

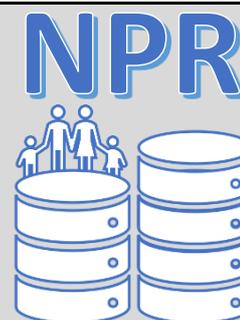
CONCEPT NOTE

On

NATIONAL POPULATION REGISTER (NPR)

By

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Background

Bangladesh is advancing so fast in generation of data and usage of information technology for the last couple of years. A wide range of ministries, departments, agencies and private service providers create and manage a variety of datasets and mapping capacities for their specific needs. The non-government and development partners are also doing the same type of data management for their own. Government is also creating huge volume of data through different surveys, census and administrative activities across the entire system. However, these information and dataset are managed highly fragmented way and are not managed or shared with other actors for further usage. The interoperability of these data can yield a high level of return in the form of minimizing cost, time used and maximizing utility of the government. The development of National Population Register (NPR) can be the most efficient, cost effective and instantaneous updated centralized database and data management system to secure the benefits of information technology. NPR can streamline the fragmented data management system to a coordinated data management that can help statistical as well as administrative services avoiding data redundancy.

What is the National Population Register (NPR)

A population register is defined as an individualized data collection system, that is, a mechanism of continuous recording, and/or of coordinated linkage of selected information of each member of the resident population of a country in such a way to provide the up-to-date information concerning the size and characteristics of that population at selected time intervals (United Nations, 1969).

It is generally prepared for the usual resident at any level with geo-reference codes. A usual resident is defined for NPR as a person (both citizens and foreign nationals) who have resided in a local area for the past 6 months or more or a person who intends to reside in that area for the next 6 months or more.

A population register requires recording and updating data about the members of the resident population. The methods and sources of updating should cover the changes so that the characteristics of individuals in the register remain current. The register must have a legal basis to develop, maintain and update. Nobody should be deleted from the register once recorded but the status be updated from time to time.

Brief History of National Population Register

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Population Registers have a very long historical background. The earliest records of households and persons is the register prepared by the Han Dynasty, China in the second century B.C. Japan adopted such a register in the seventeenth century during the Taika restoration. In Europe, the earliest example is the Parish register of Sweden and Finland. Hungary introduces the population register in the eighteenth century. By the twentieth century, Belgium, Chile, China, Czechoslovakia, Finland, Germany, Hungary, Italy, Japan, Korea, Liechtenstein, Luxembourg, Netherlands, the Ryukyu Islands, Spain, Sweden and Switzerland started to developed such registers (United Nations, 1969).

Since the 1960s, registers have normally been kept in an electronic format, at the local and/or national level and during the 1990s and onwards, most of the European countries developed some sort of population register, local or central or both, and assigned some kind of personal identification numbers. Recently some developing countries have also introduced the same kind of registers for example India has already adopted the National Population Register in 2011.

Usage of National Population Registers

There is mainly two-dimensional usage of a National Population Register one is administrative and another is statistical. The United Nations (1969) examined 65 registers globally and identified 10 (ten) specific categories of uses. These are:

A. Statistical:

- a. Population Estimation
- b. Generation of Internal Migration Statistics
- c. Generation of International Migration Statistics
- d. Planning and Designing Population Census
- e. Validating results of Population Census
- f. Determining and updating the sampling frame for the sample survey
- g. Genetics Studies for generating statistics

B. Administrative:

- h. Identification of an Individual
- i. Electoral Roll
- j. Others

Some countries (Netherlands, Norway, Sweden etc.) have removed the need for decennial censuses by adopting a system whereby population statistics are continuously updated based on information recorded in their respective NPRs. Each person is assigned a unique identifying number which enables information across different registers (i.e. birth, death, marriage etc.) to be linked and for central records to be updated. The linking of records can be a great help in producing population statistics. The registers can also be used for longitudinal data that follows an individual across the life course.

Besides, the recent versions of registers also include vital statistics, social security, health, judicial statistics, educational statistics, statistics for household income and consumption, labour statistics, income tax statistics and housing statistics (Verhoef and Van De Kaa, 1987).

Objectives of a National Population Register

The objective of the NPR is to create a comprehensive identity database of every usual resident in the country. The database contains demographic as well as biometric particulars.

The population registers will be able to guide the government to communicate with or about individual citizen. To this end, the register should contain data about every citizen; also, these data should be sufficient to identify and locate every citizen. In other words, data on name and address are indispensable.

As a result, NPR will facilitate the administrative as well as statistical work of the National Statistical Office with minimum efforts, time and costs.

