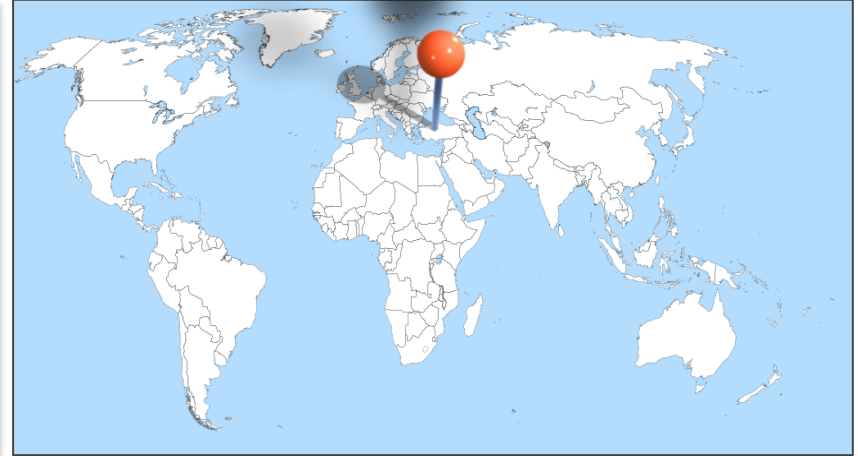**T**urkStat &

Population **S**tatistics and

Censuses of Turkey

Mehmet Doğu KARAKAYA & Mehmet Şaban UCARI

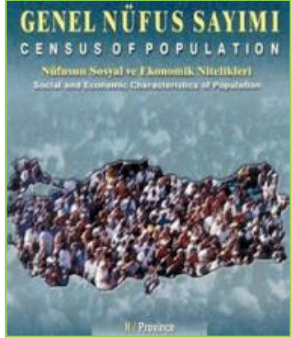**TurkStat Expert**
TURKSTAT (Turkish Statistical Institute)
Demographic Statistics Department – Population Characteristics Group

8th November, 2021

SESRIC

CONTENT

DATA SOURCES FOR POPULATION STATISTICS

ADDRESS BASED POPULATION REGISTRATION SYSTEM (ABPRS)

History- TurkStat

Important Dates...

❑ Defterhane, 1389

❑ Central Statistical Council at Prime Ministry of the Empire, 1891

❑ The Central Statistical Department ,1926

❑ The General Directorate of Statistics (GDS), 1930

❑ The State Institute of Statistics (SIS), 1962

❑ **Turkish Statistical Institute (TurkStat), 2005**

Data Sources for Population Statistics

1- Population Censuses (1927-2000)

2- Address Based Population Registration System (2007 – 2020- ...)

3- 2011 Population and Housing Census

4- 2021 Population and Housing Census

Population Characteristics

Database

Census History in Turkey

❖ **The first census in 1927,**

❖ **The second census in 1935,**

❖ **Every five years between 1935-1990,**

❖ **The last traditional census in 2000**

❖ *Totally 14 traditional population censuses*

Method

❖ **Traditional census method** (face to face interview),

❖ **Standard questionnaire** (paper),

❖ **«De facto» population definition,**

❖ **One day application with national curfew**

(no permission to go out)

Target

Establishing **Address Based Population Registration System**

and

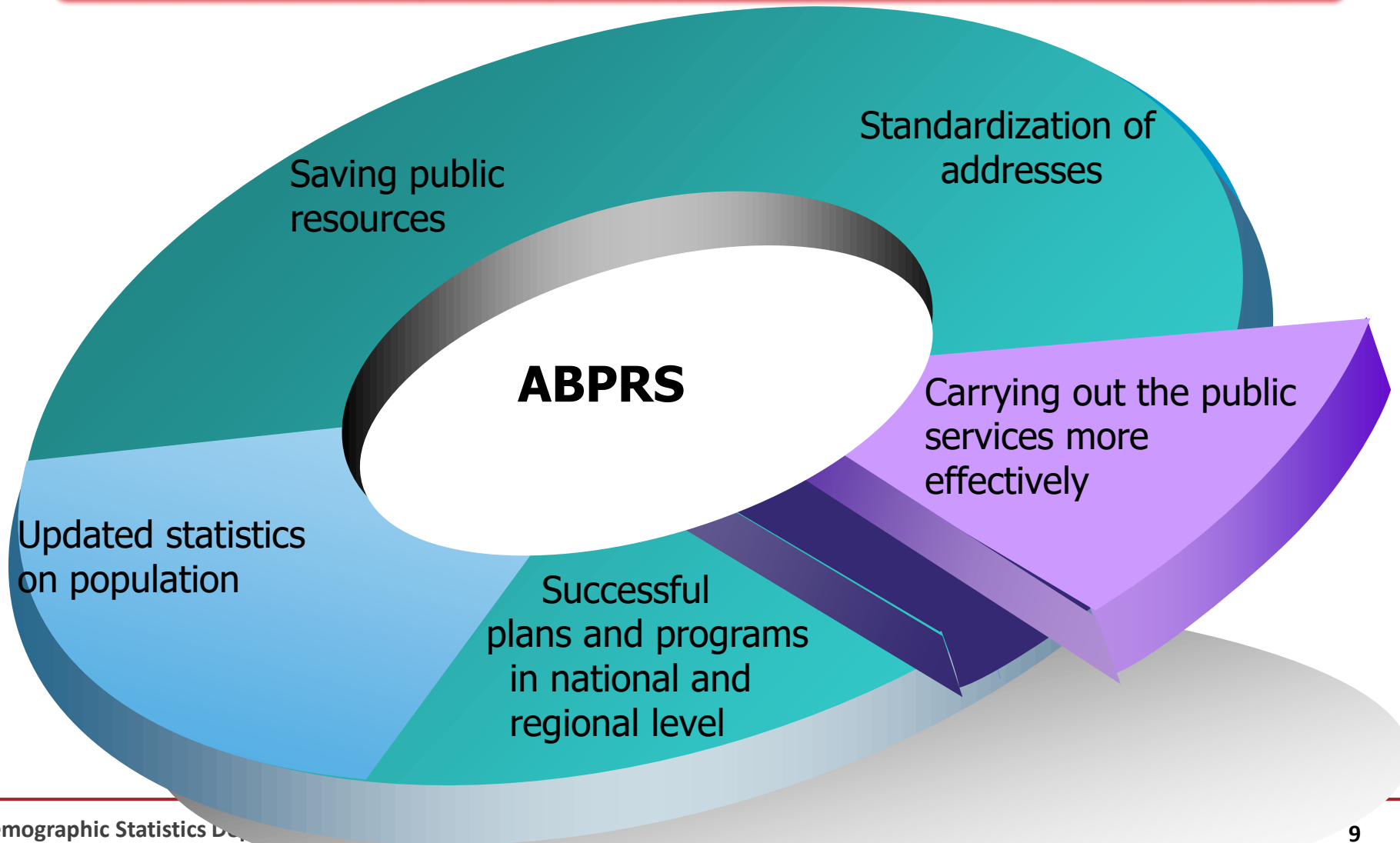changing the census methodology from **traditional to register** based.

Address Based Population Registration System (ABPRS)

Legal Base

1. **Civil Registration Services Law** No. 5490, dated 29.04.2006.

2. The regulation related to Address and Numbering Study.

(Prepared in accordance with Civil Registration Services Law)

3. **The Turkish Statistical Law** No. 5429 (related articles on field application and data confidentiality).

❑ Civil Registration Services Law charged;

- TurkStat for establishing the ABPRS.
- Ministry of Interior for maintaining and updating the system.

Why ABPRS?

Standardization of addresses

Saving public resources

Carrying out the public services more effectively

ABPRS

Updated statistics on population

Successful plans and programs in national and regional level

Unstandardized Address Structure – Before NAD

NAME-SURNAME	POSTED DOCUMENT TYPE	ADDRESS ON THE DOCUMENT
Hüseyin YILDIRIM	Electric Bill	Anavatan Avenue, Besides Zirve Hotel Pelitli / TRABZON
Hüseyin YILDIRIM	Water Bill	Devlet Karayolu Avenue, Yıldırım Apartment Pelitli / TRABZON
Hüseyin YILDIRIM	Telephone Bill	Adnan Kahveci District, Rize Avenue, Besides Zirve Hotel, 61010 Pelitli / TRABZON
Hüseyin YILDIRIM	Social Security Document	Adnan Kahveci District, Rize Avenue, No:160 Pelitli / TRABZON
Hüseyin YILDIRIM	Mail	Hükümet Avenue, Besides Zirve Hotel 2nd Storey, Pelitli / TRABZON
Kenan YILDIRIM	Student Selection and Placement (Result of a Central Exam)	Hükümet Avenue, Adnan Kahveci District, No:160 Pelitli / TRABZON

Purpose of the establishment of Address Based Population Registration System (ABPRS)

❑ To set up a **central address database** including all of the addresses in the country.

