Statistical estimation of migration FLOWS and PATTERNS *to leave No1 behind*

Republic of Moldova

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Counted and Visible: Global Conference on the Measurement of Gender Equality and Intersecting Inequalities,
26-27 February, New York

CONTENT:

- Estimation of INTERNATIONAL MIGRATION *(first ever)*
- STATISTICS Dissemination, Communication
- NATIONALIZED SDGs indicators - *migration*
- CONCLUSIONS, LESSONS LEARNED, NEXT STEPS

Estimation of INTERNATIONAL MIGRATION *(first ever)*

Context and stages passed in estimation of international migration

Context & Premises

- High flow of **unregistered** international migration
- **Alignment** of the national statistical system with international and European standards
- Implementation of the concept of ***usual residence*** in official statistics (Census)

1 Identify suitable data **SOURCE** & methodology

2 Get **DATA** from the identified data holder

3 Apply international **DEFINITION** using border crossing data

4 Data analysis, imputation and **PROCESSING**

5 Calculate the (e/i)migrant **STATUS**

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1. Identify suitable DATA …

Sources	Limitations		
Statistical surveys	collect information for a relatively small part of the population	limited use of surveys data disaggregated by age, sex and small population groups and geographical subareas	migration STOCK
Population census	are conducted only once in a while	cannot be used to produce yearly estimates	migration STOCK
Administrative data	not always available in reliable and complete form	main data source that can be considered the most suitable source for the analysis of international migratory flows	migration FLOW

1. Identify suitable … METHODOLOGY

= Threshold

=

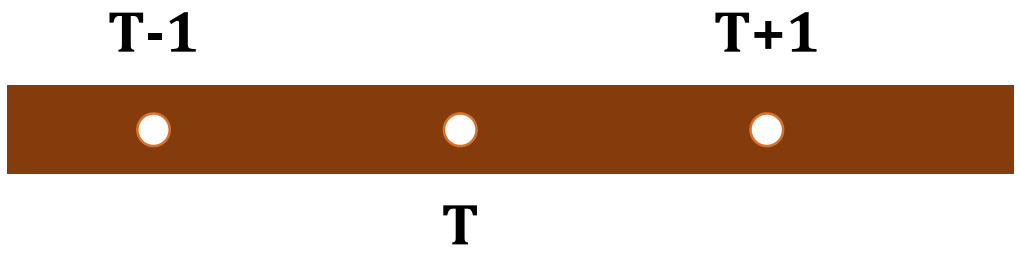
= TOLERANCE =

183 (6 months+1 day)
275 days (9 months)
305 (10 months)
335 (11 months)

temporary absences measured

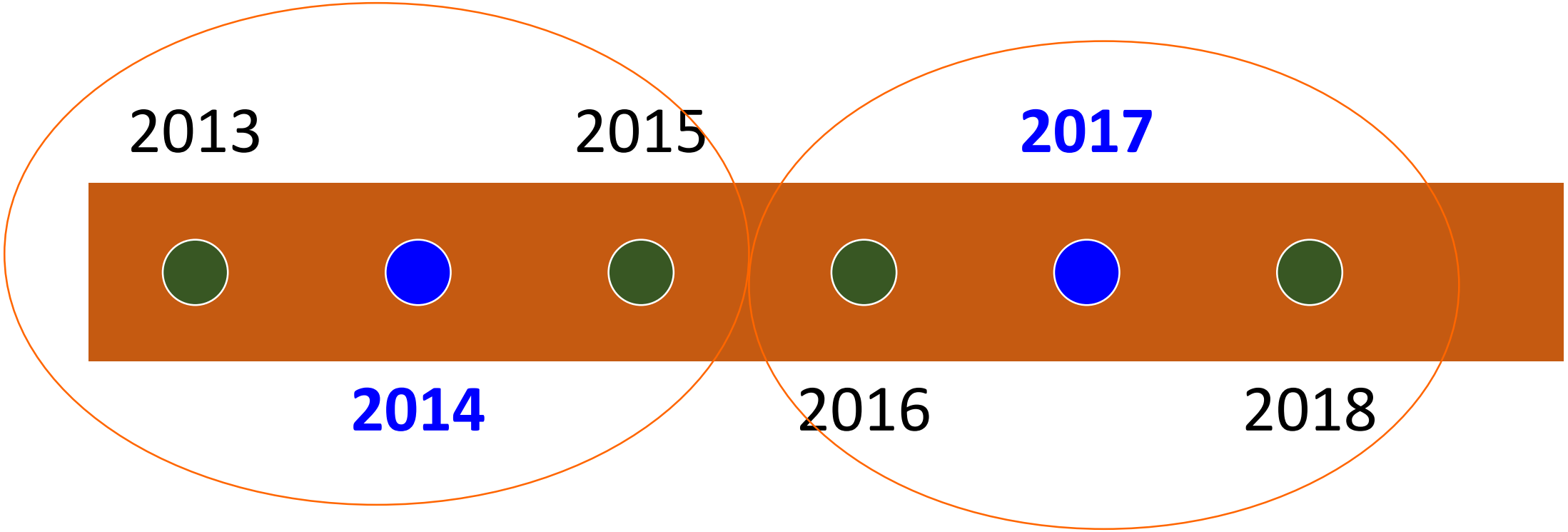
182 (6 months)
90 days (3 months)
60 (2 months)
30 (1 month)

temporary absences excluded



reference period

2. Get DATA from identified data holder



1.5 mln. unique persons
34.8 mln. border crossings

RM citizens

1.7 mln. unique persons
41.1 mln. border crossings

0.7 mln. unique persons
13,4 mln. border crossings

foreign citizens

1.2 mln. unique persons
18.7 mln. border crossings

3. Apply DEFINITION - international migration

Immigrant

person who **ENTERED** the country and stayed in the country for at least **9 months** during the upcoming year after living abroad for at least **9 months** in the previous year

Emigrant

person who **EXITED** from the country and lived abroad for at least **9 months** during the previous year, living in RM for at least **9 months** the year after

Net migration = numbers of immigrants - emigrants during one year

4. Data analysis, imputation, processing

Identification of “illogical” itineraries

	IDNP	gender	birth_date	set	id	m_dir	citizenship	date	Y
201	18	m	10.07.1990	1	676	exit	MOLDOVA	03.11.2015	2015
204	19	m	11.09.1991	1	679	exit	MOLDOVA	27.01.2013	2013
205	19	m	11.09.1991	1	680	entry	MOLDOVA	28.04.2013	2013
206	19	m	11.09.1991	1	681	exit	MOLDOVA	11.09.2013	2013
207	19	m	11.09.1991	1	682	exit	MOLDOVA	24.01.2014	2014
208	19	m	11.09.1991	1	683	entry	MOLDOVA	24.01.2014	2014
209	19	m	11.09.1991	1	684	exit	MOLDOVA	28.01.2014	2014
210	19	m	11.09.1991	1	685	entry	MOLDOVA	23.05.2014	2014
211	19	m	11.09.1991	1	686	exit	MOLDOVA	01.09.2015	2015
217	20	m	19.10.1990	1	692	entry	MOLDOVA	09.10.2013	2013

- movements of a person for 2013-2015

- illogical itinerary

Imputation of a missing movement

	IDNP	gender	birth_date	set	id	m_dir	citizenship	date	Y
249	18	m	10.07.1990	1	676	exit	MOLDOVA	03.11.2015	2015
250	19	m	11.09.1991	1	679	exit	MOLDOVA	27.01.2013	2013
251	19	m	11.09.1991	1	680	entry	MOLDOVA	28.04.2013	2013
252	19	m	11.09.1991	1	681	exit	MOLDOVA	11.09.2013	2013
253	19	m	11.09.1991	1	681	entry	MOLDOVA	18.11.2013	2013
254	19	m	11.09.1991	1	682	exit	MOLDOVA	24.01.2014	2014
255	19	m	11.09.1991	1	683	entry	MOLDOVA	24.01.2014	2014
256	19	m	11.09.1991	1	684	exit	MOLDOVA	28.01.2014	2014
257	19	m	11.09.1991	1	685	entry	MOLDOVA	23.05.2014	2014
258	19	m	11.09.1991	1	686	exit	MOLDOVA	01.09.2015	2015
259	20	m	19.10.1990	1	692	entry	MOLDOVA	09.10.2013	2013