To summarize:

- Implementing integrated central database for population statistics
- Creating central repository of Biometric samples, reducing duplicity and security threats
- Single window for personal identity validation for all government and private agencies
- Ensuring proper distribution of social services and safety net programmes in an efficient way
- Demographic analysis and estimation for planning

Information Constitute a Population Register

The basic data recorded by population registers are births, deaths, marriages, nationality, migration etc. Population registers may also cover family relationships (i.e. parents, spouses) and dwellings, allowing data on individuals to be linked by family and household. Some Nordic countries also include information on health, educational attainment, employment and income within the population register. Moreover, to identify an individual uniquely biometric data are also recorded in the population register. Hence, data that are included in the population register can be classified mainly into two types e.g. demographic and biometric information.

Demographic Particulars: The following demographic details required for every usual resident are:

- Name of person
- NID/Passport/Birth Registration/Mobile number
- Contact information (phone number, email address)
- Emergency contact (name, relation, phone number)
- Relationship with head of household
- Father's name
- Mother's name
- Spouse's name (if married)
- Members living outside household (Abroad, other location within country)
- Sex
- Date of Birth
- Marital status

- Place of birth
- Nationality (as declared)
- Religion
- Blood group
- Residence Status (Resident, deceased, emigrated, no permanent address, disappeared etc)
- Present address of usual residence
- Type of Household
- Household access and to drinking water, sanitation, electricity etc.
- Duration of stay at present address
- Previous Place of Residence
- Permanent residential address
- Educational qualification
- Occupation/Activity
- Employment details (Employer's name, address, Nature of Employment, contact information if applicable)
- Citizenship
- Country of Immigration
- Disability status
- Identity of Other Household Members (NID, Birth Certificate etc. for Family tree)
- Chronic Diseases
- Genetic diseases
- Health history

Biometric Information that might be included

- Fingerprints of the individuals (10 Fingers for 15 years and above individual)
- Face recognition (High Resolution Photo)
- Irish scan (both eyes)

Population Register Vs. Civil Registration

Population registers are frequently confused with registers kept by agencies responsible for civil registration. However, civil registration differs from population registration in that the former is usually confined to drawn up for important demographic events namely births, deaths, marriages, and divorces. Although this may constitute an important component in designing and updating a population register, it is certainly not enough to constitute a comprehensive NPR. Setting up and maintaining a population register requires at least three additional efforts.

First of all, the certificates containing the separate event (births, marriages, etc.) for one person must be brought together under a common denominator, namely, the person concerned.

Second, since the population register relates to every person living in a certain area or a country, data on changes of address must also be included.

Third, an initial registration of the population residing in the area must take place, generally through a census (Verhoef and Van De Kaa, 1987).

Population register systems thus also provide migration statistics, as changes of address are included among the events that are described and processed.

National Population Register Vs. Population Census

The first population register in most of the countries was established based on a census (Poulain, Herm and Translated by Roger Depledge, «Le registre de population centralisé, 2013; Verhoef and Van De Kaa, 1987). They range from Belgium in 1846 to Austria in 2001. Since continuous updating of the register raises reliability problems due to the poor recording of changes of address, the census was used to update the register periodically. In practice, when registers were handwritten, new copies were made after each census, a task also made necessary by the arrival of new persons and by the changes in existing households.

Following register computerization and improvements in their reliability, the use of censuses – whose reliability is, by contrast, decreasing – to update the registers has declined. Indeed, in many countries, the roles have been reversed and the population register is now used to help run the census.

Since the 1960s, when population registers first used a personal identification number, some have argued that population registers should replace traditional censuses. During the 2010-2011 census wave, the extent to which population registers were used to organize censuses in Europe varied from country to country (Table 1). In the Nordic countries, the census was based solely on data taken from the central population register and other administrative databases. In the Netherlands and Belgium, the situation was similar, but the absence of certain data made it necessary to use existing statistical surveys or new ones held specifically for this census. In many countries, the population was enumerated and demographic data were collected based on the central population register. A census questionnaire containing these pre-encoded demographic data was used to collect all the non-demographic information.