❑ To obtain a **standardized numbering** and signboarding for all over the country.

❑ To **define an address standard** and prevent different descriptions of an address.

❑ To establish ABPRS covering information on place of residence of all people living in the country.
  ⭕It means **"de-Jure"** definition.

Background of ABPRS

The Central Civil Registration System (MERNIS)

❑ ...centrally administered system

❑ Any changes in civil status (births, deaths, marriages etc.) are registered electronically

▪ **in real time**

▪ over a network

▪ by the civil registration offices

❑ ...based on family ledgers

❑ No information was available on place of usual residence (before ABPRS)

❑ Maintenance of the system obtained

▪ by the **Ministry of Interior,** General Directorate of Civil Registration and Citizenship (GDCRC).

❑ ...has become the **backbone of the e-Government** infrastructure.

Background of ABPRS

TR Identity Number

❑ **Unique ID number** for Turkish Citizens

❑ Available since **2001.**

❑ ...comprised of **11 digits** (which do not contain personal information)

❑ ...provides:

- Fast and efficient identification

- Register **all civil status events** from the moment of birth

- Fast and efficient services to the users of public services

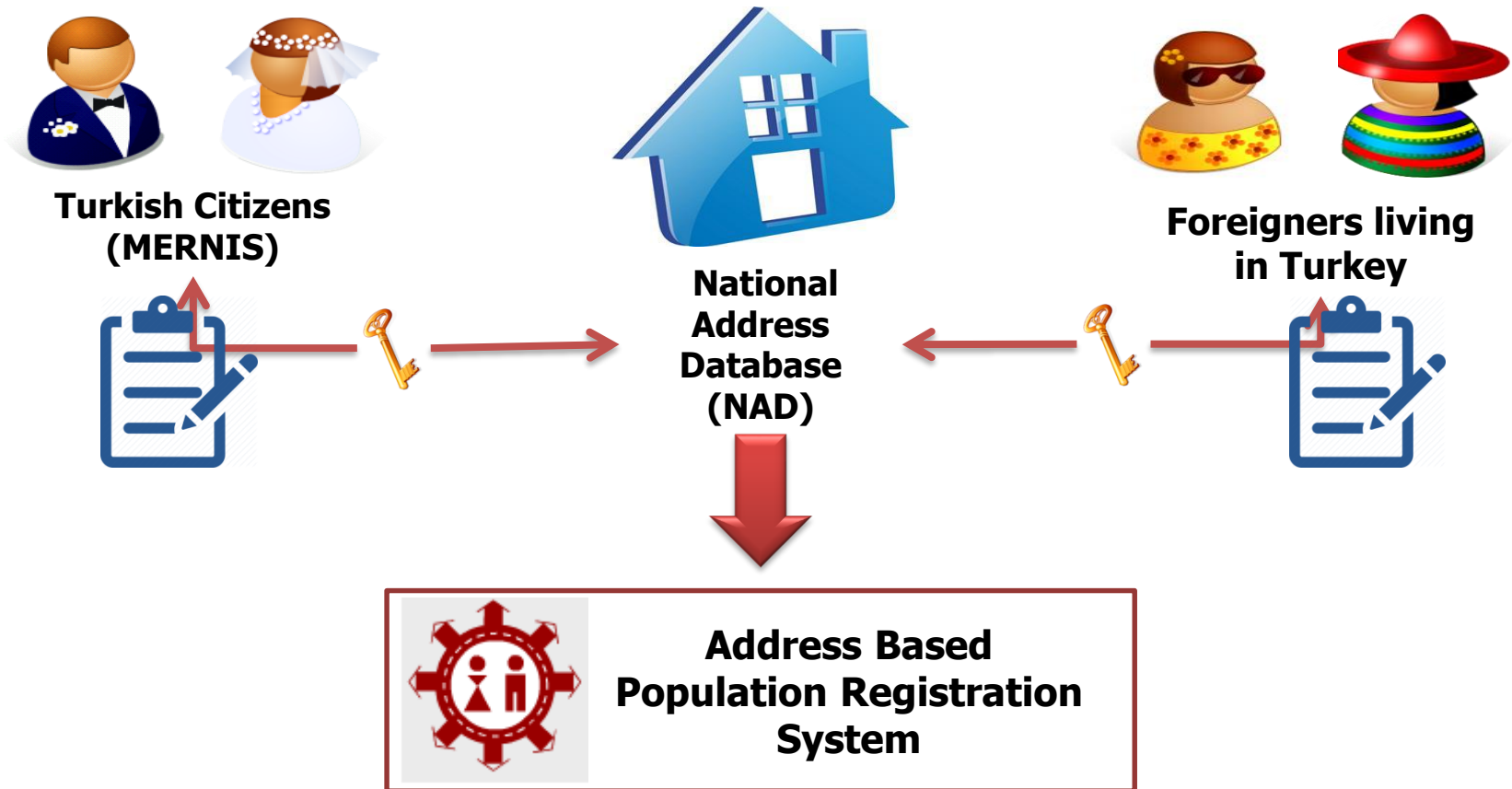- Connection between addresses and personal information.

Background of ABPRS

Address Components Standard

❑ Geographical elements used for the description of an address.

❑ …was published by Turkish Standards Institute (with the code TSTEN14142-1) in 2006.

❑ The address must contain;

- Province, district, municipality, town and village names.

- Quarter, square, boulevard, road and street names.

- Building and indoor numbers.

- Address codes

What is ABPRS?

Turkish Citizens (MERNIS)

National Address Database (NAD)

Foreigners living in Turkey

Address Based Population Registration System

Personal information was matched with address information by using Identification Numbers and address codes.