- imputed movement, the date is at the half of the illogical itinerary

Assignment of a date to the missing movement

5. Calculating migration status – by MOVEMENTS, by individuals

IF
No days **ABROAD** in 1 year before the **movement**
> 275 days

IF
No days **IN COUNTRY** in 1 year before the **movement**
> 275 days

immigrant

emigrant

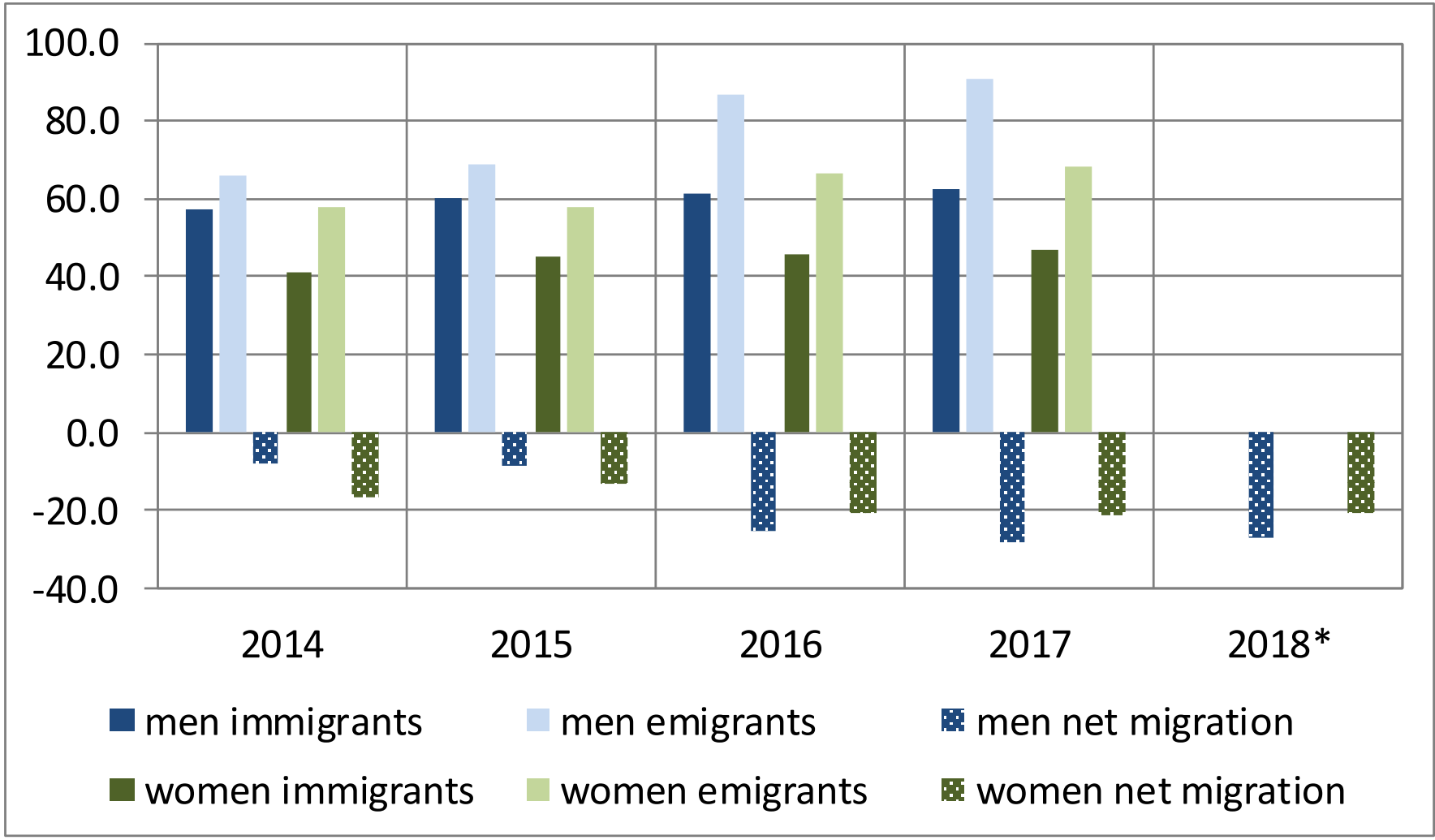
International migration by sex, 2014-2017, thou persons

