider other methods. He mentioned that the Korean Government regulated, fined, and educated, in order to raise the birth registration rate in the past, but those ways did prove to be effective. The most effective method was the introduction of the National Health Insurance in 1989; after its introduction, the birth registration rate increased because people did not wanted to miss the benefits of social insurance. He explained that there is a necessity of an incentive system at the pan-government level beyond the CRVS system. Lastly, he highlighted accurate estimation of VS, although many countries are discussing the developing strategies on the early stage and the discussion usually focused on expanding coverage.

4.7 Field-Trip

Table V-12 | National Computing and Information Service (NCIS)

Korea's e-government system
• Speaker: Minkyoung Kwon, National Computing and Information Service • NCIS operates e-Government Systems in integrated manner and this is the World's 1st Pan-Governmental Data Center • Convenient e-government : NCIS house-designed comprehensive automated system operation management tool, nTOPS to efficiently manage the massive volume of information resources. : Supports exclusive information communication network service for government, K-net which provides prompt, reliable and quality service to more than 700 government institutes. • Reliability e-government : The comprehensive cyber security management system, e-ANSIS thoroughly defenses e-government systems over any type of cyber attacking attempt such as hacking, DDoS and APT for NCIS to be able to provide seamless safe e-government services. : NCIS prevents all the system from being attacked in cyber space and from various kinds of incidents by practicing nSIMS, a Big Data based Log Analysis System, through collecting all the logs created from the whole system and analyzing them in real time • Efficient e-government : Integrates Information Resource and co-uses them that this practice has increased efficiency of government operation by cutting down the budget more than 30% : NCIS exercises efficient operation and green IT by proving G-cloud Service which is an exclusive Government private cloud platform.

Table V-13 | Yuseong District Office

Convenient passport issuance service
• Speaker: Yujin Kim, Yuseong District Office • Yuseong District Office is a local government unit that has jurisdiction over Yuseong-gu in Daejeon. It overseas work delegated by the central government and Daejeon Metropolital City while also managing its own administrative and civil affairs • Changed the name of Citizen's Service Center to Citizen's Passport Administration to provide various convenient administrative services to residents • Main Services related with CRVS: Certified copy of family register, Family Relation Certificate, Passport issuance

Ⅵ. Conclusions

This research project aimed to derive policy recommendations on CRVS for the partner countries through in-depth analysis of the institutions of South Korea's CRVS as an advanced case of system operation and management. Therefore, this research looked into the historical changes, current situation, related experiences of system development and operation, and success factors of South Korea's CRVS related systems. Based on the analysis, we tried to make suggestions for the development of systems and successful settlement of CRVS by overviewing development history, current situation and challenges of the civil registration, family relations registration system, and vital statistics system of our partner countries, Indonesia, Lao PDR and Myanmar.

The research results can be summarized as follows. First, it was confirmed that to introduce or strengthen the CRVS system, CRVS system should be built from a path dependency perspective based on the understanding of a country's political, economic, social and cultural situation as well as the institutional situation. These insights have been derived from in-depth research on the history and implementation of development of South Korea's civil registration and vital statistics. Since South Korea's CRVS related institutional success came from its special features according to specific periodical situations, CRVS related environment and situation of the partner countries must have different paths of implementations.

However, analysis of the initial steps of South Korea's CRVS system implementation and related legislations, institutions, obstructive and success points was meaningful to set a direction as a guideline for each partner country's policy implications. Challenges confronted from the CRVS system development process and operation and the following risk management and success factors were helpful for suggesting institution development and implementation methods suitable for the partner country's characteristics. South Korea's CRVS system establishment case is known as a successful case worldwide, which was possible with some features such as the e-government establishment, strong leadership and practical support for administration information computerization and communization, cooperation and connection among private sector, government supported systems, and human network, flexible financial