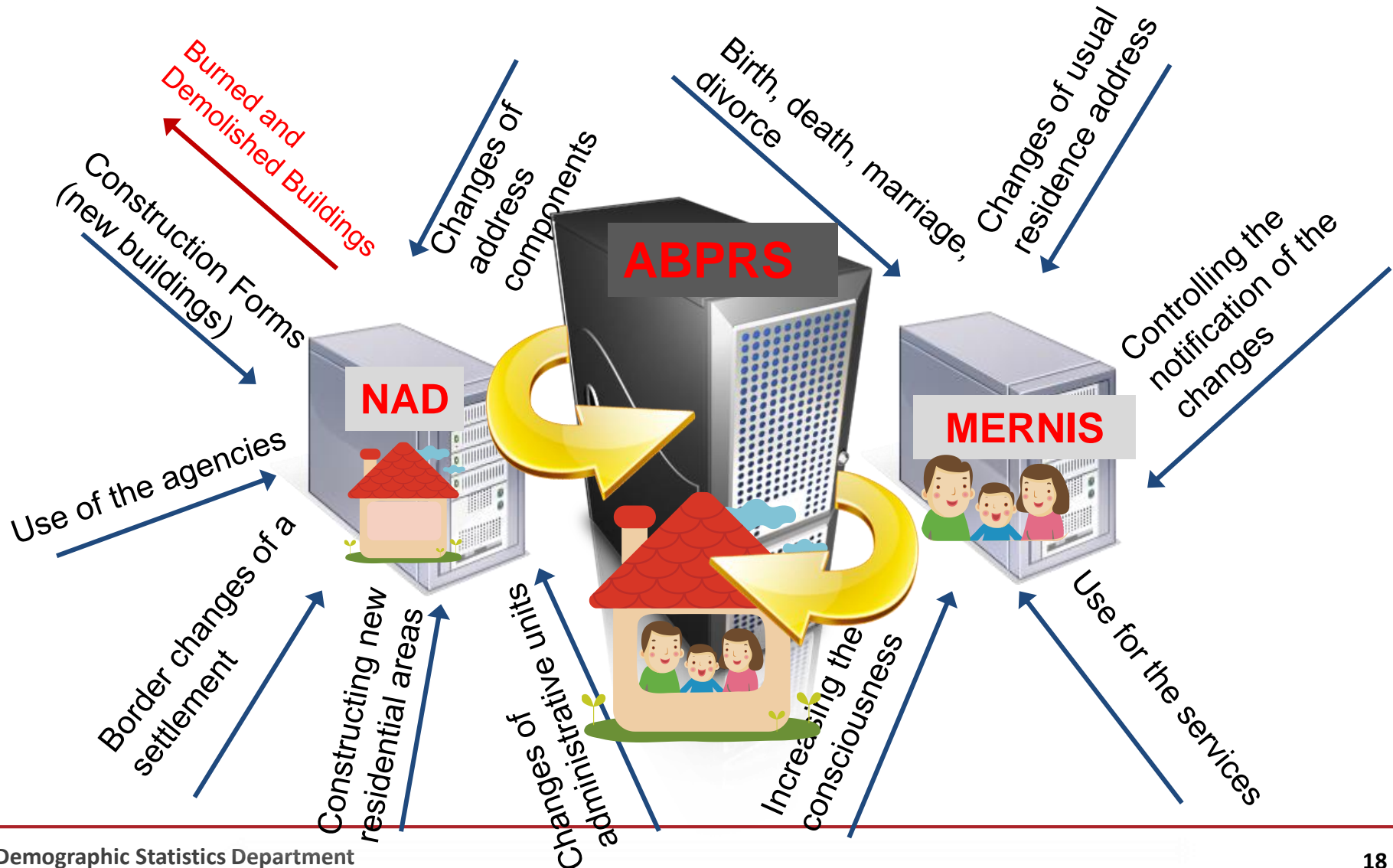## Establishment of the NAD

❑ Field work were carried out

   ⭕ **by the municipalities** in the localities having municipal organizations and

   ⭕ **by the Special Provincial Administrations** in the villages.

❑ Infrastructural studies were carried out by TurkStat.

❑ Data was entered by local organizations.

❑ Around 40 million addresses were entered to the system with **unique address codes**.

Establishment of the ABPRS

Coverage of the study:

❑ Persons living in **dwellings or other housing units**,

❑ Persons residing in institutional places,

❑ Nomads,

❑ Foreigners living in Turkey.

❑ Turkish Citizens residing abroad were not included.

Updating the System

ABPRS

NAD

MERNIS

Burned and Demolished Buildings

Construction Forms (new buildings)

Changes of address components

Birth, death, marriage, divorce

Changes of usual residence address

Controlling the notification of the changes

Use of the agencies

Border changes of a settlement

Constructing new residential areas

Changes of administrative units

Increasing the consciousness

Use for the services

Updating the System

❑ Persons are under the **obligation of notifying changes** of usual residence address.

❑ A person **can have only one** address of usual residence.
   ○ But other addresses such as summer houses, winter houses, second or third houses may be entered to the system (without obligation).

❑ Persons are not under the obligation of notifying changes occurring in **address components**.
   ○ Such changes should be made by municipalities and special provincial administrations.

❑ Address change notifications should be made **within 20 working days** to the civil registration offices
   ○ (or agencies providing address-based services) by the persons with using a simple declaration form.

Statistics produced from ABPRS

Statistics produced annually (since 31 December 2007) :

- Population size by localities

- Age, sex

- Literacy and completed level of education

- Nationality

- Marital status

- Place of civil registration

- Mean household size

- Internal migration (2009)

- Place of birth (2014)

- Type of households (2016)

- Immigration and emigration (2018)
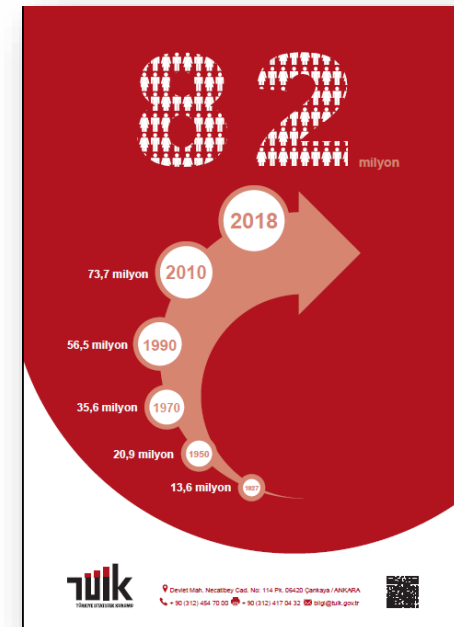
ABPRS is also base for:
- **Life tables**
- **Population projections**

2011 POPULATION AND HOUSING CENSUS (PHC)

2011 PHC

❑ After 14 traditional censuses, 2011 PHC was conducted with "**combined**" method.

- ⭕ **%20 of variables:** Address Based Population Registration System (ABPRS) and National Education Statistics Database (NESD)

- ⭕ **%80:** Sample survey

❑ In 2011 PHC, registers were also used for:

- ⭕ Address frame (National Address Database)

- ⭕ To check the accuracy

  - (Social Security Records, Unemployment Agency Records, Building Permits)

- ⭕ Corrections/Imputations

2011 PHC

- ❑ **De jure population** definition (instead of de facto)

- ❑ **3 months** field application (instead of one-day)

- ❑ **12% sample rate** (enumeration area)

- ❑ Full enumeration in **institutional places**

- ❑ **In total:** 2.4 million households and 9 millions individuals

- ❑ **Face to face interview**

  - ⭘ 40% PAPI
  - ⭘ 60%CAPI

2011 PHC

❏ Use of registers for census for the first time (20% of the variables)

❏ Difficulty in hiring and training of a large group of field staff for a short term work

❏ Relatively high cost

❏ Not being able to produce estimations for small geographic levels based on sample survey

❏ Lack of interest and support of municipalities

❏ Rising concern about confidentiality and privacy

2000 *vs* 2011 PC

	2000 PC	**2011 PHC**
Method	Traditional	Combined
Definition for residency rule	De-facto	De-jure
Duration of field application	One day application with a national curfew	2-3 month
Questionnaire	Standard	Household + Institutional Places
Collection method	PAPI	PAPI and CAPI
Data entry	ICR	Online data transfer for CAPI, Web-based program for PAPI
# of staff	1 million	4 500

Questions?

Better send e-mail!

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TURKEY

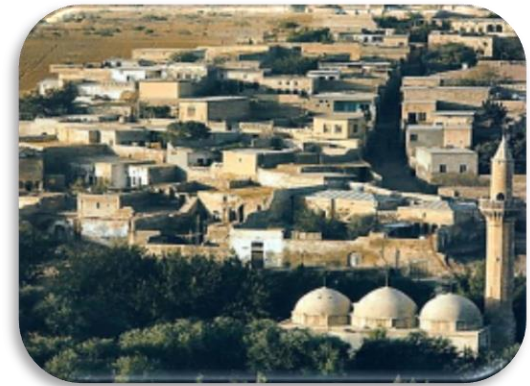| 2020	Administrative Divisions	Population	Annual Pop. Growth Rate	Median Age	Surface Area (km²)	Density (per km²)
Turkey	81 provinces, 973 districts	83 614 362	5.5 ‰	32.7	783.562	109

Views from cities & villages

İstanbul
Pop: 15 462 452
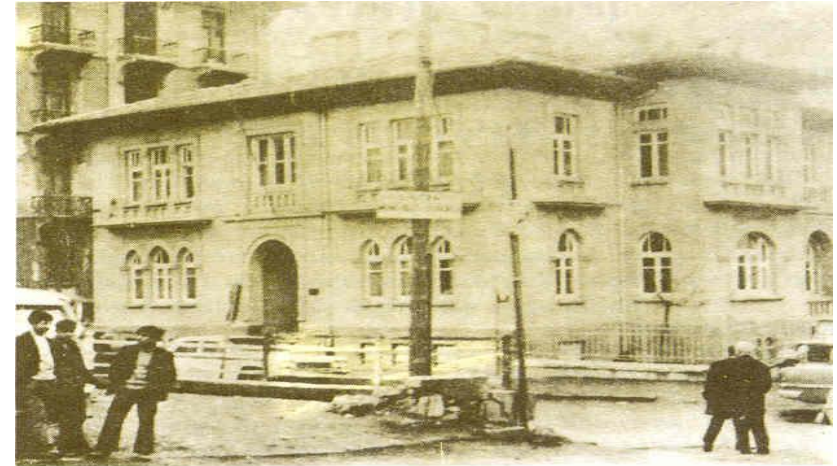
Ankara
Pop: 5 663 322

İzmir
Pop: 4 394 694

TURKSTAT

First Building of GDS

Previous Building of TurkStat

Current Building of TurkStat

Turkish Statistical Law, 2005

❑ Transition to Program Based Statistical Implementation Period (OSP, National Data Release Calendar etc.)