Table 1.0 Forms of National population register used for the 2010-2011 censuses by country

Sl No.	The link between register and census	Countries
1	The census is taken entirely from administrative databases (central population register and other registers)	Austria, Denmark, Finland, Iceland, Norway, Sweden
2	The census is taken partly from administrative databases (central population register) and existing or ad hoc statistical	Belgium, Germany, Netherlands, Slovenia
3	The census uses only the central population register for the population count	Czech Republic, Estonia, Italy, Latvia, Lithuania, Poland, Spain, Switzerland
4	No link between the central population register and the census	Bulgaria, Hungary, Luxembourg, Romania, Slovakia and others

Indian Experience of National Population Register

India has adopted the NPR in 2011 aiming at creating a comprehensive database of all usual residents in India with UID numbers. UID will help tremendously in facilitating e-gov preventing duplication of benefits, leakage of resource and simplifying identification of beneficiaries. Indian NPR has two major components one is digitization of demographic data captured during house listing operation in 2010 census and collection of biometric data (photo, 10 fingerprints, iris of both eyes) for age 5+. Then Database has been sent to Unique Identification Authority of India (UIDAI) for de-duplication and allotment of UID numbers. Primarily, the exercise of developing NPR was done in 19 states of two union territories. In 2021, India is going to update the database of the National Population Register mobile application, as part of the 2021 Census of India. Along with the options for the enumerator, the application also provides the option for individuals to study the collected data of a household and certify it using a signature. It is possible that as part of the process, this certification might be sought from each member of the household. The NPR app's collection of identity details like Aadhaar, voter ID, driver's license, PAN, and mobile number are linked with the database. Other institutions like Election Commission of India, Ministry of Road Transport and Highways, Central Board of Direct Taxes are also linking Aadhaar with respective identity cards under them.

National Population Register in Bangladesh

Statistical activities in Bangladesh are entrusted to the Bangladesh Bureau of Statistics (BBS) under Statistics and Informatics Division (SID), Ministry of Planning by the Statistics Act, 2013. The function of developing and updating the National Population Register (NPR) is allocated to BBS by the provision of section 6 (p)(Government of Bangladesh, 2013). The Allocation of Business among the different ministries and divisions of government also entails developing NPR under the guidance of the Statistics and Informatics Division (Government of Bangladesh, 2017). Moreover, The National Strategy for the Development of Statistics (NSDS), approved by the Cabinet, set out the goal of developing NPR by census wing, BBS (BBS, 2013). Hence, the legal basis of the NPR is clearly mentioned in the Act, administrative document (Allocation of Business) and strategic document of the government.

Initiatives for NPR in Bangladesh

The history of the development of the National Population Register in Bangladesh is at the very initial stage. The first-ever initiative was taken by Prime Minister Office (PMO), A2i Project and then Statistics Division in 2010. A kick-off meeting was held in PMO with the Chair of then Principal Secretary Mr. Md Abdul Karim on 29 June 2010. Representatives and Secretaries from the Ministry of Health and Family Welfare, Planning Division, Election Commission Secretariat, Ministry of Science and Information Technology, Statistics Division and Director Generals of PMO were present in the meeting. It was decided in the meeting that BBS will develop a National Population Register based on Population Census data and all other databases e.g. National Identity database created by Election Commission will be integrated with that register.

A Memorandum of Understanding (MoU) between BBS and A2i was signed on 15 November 2010 with the estimated cost of Taka 22.00 lakh to explore the problem and prospects of developing NPR in Bangladesh. Later on, another MoU was signed between the same parties

on 21 May 2013 to strengthen the informatics dimension of BBS and SID which also include a specific purpose of developing NPR. At that point, BBS took a programme in the name of 'Test phase for National Population Register' at the cost of Taka 220.39 lakh. Under that programme, two piloting of NPR were done in Manikganj Sadar and Nagarpur, Tangail respectively.

The Development of Bangladesh Poverty Database Project, renamed National Household Database (NHD) Project later, was also taken to implement the development initiative of NPR in Bangladesh. NHD project conducted the country-wide field operations and collected household-based data linkage with National ID and Birth registration of the individuals. The processing of data was done accordingly and a database (NHD-MIS) has already been prepared which has been linked to the database of the Ministry of Disaster Management and Relief (ModMR). Hence, it is high time to replicate the development of NPR at all level after piloting exercise.

Methodology of Developing National Population Register:

The methodology and processes vary from country to country based on the nature of record keeping. Most of the countries adopted census data as a baseline database to construct the first National Population Register (Poulain, Herm and Translated by Roger Depledge, «Le registre de population centralisé, 2013). Bangladesh also plans the same for this purpose. However, the database that is planned to use is more than the census database. National Household database that contains socio-economic data of population of the country by households as well as data for ascertaining economic status of the household for proper identification of target households to deliver safety-net services will be used as a baseline data. Then all other databases maintained by different ministries, departments, agencies and service providers will be integrated to make a central data repository. The National Population Register will serve as a nexus between different databases and accumulate all sorts of data in one place to be monitored by government for administrative and statistical purposes.