2017

109,7 *Immigrants*

159,1 *Emigrants*

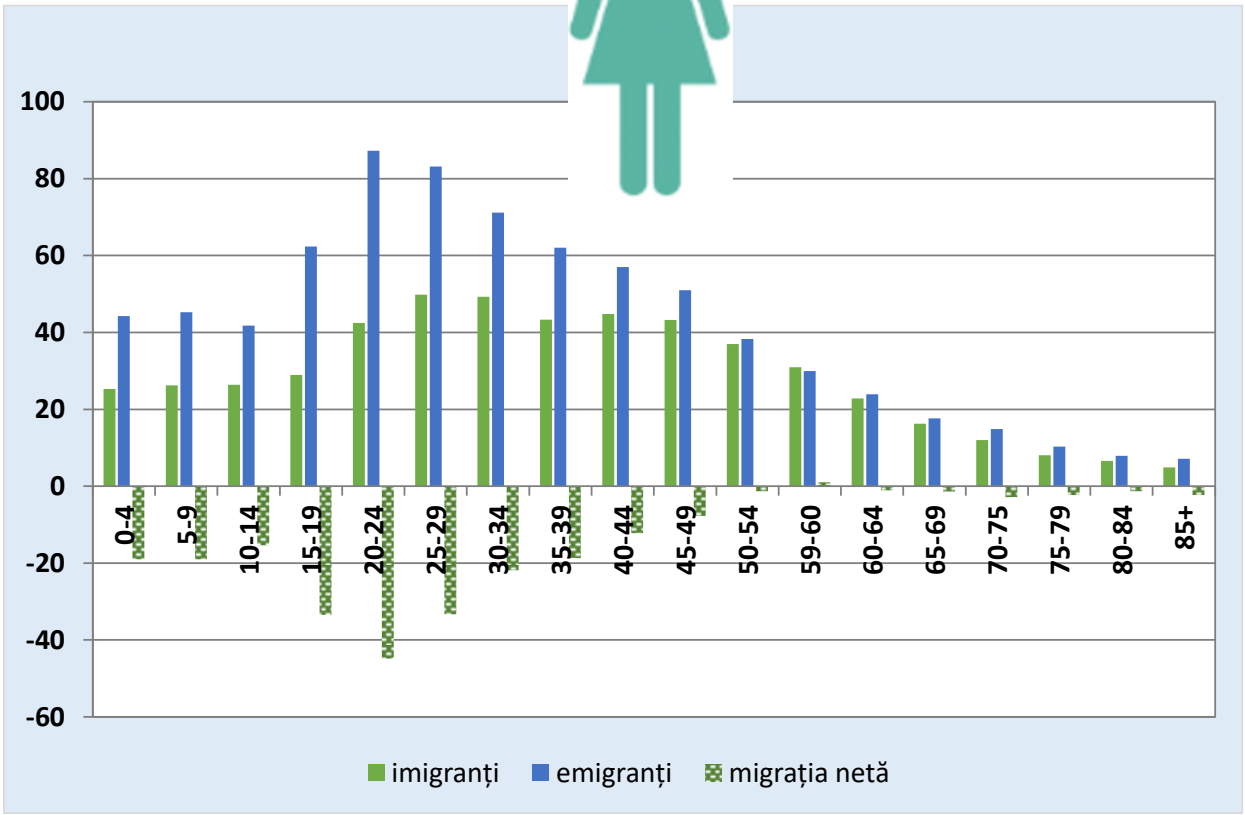
- 49,4 ***Net migration***

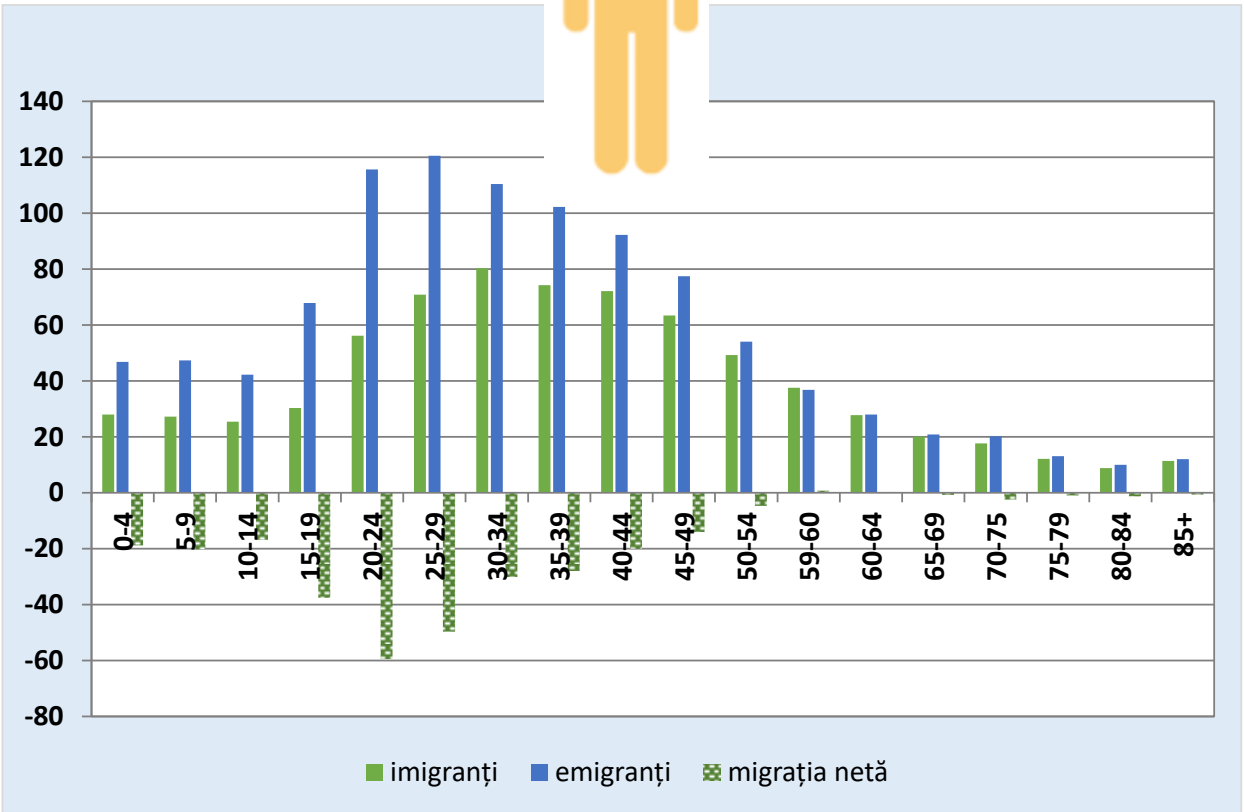


** - provisional data, based on the assumption that migration rates by age and sex registered in 2017 remained the same in 2018*