❑ Ensures the Scientific and Technical Independence

❑ Identifies the issues on data confidentiality

❑ Includes the data quality related issues

❑ Establishes the Statistical Council

❑ Reorganizes the TurkStat

Official Statistics Programme

OFFICIAL STATISTICS PROGRAMME 2017-2021

Turkish Statistical Institute

❑ 5 year programme since 2007

❑ Based on Turkish Statistical Law

❑ Establishes a framework for official statistics.

❑ Prepared by Statistical Council, adopted by Council of Ministers.

❑ States the objectives, coverage, methods, frequency, work plan and dissemination principles.

❑ Defines the duties of the institutions and organizations regarding the compilation, evaluation and publication of data.
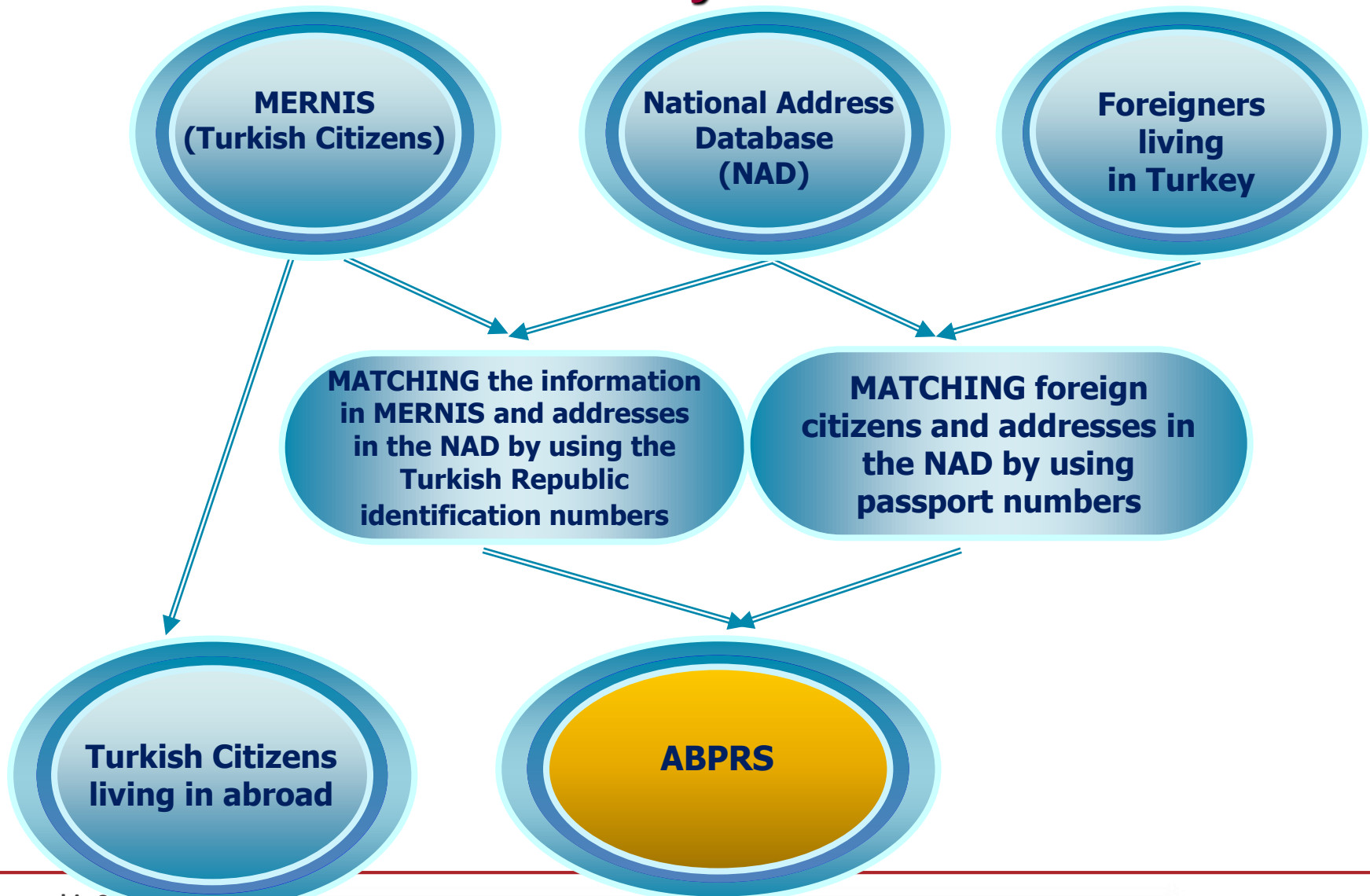
CENSUS HISTORY

Census History

14 traditional population censuses (1927-2000)

❑ One-day full enumeration with national curfew

❑ Paper based questionnaire (ICR method in 2000 Census)

❑ No information on usual residence (de jure)

❑ Need of a large number of staff

❑ High cost

❑ Overcounting

❑ Long duration of data processing (around 3.5 years)

❑ Population statistics are available within 5-10 year interval

General Structure of the System Established

MERNIS (Turkish Citizens)

National Address Database (NAD)

Foreigners living in Turkey

MATCHING the information in MERNIS and addresses in the NAD by using the Turkish Republic identification numbers

MATCHING foreign citizens and addresses in the NAD by using passport numbers

Turkish Citizens living in abroad

ABPRS

Establishment of the NAD

The related regulation defined:

❑ How the buildings should be numbered,

❑ The rules to determine the name and the number of avenues, streets or group of buildings,

❑ The direction of streets,

❑ Content and structure of signboards,

❑ Where the signboards will be put,

❑ How to number the interior doors of the buildings,

❑ How to control the numbering studies.

BASIC RESULTS

Population size and annual growth rate

Year	Population	APGR‰
1927	13 640 270	-
1935	16 158 018	21,10
1940	17 820 950	17,03
1945	18 790 174	10,59
1950	20 947 188	21,73
1955	24 064 763	27,75
1960	27 754 820	28,53
1965	31 391 421	24,63
1970	35 605 176	25,19
1975	40 347 719	25,01
1980	44 736 957	20,65
1985	50 664 458	24,88
1990	56 473 035	21,71
2000	67 803 927	18,28