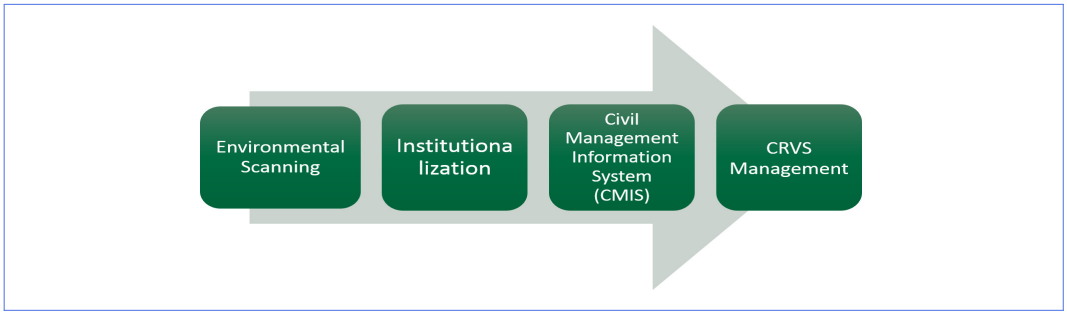
support based on the political leader's decision and establishment of a system for close cooperation with related organization. Likewise, since the CRVS system requires cooperation with diverse governmental departments, it is necessary to have strategies to cooperate with related departments or organizations, political leadership, capacity building of human resource and experts along with financial support and material/human resources for IT system development.

The comparative analysis between South Korea and partner countries has been done by analyzing the partner country's civil registration environment and situation and by identifying the strong and weak points. This was done by reviewing general information and CRVS related systems, governance of the CRVS system, cooperation with organizations, current situation of computerization, and analysis of the statistical capacity for long-term operation of the civil registration system.

We compared and analyzed the CRVS related environments and situations of each country based on the experience of South Korea and made policy implications as follows:. In the case of Myanmar, CRVS related legislation and institutional regulations appears to be highly necessary. In addition, system operation such as organization operation for inter-departmental cooperation, budget and investment plans related to the system, DB establishment and efficient system operation through centralized system has been needed.

Figure Ⅵ-1 reveals the implications summarized in steps. A review of CRVS institution related environment scanning needs to be met, including support from political leadership, comprehensive and strategic plan, and human/financial network. The second step is the legislation enactment and institutionalization stage. In this stage, roles and responsibility of the main and related department should be designated through enacting legislation covering overall duties of CRVS, legal regulation to impose national ID numbers for each birth and regulations to connect national ID program and service to enhance the civil registration coverage are crucial. The third step is the CMIS establishment stage which is processed as follows: 'digital process establishment of each department à national database establishment for sharing information of inter-departmental duties à introduction of e-government for each department à connection and distribution of e-government'. Myanmar has been moving on from the first step, so it needs system standardization and interoperability in the digital process of each departments to minimize error when moving to the next step. In addition, some departments such as the Ministry of Labor, Immigration and Population is putting effort to digitalize the CRVS related documents. Paper and digital documents should be saved together as the network connecting the whole government is not established yet and thus detailed process regarding transfer and savings of documents among departments during the transition period should be prepared.

Figure Ⅵ-1 | Summary of the Myanmar Policy Implication

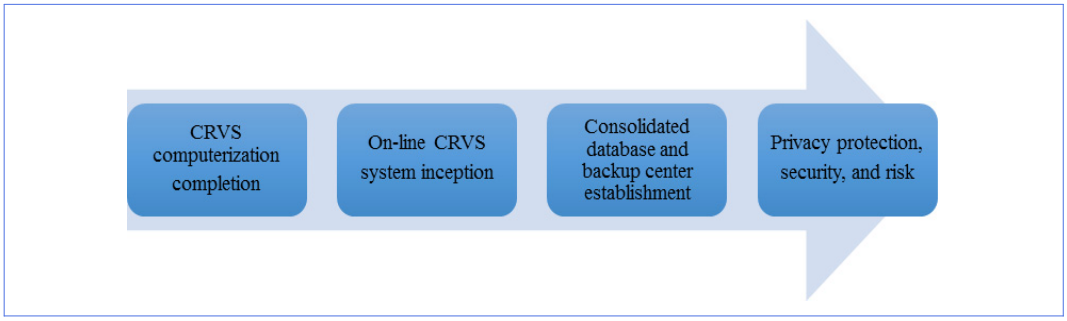


In the case of Indonesia, we emphasized that legislation revision and governance improvement, policy coherence for CRVS integration, statistical capacity improvement, raising awareness toward CRVS as a right to access services, efficient ODA should be put into effort for the simplification of the administration system. Based on the CRVS related legislation and regulation settlement, system management process such as organization management, system related budget and investment plans should be in progress. In addition, we suggested the establishment of a pan-government computerization and information agency as well as develop mobile based civil registration service.