Hence, the processes involved in the development of National Population Registers are as follows:

1. Using NHD-MIS as a baseline database
2. Integration of different databases maintained by ministries, divisions, departments, different service providers and agencies
3. Analysis of data gap for National Population Register
4. Demographic data collection from households to fulfill the data gap
5. Collection of Biometric Data
6. Development of infrastructure for future automatic update

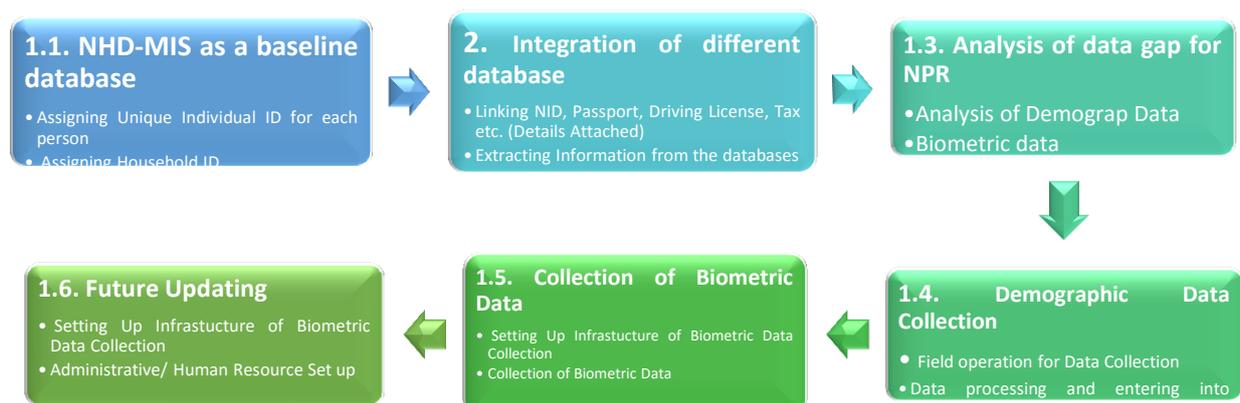
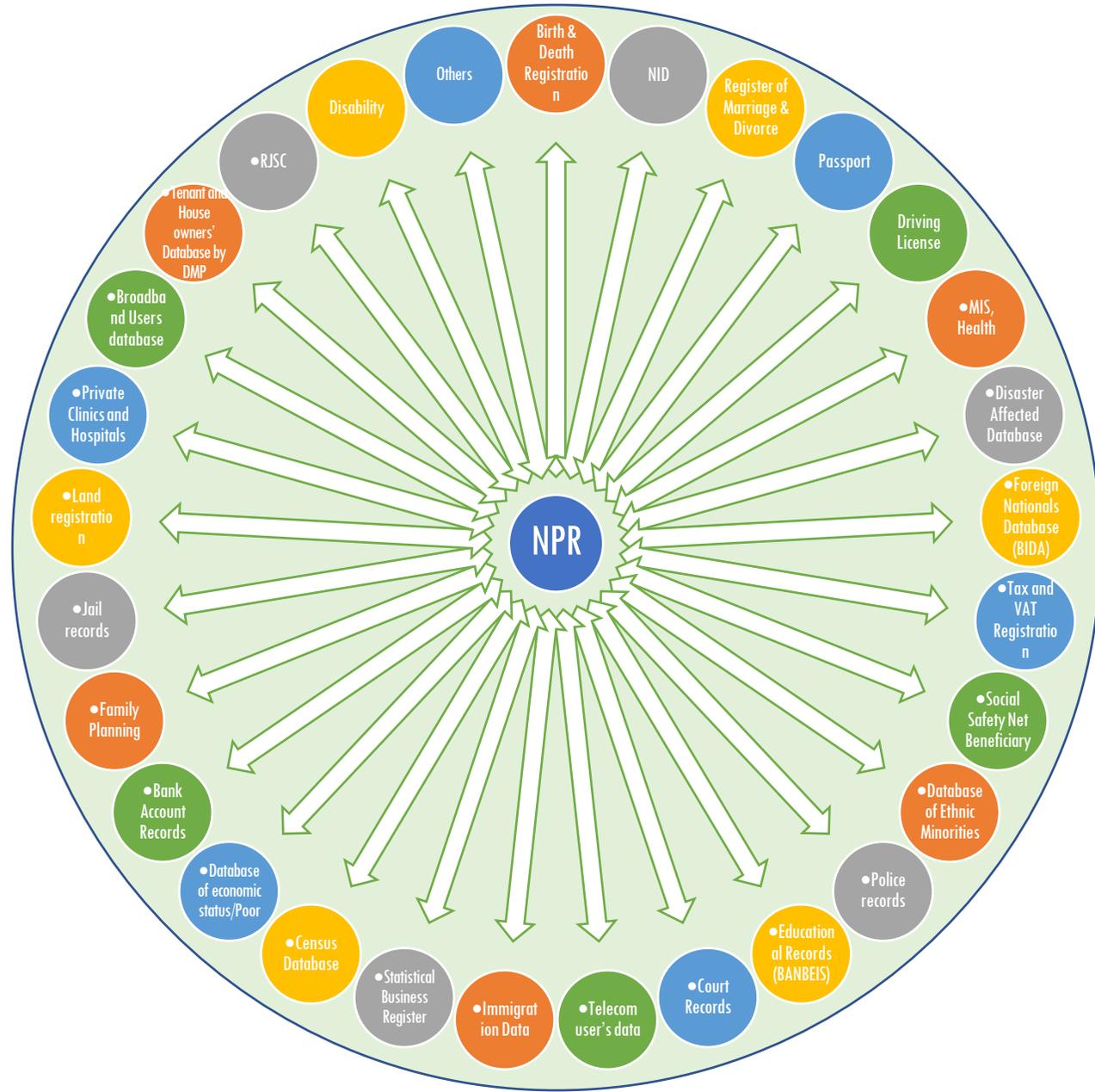