International migration by sex and age groups, 2017,

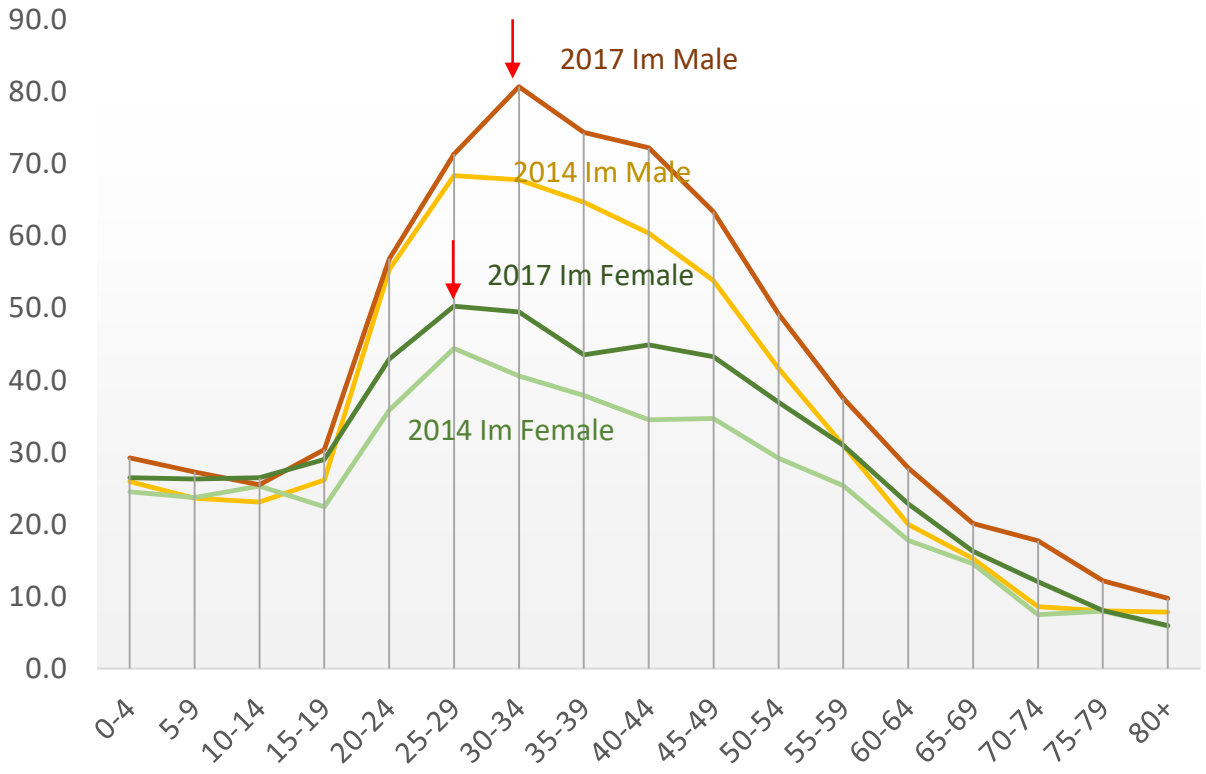
rates by 1000 persons



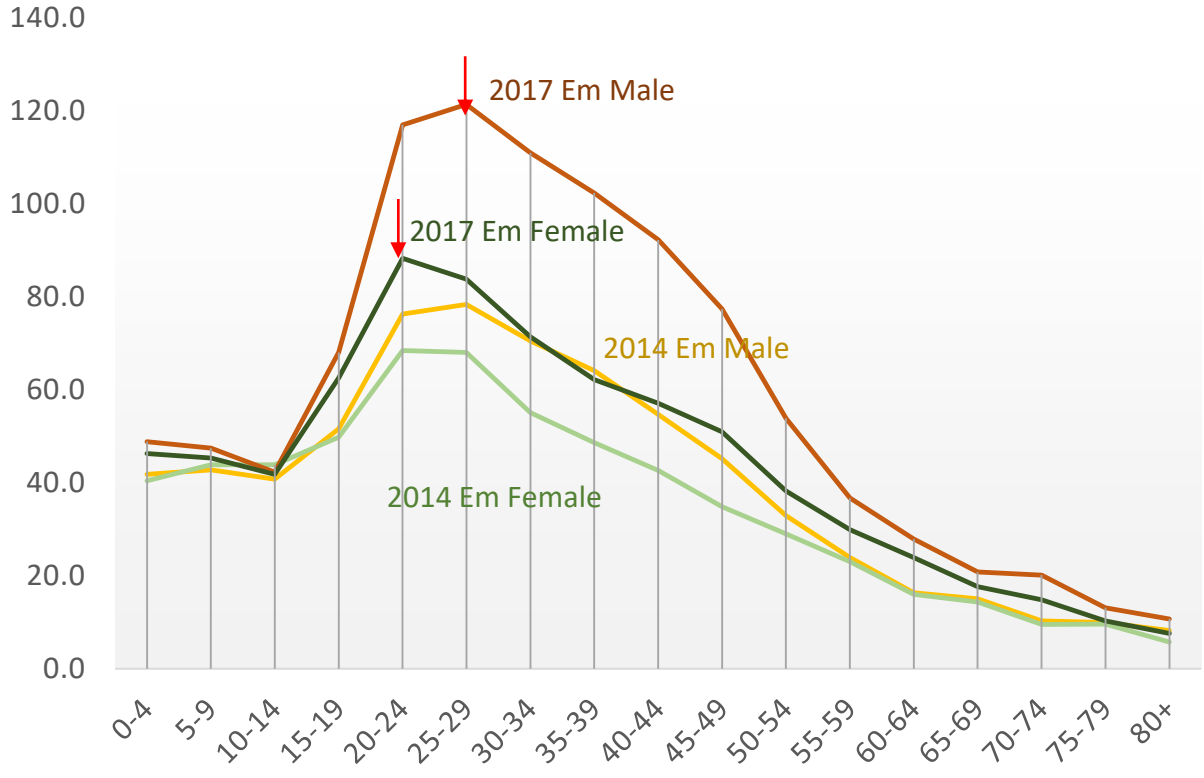


International migration by sex and age groups, rates by 1000 persons

International IMMIGRATION rates by sex and age groups, 2014 and 2017

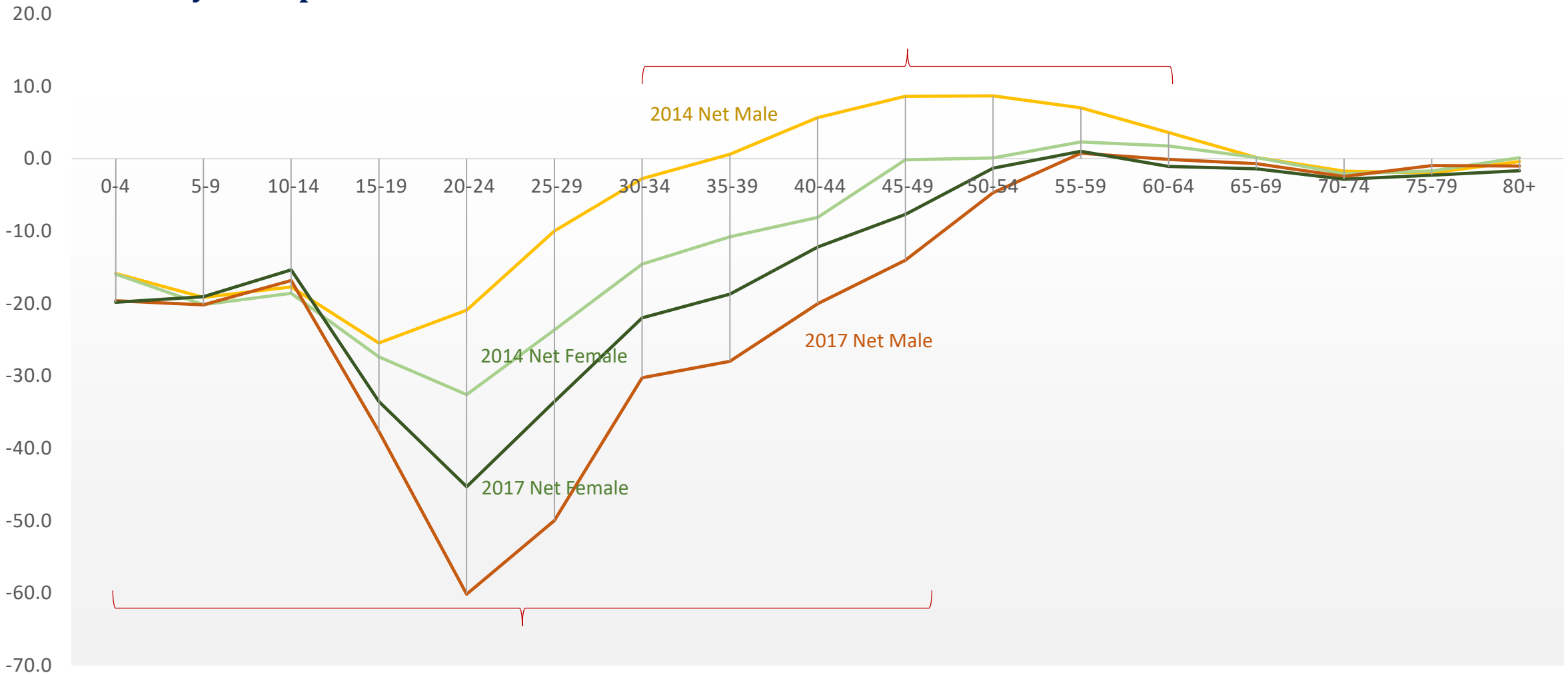


International EMIGRATION rates by sex and age groups, 2014 and 2017



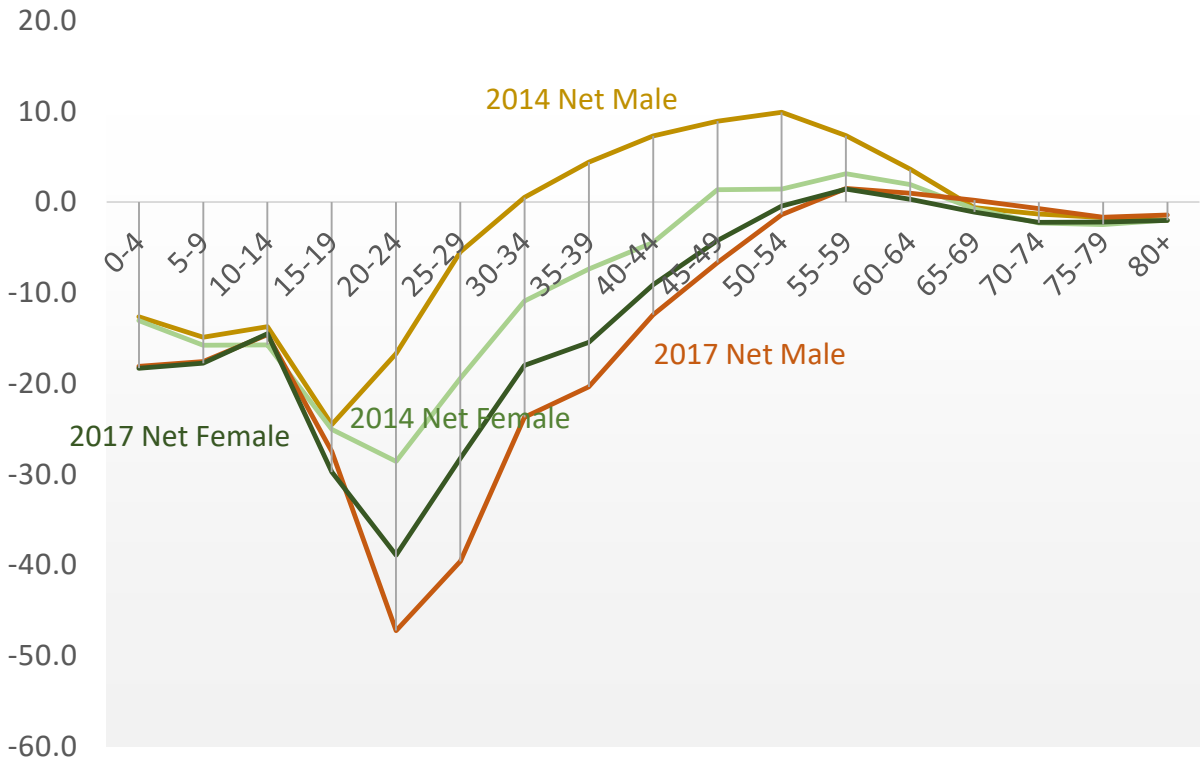
AGE & GENDER PATTERNS

International NET MIGRATION by sex and age groups, 2014 and 2017,
rates by 1000 persons