Population size and annual growth rate

o TurkStat published **14th** annual population figures based on PR referring the year 2020.
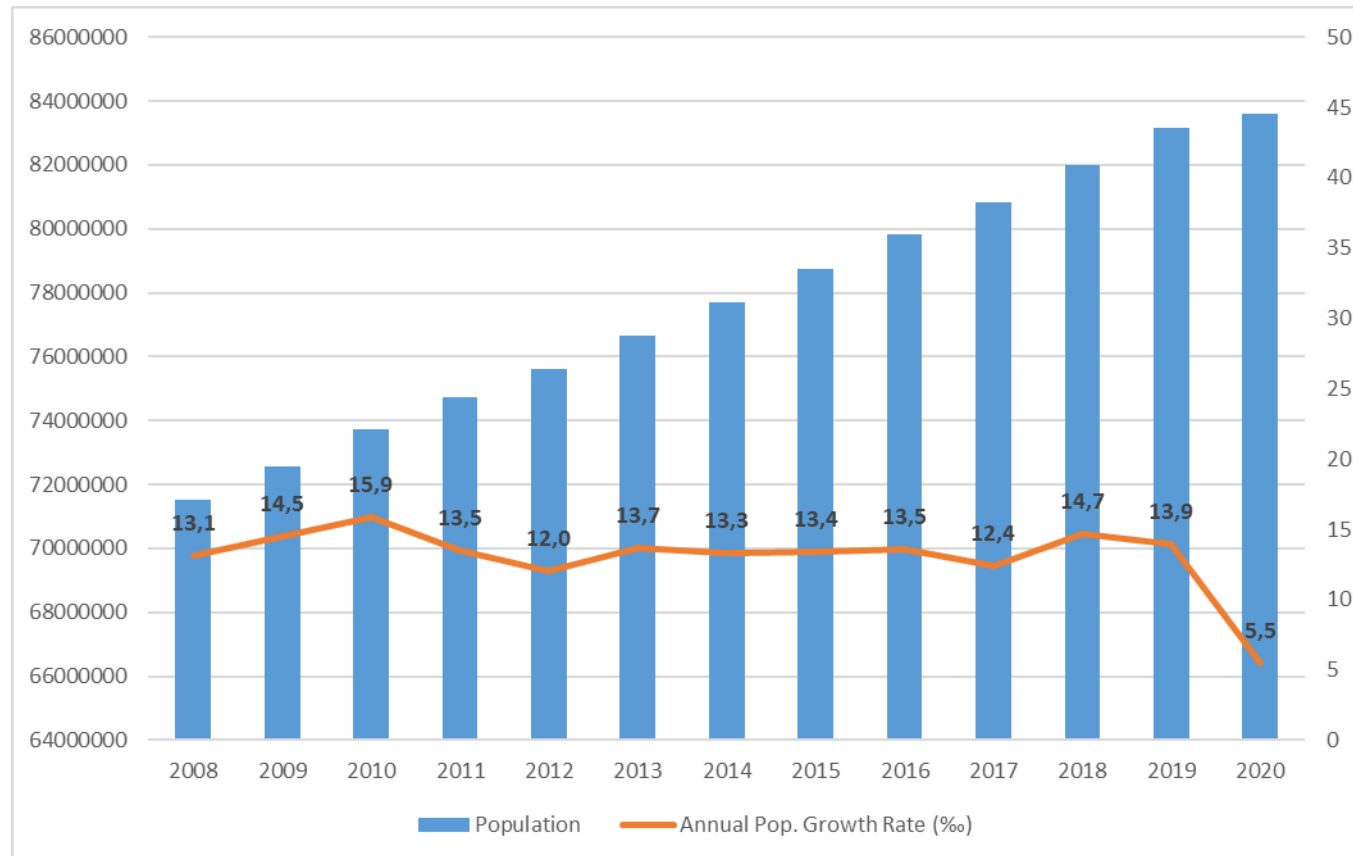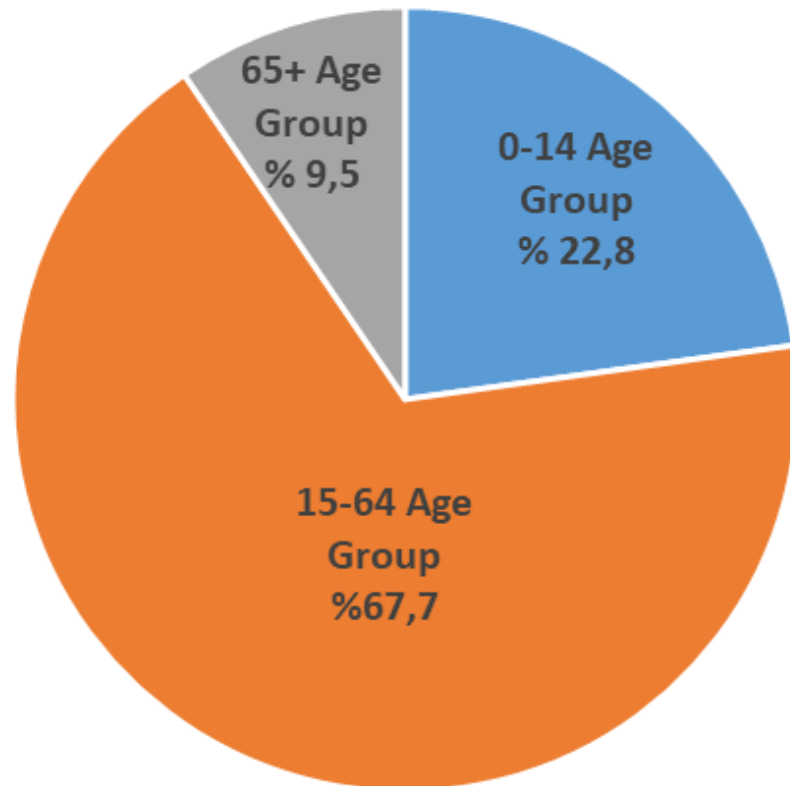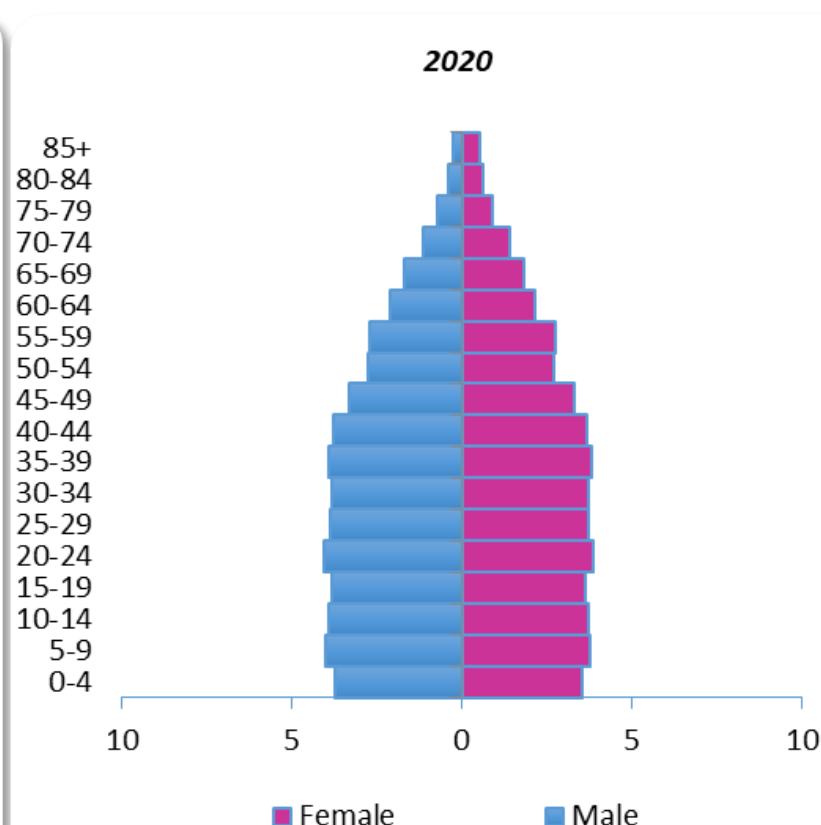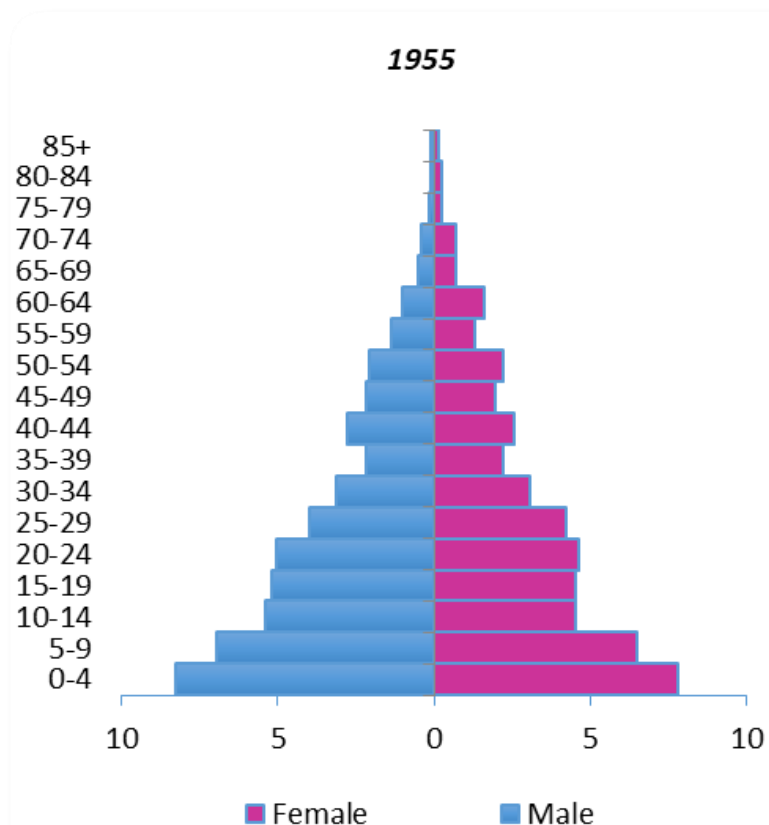
Population By Sex - 2020