Fig-01: Process Involved in Preparation of NPR

Registers and Data Repository to be Connected with NPR

In order to provide ready to use socio-economic statistics an inter-connected and integrated NPR is mandatory. Besides, to facilitate register-based census operation and smooth civil registration an ideal NPR database must have link to the following databases:

- Registration of New Entries:
 - Birth Registration
 - Registration of Immigrations
- Registration of Exits:
 - Death Registration and
 - Registration of Emigrations
- National ID of election commission
- Marriage and Divorce Register
- Register of Passport
- Driving License
- MIS, Health
- Disaster Affected Database
- Database of Refugees
- Foreign Nationals Database (BIDA)
- Tax and VAT Registration
- Social Safety Net Beneficiary
- Database of Ethnic Minorities
- Police records
- Educational Records (BANBEIS)
- Records of Court
- Telecom user's data
- Immigration Data
- Statistical Business Register
- Census Databases (Population Census, Economic Census and Agriculture Census etc.)
- Database of economic status
- Bank Account Records
- Family Planning Database
- RJSC
- Disability Database
- Jail records
- Land registration
- Private Clinics and Hospitals
- Broadband Users database
- Tenant and House owners' Database by DMP
- Others (if any)



Demographic Data Collection for NPR

After determining the data gap, the next step of developing the NPR involves collection of demographic data maintaining international standards and guidelines. Both traditional ICR questionnaire or electronic data collection can be used in the process. However, for simplicity of the process and minimizing cost, ICR infrastructure developed by Population and Housing Census can be utilized here and only ICR (intelligent Character Recognition, OMR (Optical Mark Reader) and OBR (Optical Barcode Recognition) based data collection method can be used. The data collection, processing, data editing and database creation pass the following phases:

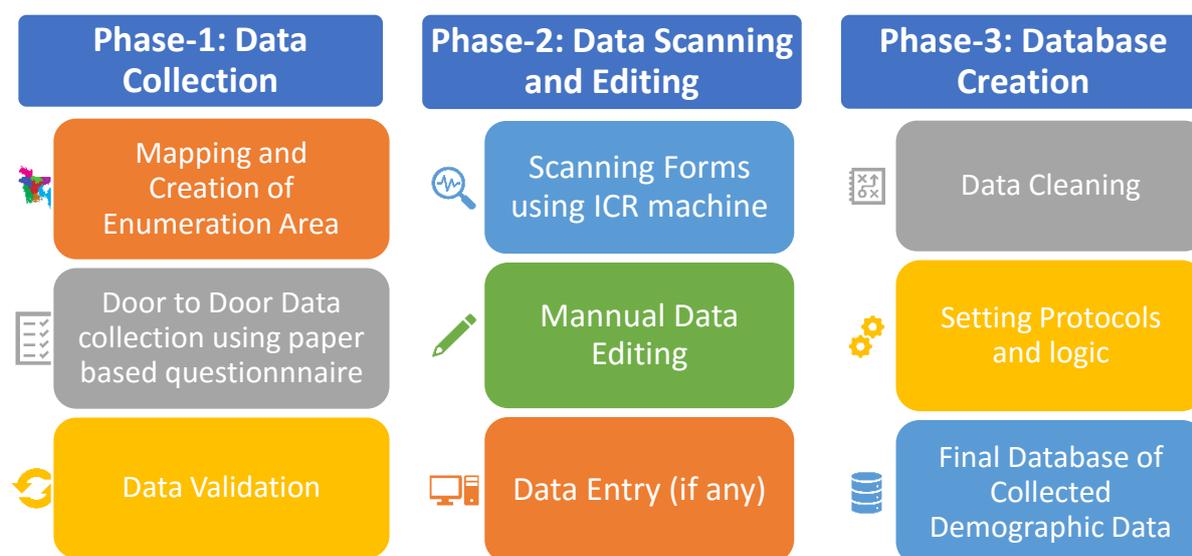


Figure 4: Phases of Demographic Data Collection

Biometric Data Collection for NPR

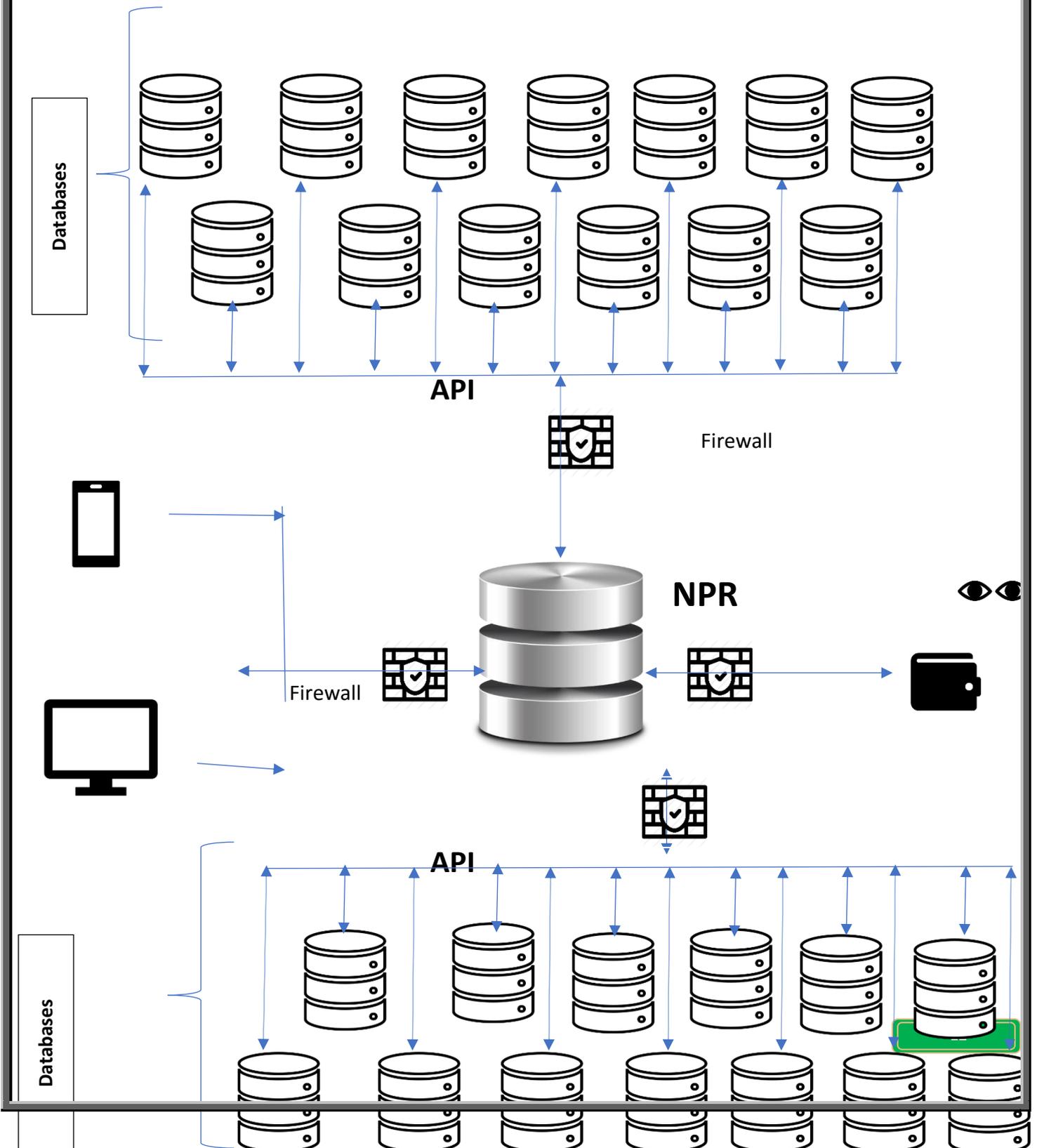
Biometric Data collection is a new dimension in case of any data collection. It requires technological as well as financial support to be successful. Three types of biometric data will be collected and entered into the database using unique identity number of the individuals. Fingerprints of all individual aged 10 years or more will be collected and store in the database. High resolution photos will be taken for every individual for facial recognition. In addition, IRIS scan of all of the individuals will be taken and stored in the database matching with the other biometric and demographic data.