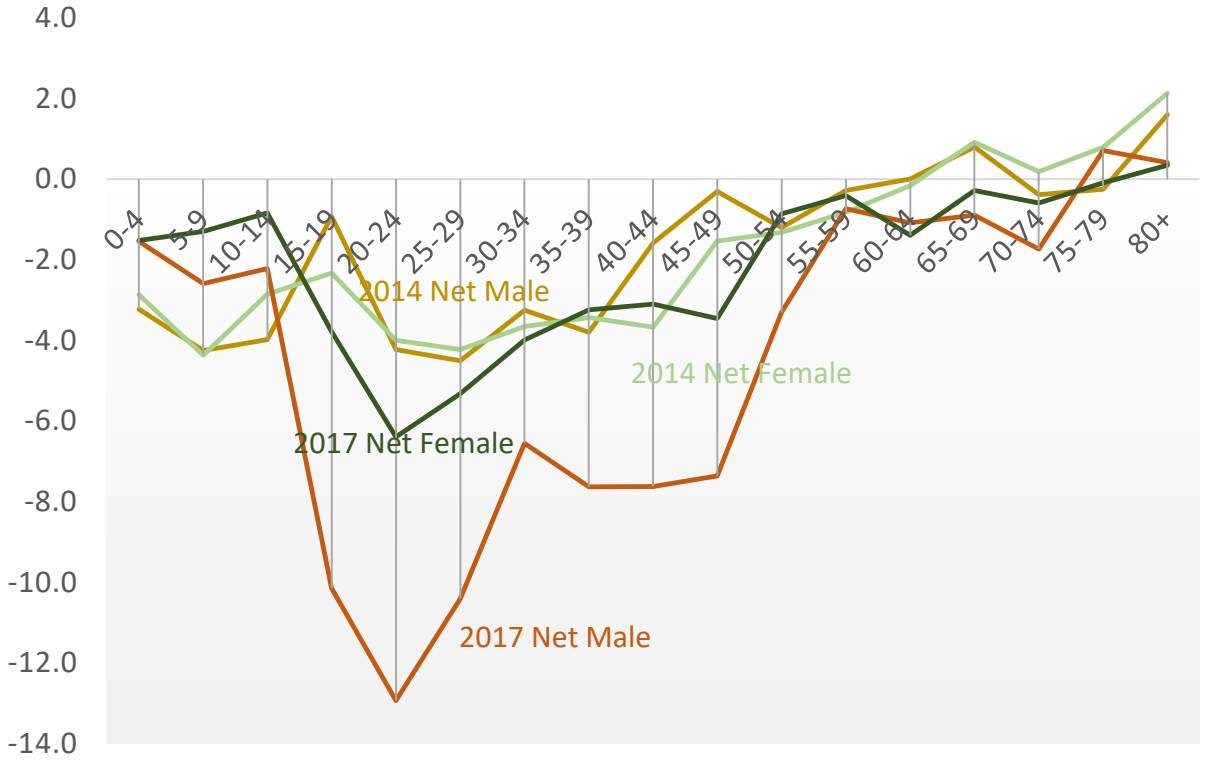


International NET MIGRATION rates, 2014 and 2017

Moldovan citizens



Foreigners



TIME SPENT ABROAD, frequency

Number of days spent abroad by usual residents of the Republic of Moldova 2014-2017

	183-274	275+	Total	
			183+	% of RM population
2014	212.4	131.2	343.6	12.0%
2015	189.0	128.3	317.2	11.2%
2016	185.2	125.6	310.8	11.1%
2017	191.0	127.0	317.9	11.5%

This numbers represent the number of different Moldovan citizens who spent abroad the stated number of days and therefore is not the simple sum of the yearly number of Moldovan citizens since many do that more than once

Sourse: Border police

Estimation of migration & usual resident population

CHALLENGES versus ACTIONS

- Lack of *reliable data* on international migration based on the definition of *place of usual residence*
- Access to individual/ personal data from administrative sources
- Double citizenship and uncontrolled border through Transnistria region
- Processing big volumes of records

✓Comparative analysis, negotiation, communication

✓Depersonalization procedures applied

✓Record linkage of 2 DB (RM citizens vs Foreigners) by name, surname, date of birth

✓Several software used to test imputation, editing, processing of about 130 mln crossings 2013-2018 *(Oracle, Visual FoxPro, R, STATA, SPSS)*

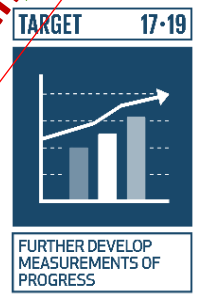
Next steps

Institutionalization of the data sharing for border-cross recording of entrances and exits to/from RM and residence address at **individual level** via Government's M-Connect **interoperability platform**

Produce UR population estimates in **territorial perspective** (at the lowest sub-national levels): internal and external migration by area of residence

Dissemination of migration data in **user-friendly** formats and meeting their **needs**

No MIGRANT left behind!



Ensure **continuity** of provision of **qualitative and reliable** population statistics for policy design, funding, monitoring & evaluation, planning and research

Mapping of available administrative registers and **develop** the **Statistical Population Register**

A better **linkage** between strategic **planning** process and the **monitoring & evaluation** process