➢ Total Population: 83 614 362

➢ **50,1%** males,

➢ **49,9%** females…

Population by Age Groups-2020

65+ Age Group % 9,5

0-14 Age Group % 22,8

15-64 Age Group %67,7

Population Pyramids

Population Size (83 614 362)

İstanbul
Pop: 15 462 452

İzmir
Pop: 4 394 694

Ankara (Capital)
Pop: 5 663 322

Nüfus Büyüklüğü ('000)

82	250
251	500
501	1 000
1 001	5 600
5 601	15 100

Median Age (Total: 32.7 / Male: 32.1 / Female: 33.4)

Ortanca yaş

19	23
24	27
28	30
31	35
36	41
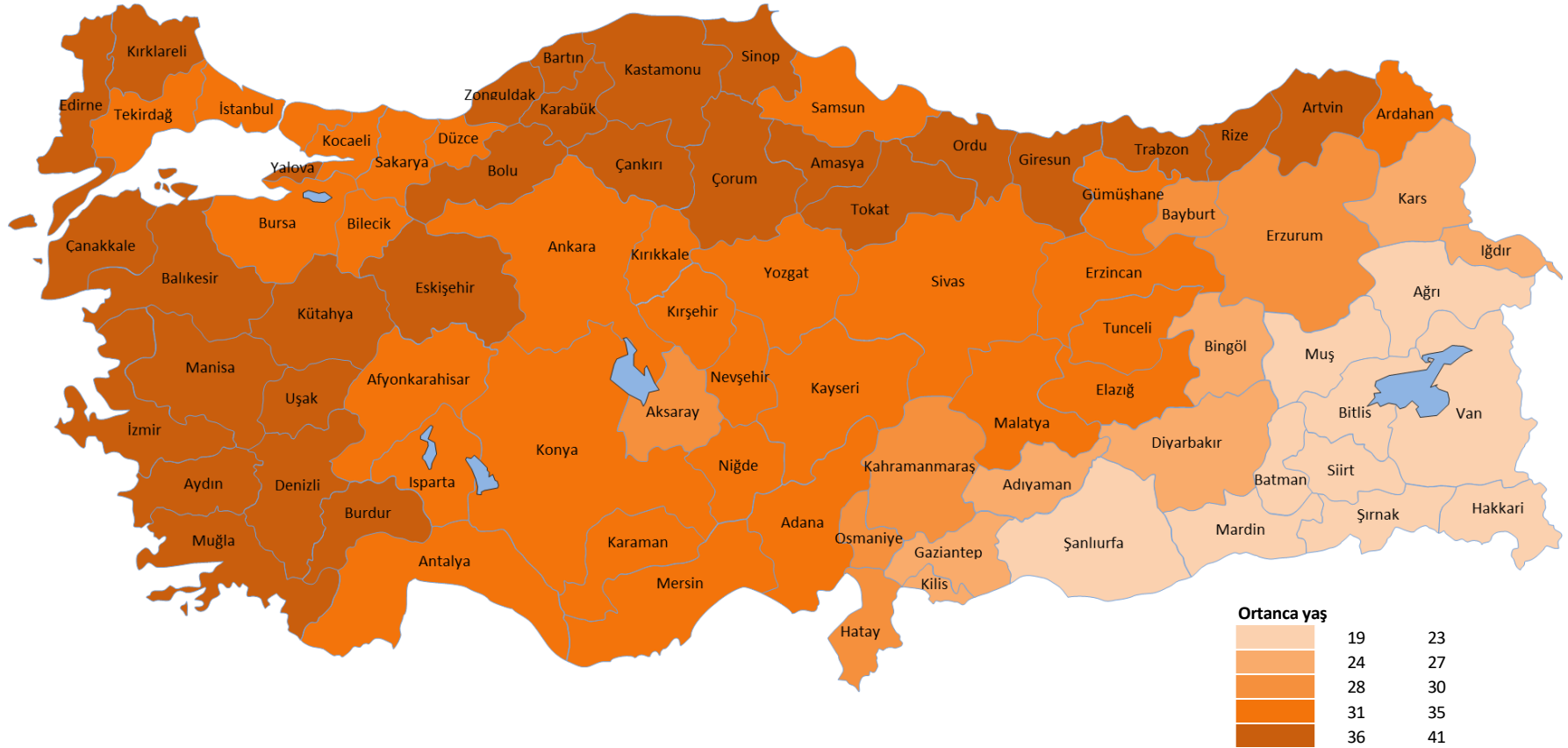
Average Household Size (3.30)

Ortalama hanehalkı büyüklüğü

2,65	3,00
3,01	3,50
3,51	4,00
4,01	5,00
5,01	6,45

2021 PHC

Population and Housing Census Methodology

| 1927 | 1935 | 1940 | 1945 | 1950 | 1955 | 1960 | 1965 | 1970 | 1975 | 1980 | 1985 | 1990 | 2000 |

2011
Combined Census

**(Registers +
Large sample survey) ***

(2.4 mil. HHs & more variables)

2021
Combined (!) Census

**(More registers +
Ad-Hoc survey) ***

(340 000 HHs & less variables)
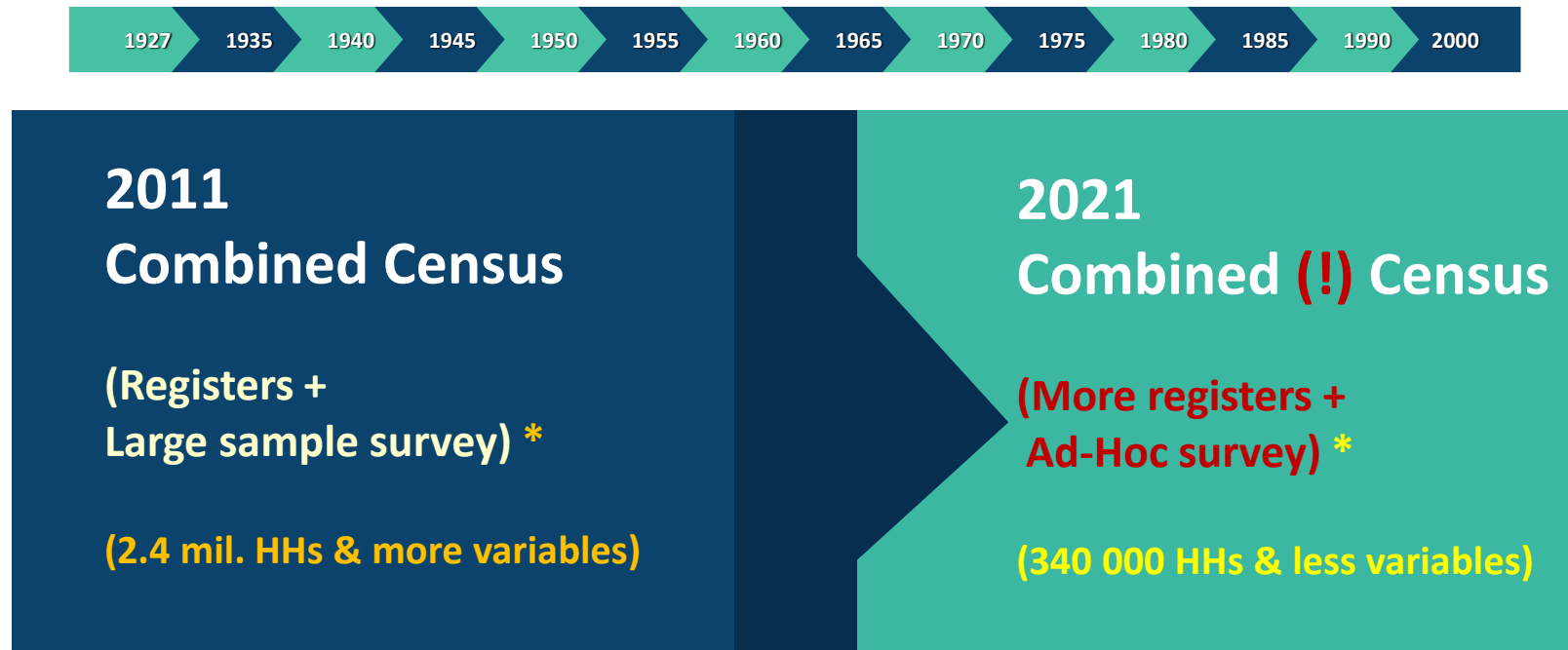
Main target: Changing the system from combined method to register-based census

Driving Forces

❑ **Negative features** of the censuses with field operation

Positive effects of:

❑ Completion of the **Central Civil Registration System (MERNIS) including unique ID numbers:** 2002

❑ Setting up the **National Address Database (NAD)**: 2006

❑ Establishment of the **Address Based Population Registration System (PR/ABPRS):** 2007

❑ Creating the **National Education Statistics Database (NESD):** 2008

Driving Forces

❑ Producing **annual population statistics** according to PR: 14 years, 2007-2020.