Future Updating

Populations are constantly changing by virtue of births, deaths and changes of place of residence; so, if a population-registration system is to function properly it needs to operate on a permanent basis. This means that the entity responsible for the registration system should have sufficient administrative stability with human resources and official set up. The offices should also be supplied with proper equipment for maintaining the database. It should be based on a sound legislative framework. Moreover, periodic census or survey may be undertaken to update the database.

In order to update the residence addresses and find out the internal migration, a system of recording changes of residence should be in place. It may be made mandatory for the resident to report to the local registration point at the stipulated time through online or by physical visit. The registrar office should make changes updated after field verification. Besides, all other civil registration should be made mandatory for all. The legislative provision should be made to keep the citizen services suspended otherwise.

To keep the NPR functioning and updated, all other databases should be updated seamlessly all the time. The databases maintained by other government or non-government agencies should be kept connected and current by themselves.



Coordination arrangements between the population register, civil registration and other registers

A great advantage of computerized registers is the possibility of calculating directly specific demographic rates with potentially no numerator-denominator bias. For instance, it could be possible to compute specific fertility rates for employed and/or immigrant women, parity progression ratios, life expectancy by educational attainment, indicators on mixed marriages by ethnic group/foreign background, divorce rates by socioeconomic class of the spouses, etc. This requires full matching between civil registration and population register data as well as the same level of detail of information in the two sources, meaning that the certificate of the event (birth, etc.) must contain the same topics—with the same classification—like those available in the population register. In general, the use of the population register provides a broader opportunity to correctly identify the population at risk of an event. Thus, a coordinated initiative in synchronizing all the registers would yield a better and bigger picture of the society.

Figure-5: NPR Work Flow

One person, one record

While population registration can provide information that is indispensable for effective government, it is important to store and share that information in an efficient manner. Hence Countries should be guided by the principle of “one person, one record”. This means that each piece of information about an individual should be registered in one place and one place only. This does not mean, however, that different public authorities should be forbidden from keeping records related to their specific tasks. For example, a tax office can register and process information related to a person’s occupation and income. But instead of registering information about that individual’s place of residence, the tax office should instead obtain this information from the authority overseeing the population register. If organized properly, such a system can provide the administrative backbone of a society. To achieve this, however, a clear structure for sharing information throughout all parts of the administration is a prerequisite. Registration of a birth or immigration should be entered in the register in such a way that during the registration a unique Identity will be generated and passed throughout the network. The other users/service providers will then use that identification in all of the activities.

Single registration, multiple uses

Multiple registration of information is a common problem where the public administration system lacks a framework for information sharing. When this is the case, individual institutions often begin to maintain their own registers or databases for their own purposes. As a result, citizens are required to provide the same information on multiple occasions, often in a certified format. The potential consequences are obvious. These time-consuming and expensive requirements put an unnecessary burden on citizens, while the necessity to

repeatedly provide the same information increases the chances of error. Finally, multiple registration of information severely reduces the level of control that can be exercised in terms of data protection. Steps should be taken to ensure that mechanisms are in place to govern the collection and sharing of information, in the form of legislation that regulates both the collection and the disclosure of data by the responsible authorities (OSCE's Office for Democratic Institutions and Human Rights, 2009).

SWOT Analysis of NPR

There are prospects as well as challenges associated with moving to a population register-based system, rather than having regular, infrequent censuses. The continuous nature of data collection (or supply) for population registers means that the information available is current, whereas information from decennial censuses may be many years out of date. Population registers can be updated almost instantaneously, meaning that there is no long waiting period for the data to be collated and analyzed as there is with decennial censuses. There is also a potential for linked records, meaning that individuals can be followed by household or family tree throughout the life course.