2020

HIGH-LEVEL POLITICAL FORUM ON SUSTAINABLE DEVELOPMENT
VOLUNTARY NATIONAL REVIEWS

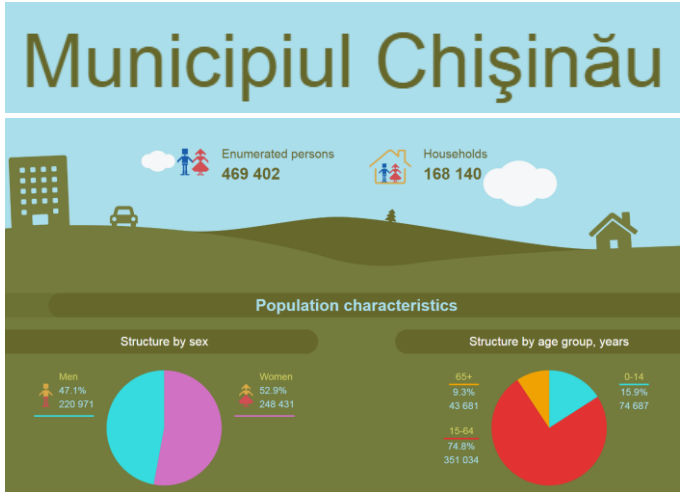
STATISTICS
Dissemination, Communication

e-application

RECENSĂMÂNTUL POPULAȚIEI ȘI AL LOCUINȚELOR 2014

http://recensamant.statistica.md

Locality passport | Tables | Infographics | Maps | About | ro en ru



mobile app

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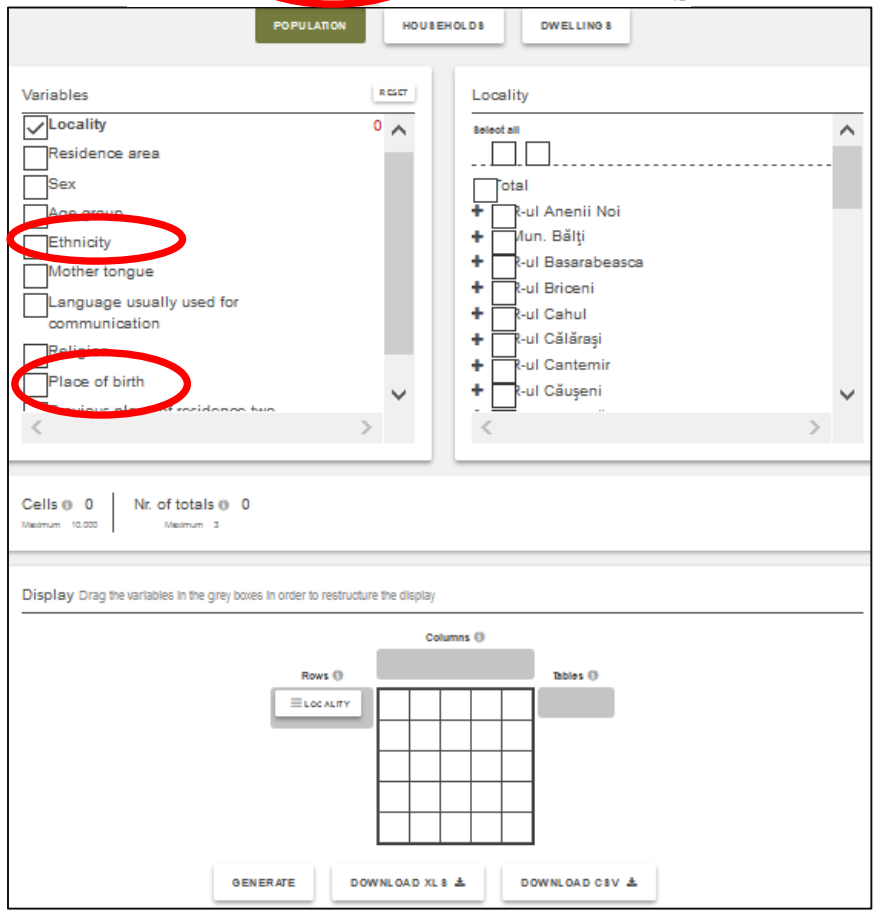

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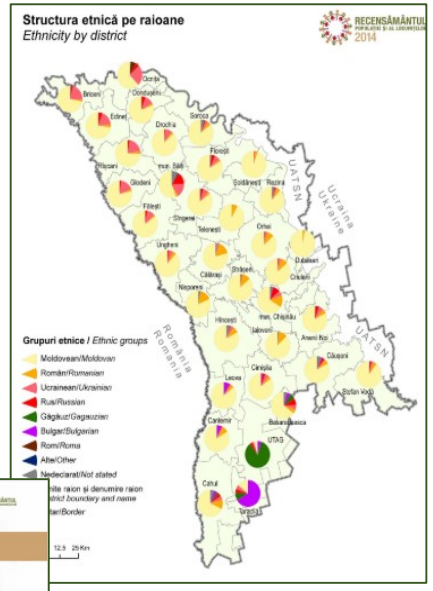


UNFPA

StatBank - online database

http://statbank.statistica.md

Labour force and earnings
- Accidents at work
- Distribution of employees by size of salary
- Earnings
- Labour cost
- **LFS – Employment and unemployment, 2000-2018 (based on resident population)**
  - Employment
  - Inactive population
  - Informal sector
  - **Labour force migration**
    - Population aged 15 years and over, working or looking for work abroad by level of education, age groups, sex, area and quarters, 2000-2018
    - Population aged 15 years and over, working or looking for work abroad by country of destination, level of education, age groups, level of education, sex and area, 2000-2018
    - Population aged 15 years and over, working or looking for work abroad by country of destination, statistical regions, level of education, age groups and sex, 2007-2013
    - Population aged 15 years and over, working or looking for work abroad by country of destination, statistical regions, level of education, age groups and sex, 2007-2018
  - Main indicators
  - Unemployment
  - Working hours

Labour Force Survey

Dedicated modules to LFS

>> Population and demographic processes >> Usual resident population and revised demographic indicators (2014-2018) >> Migration >>

Emigrants and imigrants based on border crossing data, by sex and age group, 2014-2017

1 Choose table — 2 Choose variable — 3 Show table

Emigrants and imigrants based on border crossing data, by sex and age group, 2014-2017

Information Footnotes

Mark your selections and choose between table on screen and file format. Marking tips

For variables marked * you need to select at least one value

Age groups *	Years *	Indicators *	Sex *
Total 19 Selected 0	Total 4 Selected 0	Total 2 Selected 0	Total 3 Selected 0
Age groups - total 0-4 5-9 10-14 15-19 20-24	2017 2016 2015 2014	Immigrants Emigrants	Both sexe Males Females
Search	Search	Search	Search
Beginning of row	Beginning of row	Beginning of row	Beginning of row

>> Social statistics >> Living standard of the population >> Living standard of the population >> Household incomes >>

Disposable incomes of population by household types and areas, 2006-2018

1 Choose table — 2 Choose variable — 3 Show table

Household Budget Survey

Disposable incomes of population by household types and areas, 2006-2018

Information Footnotes Metadata

Mark your selections and choose between table on screen and file format. Marking tips

For variables marked * you need to select at least one value

Years *	Sources of income	Areas	Household types *
Total 13 Selected 0	Total 12 Selected 0	Total 3 Selected 0	Total 6 Selected 0
2018 2017 2016 2015 2014 2013	..pensions ..child allowances ..compensations ..social support ..remittances	Whole country Urban Rural	Single person Couple without children Couple with children Single parent with children Other households with children Other households without children
Search	Search	Search	Search
Beginning of row	Beginning of row	Beginning of row	Beginning of row

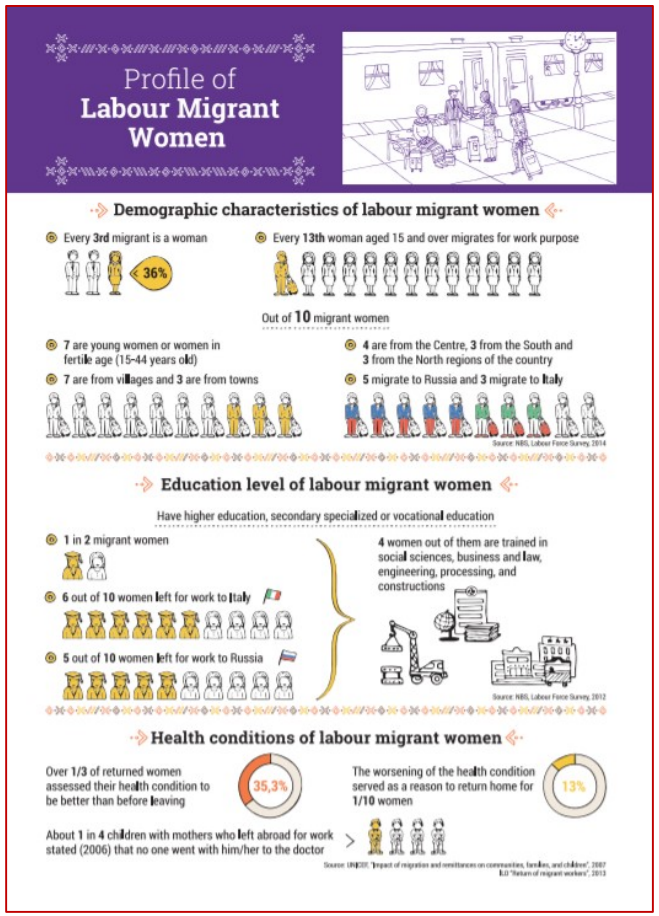
Unit *
Total 2 Selected 0
Lei, average monthly per capita Percent of total