❑ Utilizing **administrative registers** for the first time for census purposes: 2011

❑ Setting up **the Institutional Living Quarters Address Database**: 2012

❑ Transforming the National Address Database to **Spatial Address Registration System (SARS)** by adding coordinate information to addresses: 2012-202**?** (ongoing…)

PHC Preparations

❑ **Steering Committee (SC)** was established (June 2018):

- o Consists of a vice president and 5 related heads of departments of TurkStat

- o To manage and coordinate all processes of 2021 PHC

- o To decide the working groups

- o To decide the registers to be used

- o To determine the needs (budget, IT infrastructure)

❑ Working groups on «**Labor Force Statistics**» and «**Quality**» were established

Registers Needed

o Population (ABPRS) ✓

(demography, migration, household/family)

o Address (NAD) ✓

o Education (NESD) ✓

o Disability **Ministry of Family, Labour and Social Services**

o Employment and Unemployment (PCDB)

o Building and Dwelling (Sample survey)

Current Situation

● Core Topics

	eurostat		UNECE	
Total	40	**100%**	35	**100%**
Produced	24	60%	20	57%
Likely to be produced	4	10%	4	11%
Sample survey (CATI)	12	30%	11	32%

2021 PHC Pilot Study

1st Pilot Study (2019)
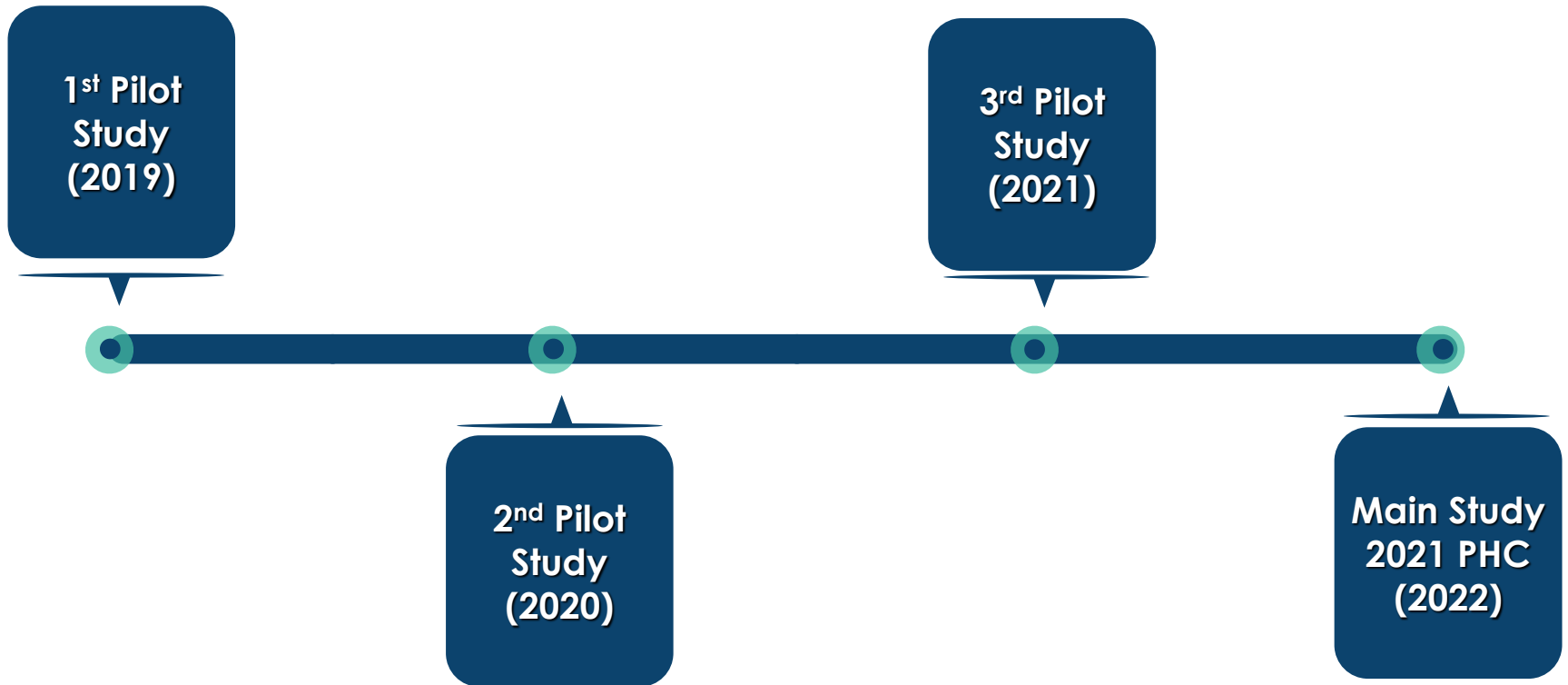
2nd Pilot Study (2020)

3rd Pilot Study (2021)

Main Study 2021 PHC (2022)

What is the PCDB?

Population Characteristics Database (PCDB):

provides integrated information on persons such as

birth,
nationality,
disability,
education,
employment status,
income,
property,
migration,
family structure.

Aim:
To produce

high quality,
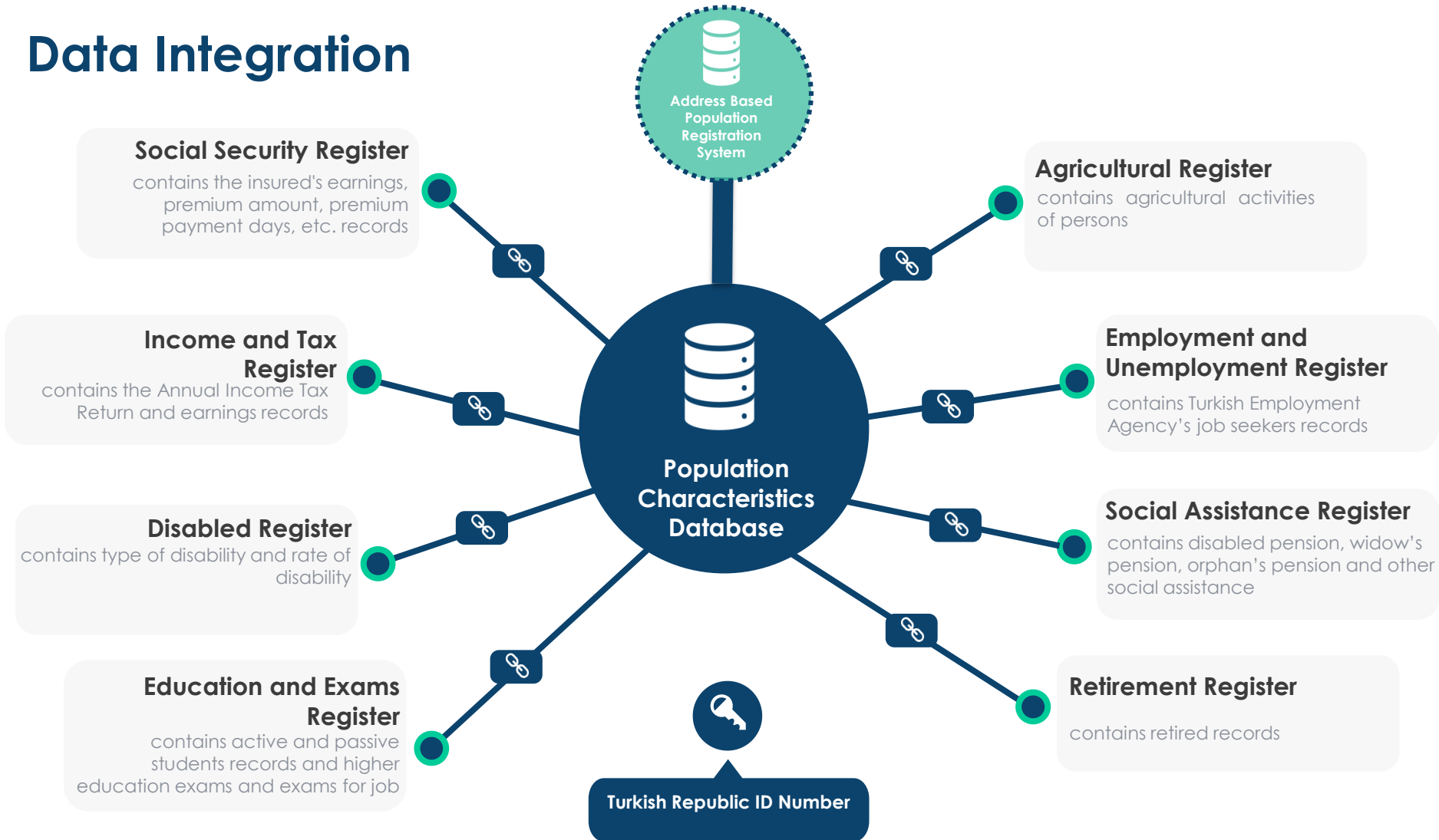**low cost,**
Sustainable
and comprehensive statistics