However, the type of data available is determined by the nature of the administrative departments collecting it. On a census, additional questions can be easily added to give data on a specific area of interest. When first NPR is established, the quality across different departments or regions may be of uneven quality. There are also concerns regarding the potential for data leaks.

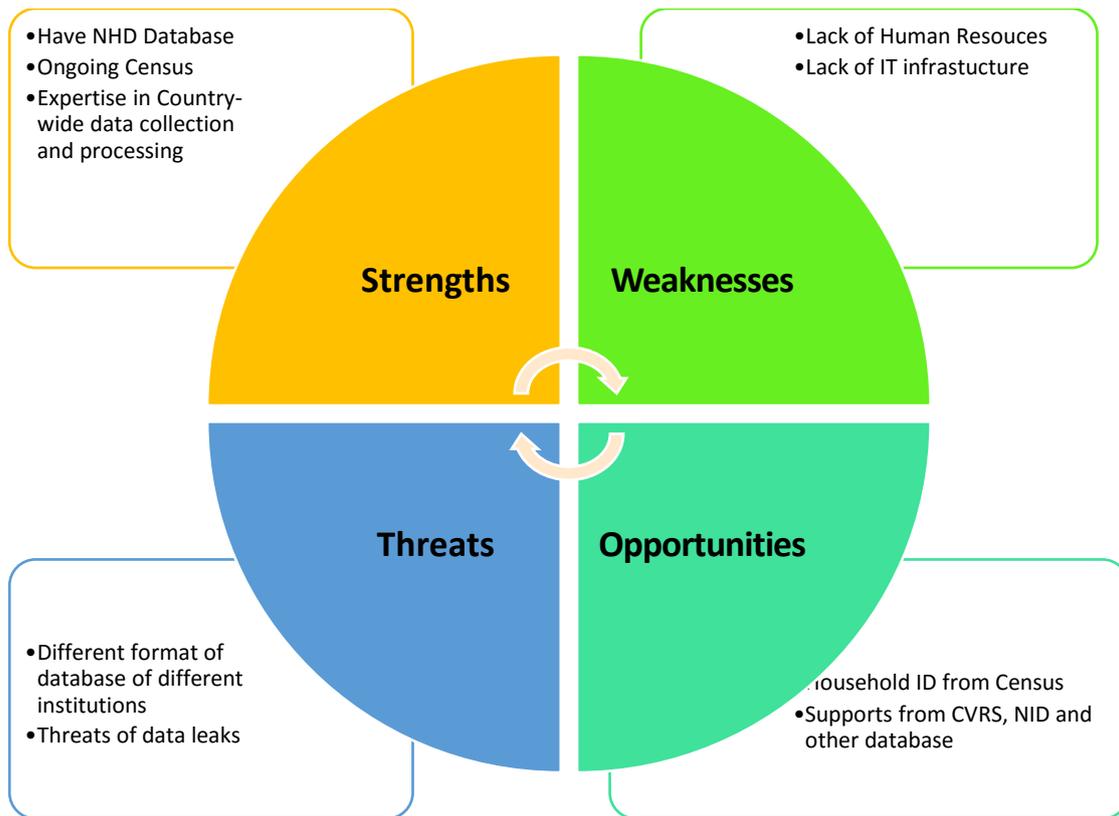


Figure 3: SWOT Analysis of NPR in Bangladesh

References

- BBS (2013) *National Strategy for the Development of Statistics*. Dhaka, Bangladesh.
- Government of Bangladesh (2013) *Statistical Act, 2013*. Bangladesh.
- Government of Bangladesh (2017) 'Rules of Business, 1996'. Dhaka, Bangladesh: GoB.
- OSCE's Office for Democratic Institutions and Human Rights (2009) 'Guidelines on Population Registration'. Wassaw, Poland.
- Poulain, M., Herm, A. and Translated by Roger Depledge, «Le registre de population centralisé, source de statistiques démographiques en E. (2013) 'Central Population Registers as a Source of Demographic Statistics in Europe', *Population (English Edition)*, 68(2), pp. 183–212. doi: 10.3917/pope.1302.0183.
- United Nations (1969) 'Methodology and Evaluation of population registers and similar systems', *Studies in Methods*. New York: UNited Nations.
- Verhoef, R. and Van De Kaa, D. J. (1987) 'Population registers and population statistics', *Population index*, 53(4), pp. 633–642. doi: 10.2307/3643792.
- <https://www.bloombergquint.com/opinion/npr-nrc-cao-how-the-national-population-register-data-will-be-gathered>