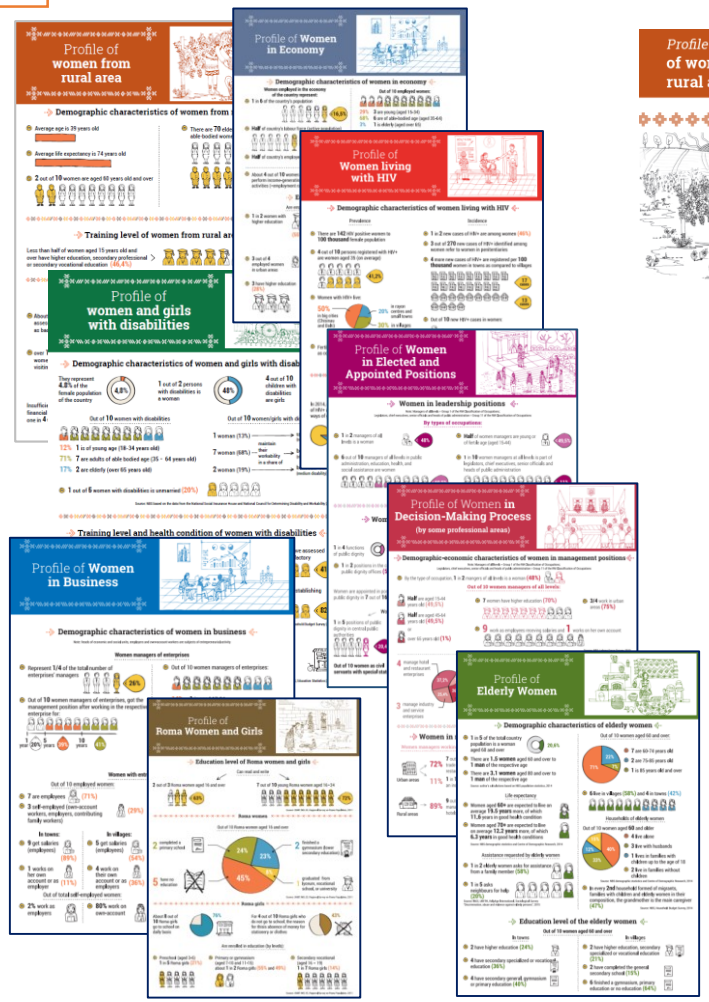
VISUALs, info-GRAPHICs & ANALYSIS

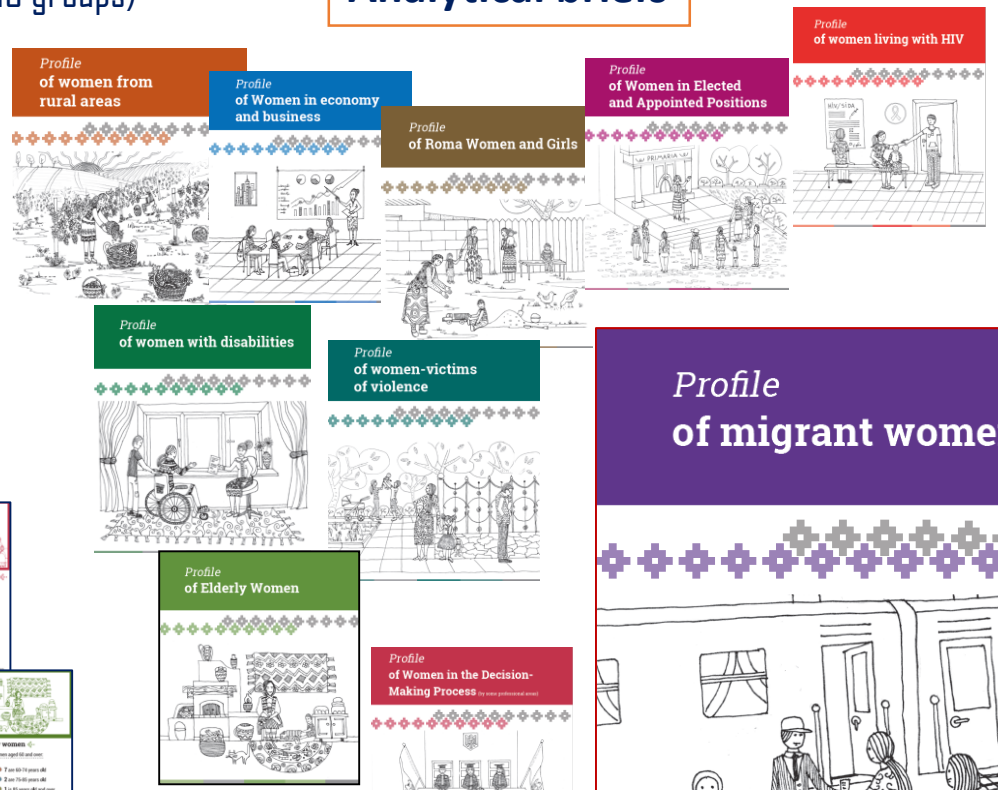
Thematic info-graphs

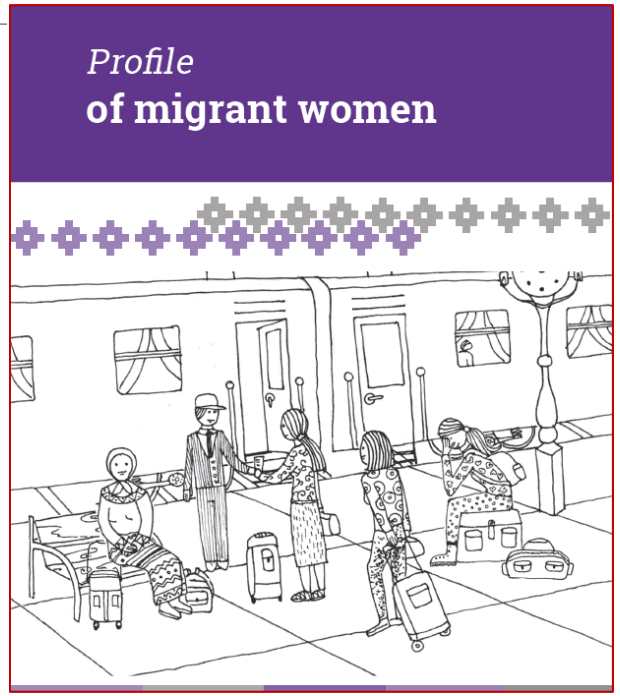
Women (most vulnerable – 10 groups)

Analytical briefs









NATIONALIZED
SDGs indicators - *migration*

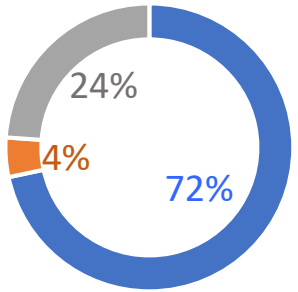
NATIONALIZATION of SDGs indicators

Oct 2017 — July 2017

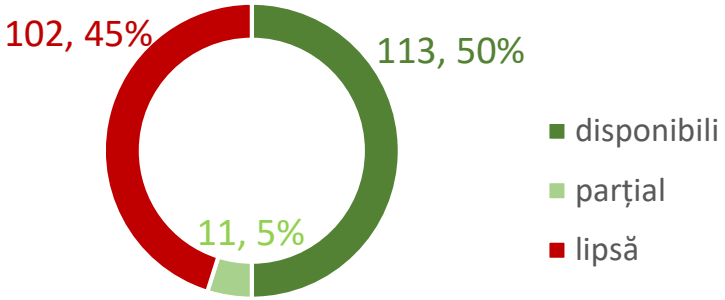
Nationalization 2017

2017

Global	162 (72%)
Global adjusted	10 (4%)
National proxy	54 (24%)
Total	226 (100%)



2017 nationalization	
Nationalized	226
including:	
NBS	81
Others	145



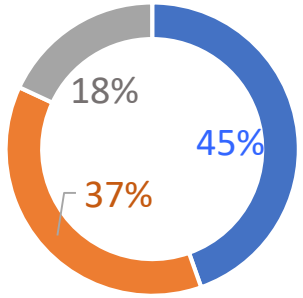
August 2018 — December 2019

Revision 2019

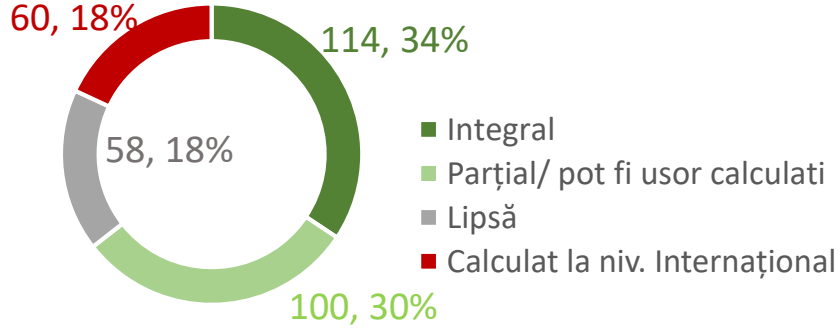
2019

Global	148 (45%)
Global divided/ adjusted	124 (37%)
National proxy	60 (18%)
Total	332 (100%)