Reflecting the South Korean experience along with the projects led by Indonesian government, the Indonesian information system should be established by the following steps: First is the completion of computerizing of the civil registration stage which will need digitalization of the civil registration data recorded manually. The second stage is introducing online civil registration system and the third stage is establishing comprehensive database and backup center. Due to the development of mobile communications network and personal internet usage, introduction of the online and mobile civil registration system is under progress but establishment of the comprehensive civil registration database and backup center should be realized simultaneously. As a result, we suggest to establish a data management and sharing system and finally move on to the privacy protection and security, risk management stage.

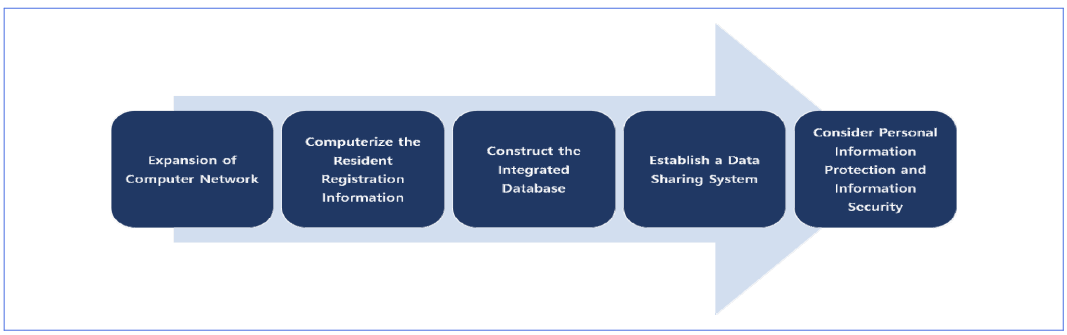
Lao PDR should first establish a clear governance system by enhancing the capacity of departments in charge of CRVS and status of organizations. In addition, systematical legislation related to CRVS as an institutional ground should be introduced. It is expected to enable information sharing, formation of information infrastructure, educational training, and format standardization when the system is built based on the policy implementation with the suggestions above.

Figure Ⅵ-2 | Summary of the Indonesia Policy Implication



Establishment of information system for CRVS system will be processed as the following steps (Figure Ⅵ-3): First is the computer network distribution stage which needs to provide fast and universal services by extending the computer network distribution for smooth information sharing and speedy handling of civil complaints. Especially in the case of Lao PDR, network extension in areas other than urban areas is urgent. Second is the computerization of civil registration information stage where the civil registration information and documents formerly operated via offline should be computerized after the network base is prepared. Third is the establishment of database stage and the fourth is the data sharing system preparation stage where comprehensive database should be established and fast as well as secure sharing system should be made to enable departments to use the information. Fifth is the stage considering personal information and information security of each stage which should always reflect the personal information and privacy problems as well as the information security measures in the process of each settlements of stages.

Figure Ⅵ-3 | Summary of the Lao PDR Policy Implication



CRVS is an essential part for policy formulation and operation in diverse sectors. A country should collect and manage citizen's accurate CRVS information in a timely manner to maintain social order, witness economic growth and stabilize politics. This research project drew practical and persuasive policy implications based on the success factors of diverse policies of South

Korea through comparative in-depth analysis of the South Korean CRVS system's historical experience and developmental phase. While the research project suggests tailored development and application methods suitable for each partner country, the project also suggests a basis to establish plans for sharing and cooperation regarding policy making with the partner countries such as hosting a workshop and inviting experts in charge of the policies. It is expected that the roadmap presented by this project will lead to fruitful results with strong political wills and efforts of the partner country's governments and diverse stakeholders from domestic and international sectors.

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