for PHCs and other data users.

…will be established by being integrated registers on:

social security,
unemployment,
tradesman,
active students,
income-tax,
disability,
agriculture
and other registers .

Data Integration

Address Based Population Registration System

Social Security Register
contains the insured's earnings, premium amount, premium payment days, etc. records

Agricultural Register
contains agricultural activities of persons

Income and Tax Register
contains the Annual Income Tax Return and earnings records

Employment and Unemployment Register
contains Turkish Employment Agency's job seekers records

Population Characteristics Database

Disabled Register
contains type of disability and rate of disability

Social Assistance Register
contains disabled pension, widow's pension, orphan's pension and other social assistance

Education and Exams Register
contains active and passive students records and higher education exams and exams for job

Retirement Register
contains retired records

Turkish Republic ID Number

Registers Situation for the the PCDB?

21 registers needed

20 registers obtained

1 registers not obtained yet

PCDB for 2021 PHC

77% Registers **23%** Modelling
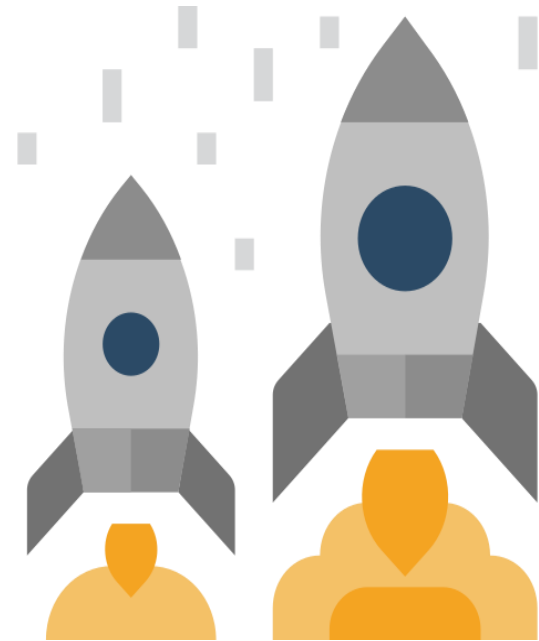
2019 Pilot Study

Challenges of Administrative Data

❖ **Lack of Metadata**

❖ **Different Classification by Dataholders**

❖ **Missing Value in Registers**

❖ **Differences of Definitions**

❖ **Reference Date**

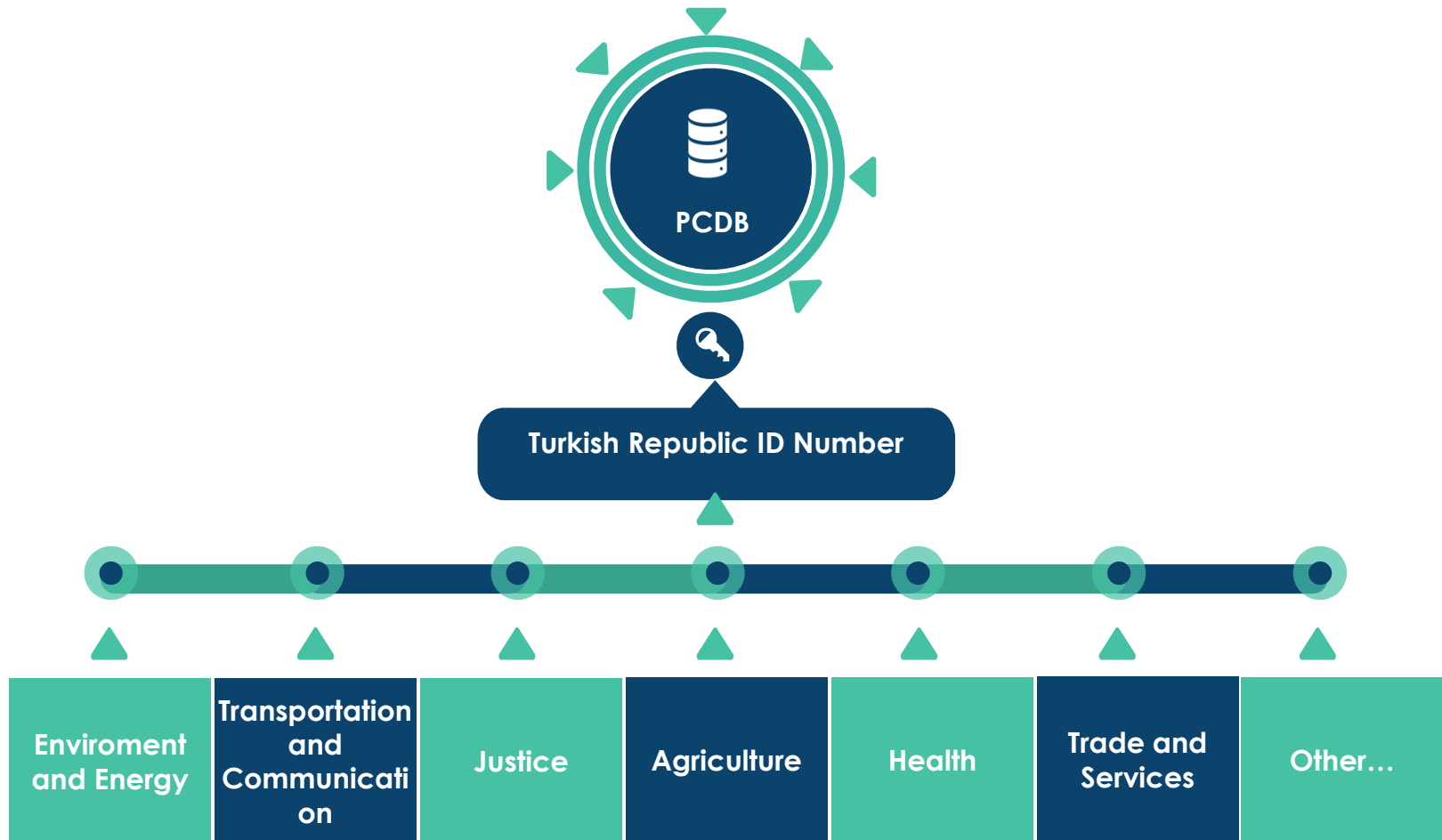❖ **Multiple Record – Deduplication – Data Loss**

❖ **IT Infrastructure**

Adventages of Administrative Data

❖ **Unique Key (TR ID Number / Address ID Code)**

❖ **Dataholders willing to share data**

PCDB beyond 2021 PHC

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