! international comparability



2019 revision	
Revised	332 *(+106)*
including:	
NBS	113 *(+32)*
others	219 *(+74)*

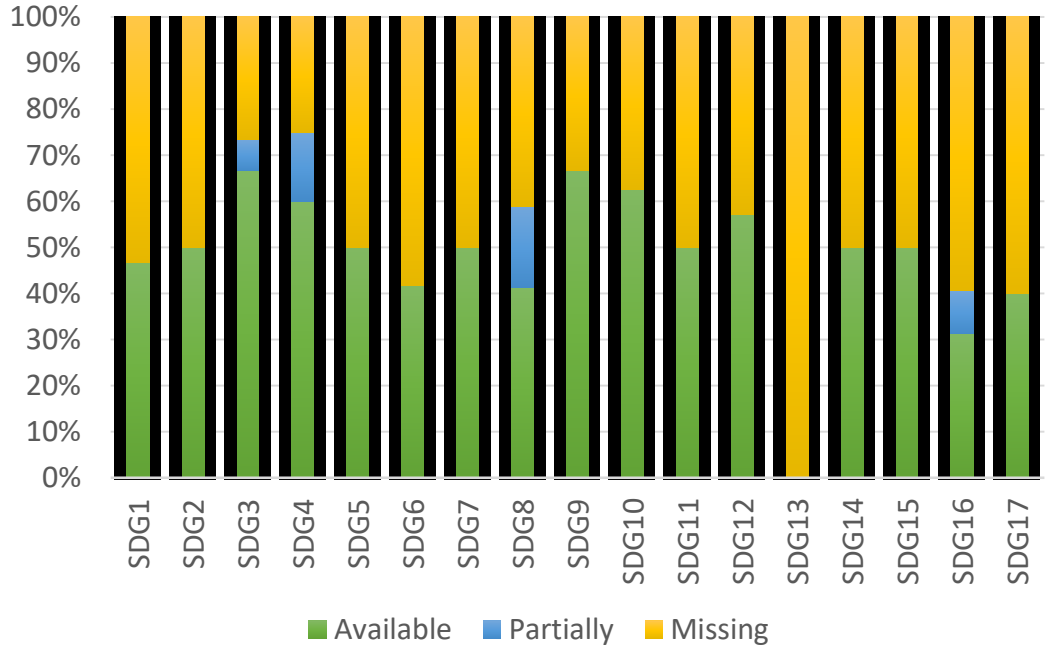


No 1 left behind!

NATIONALIZATION of SDGs indicators

Oct 2017 — July 2017

Nationalization 2017



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August 2018 — December 2019

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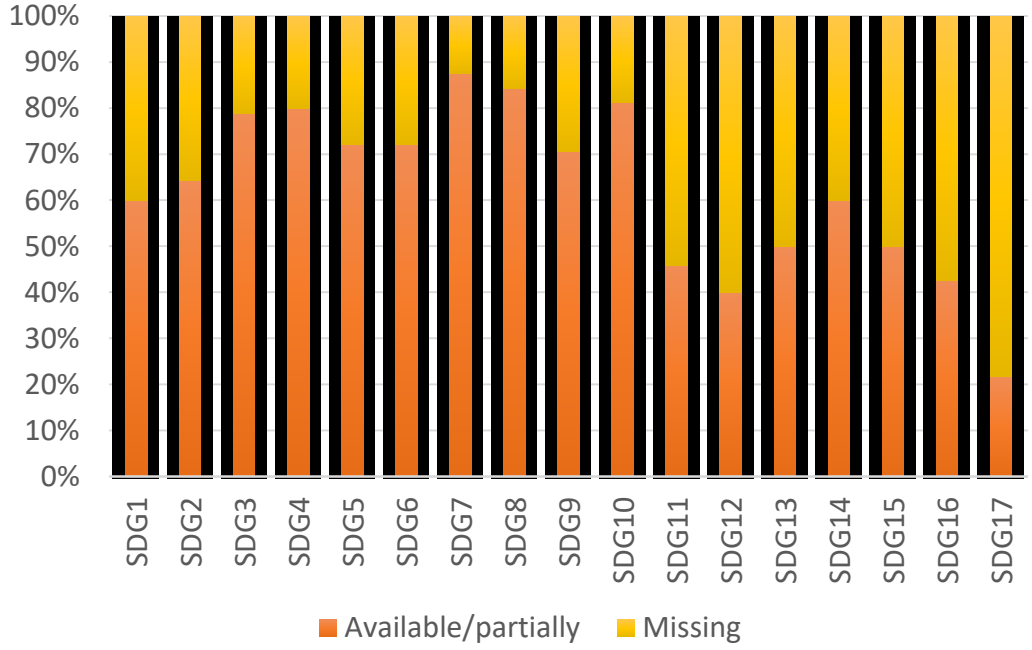


2019 revision	
revised	331 *(+105)*
including:	
by NBS	114 *(+33)*
by others	217 *(+72)*

10 SDGs indicators RELATED to migration - RM 2019

Indicator	Tier	disaggregation	type	data source	M&E
3.c.1 Health worker density and distribution	I	A: by specialties / occupations (doctors, medical staff, dentists, pharmacists), by districts, medians, by sex only doctors	global adjusted	ANSP	MoHLSP
4.b.1 Volume of official development assistance flows for scholarships by sector and type of study	I	A: total	global	global DB	MoF
8.8.1 Frequency rates of fatal and non-fatal occupational injuries, by sex and migrant status	I	A: total by accident types, sex, economic activities M: migration status, occupations	global adjusted	NBS	MoHLSP
8.8.2 Level of national compliance with labour rights (freedom of association and collective bargaining)	I	A: total	national proxy	MoHLSP, CNSM, CNPM	MoHLSP
10.7.1 Recruitment cost borne by employee as a proportion of monthly income earned in country of destination	III	Missing	global	BRD	MoHLSP
10.7.2 Number of countries with migration policies that facilitate orderly, safe, regular and responsible migration and mobility of people	III	Missing	global	MoHLSP, BMA, IGPF	MoHLSP
10.c.1 Remittance costs as a proportion of the amount remitted	I	A: total M: type of service providers; instrument used for payment /receipt of remittances	global	World Bank, National Bank	MoEc
16.2.2 Number of victims of human trafficking per 100,000 population, by sex, age and form of exploitation	Tier I	Available: total, sexes, adults, children, areas of residence, countries of expoitation, forms of exploitation	global adjusted	IGP/MoInterior	MoHLSP
17.3.2 Volume of remittances (in United States dollars) as a proportion of total GDP	Tier I	A: total	global adjusted	National Bank	National Bank
17.18.1 Proportion of sustainable development indicators produced at the national level with full disaggregation when relevant to the target, in accordance with the Fundamental Principles of Official Statistics	Tier III	A: available, partially, missing	national proxy	NBS	State Chancellary

24 SDGs indicators RELEVANT for disaggregation - RM 2019

No.	Tier	disaggregation	indicator type	data source	M&E
1.1.1	I	A: total, urban / rural; can be estimated by sex, age (15+, 15-24, 25+), occupational status (= working poor)	global adjusted	NBS/HBS	?
1.3.1	I	A: total, insured / uninsured, ages, women / men M: country of origin	global divided	MoHSPF	MoHSPF
3.1.1	II	A: total, by areas and districts	global	ANSP	MoHSPF
3.2.1	I	A: total, by areas and districts	national proxy	ANSP	MoHSPF
3.3.1	I	A: total, sexes, age groups, high risk population categories, M: area of residence	global	ANSP	MoHSPF
3.4.1	II	A: total, sexes	global	ANSP	MoHSPF
3.8.1	III	A: total	global	ANSP	MoHSPF
3.8.2	III	A: total, urban / rural, sexes and household head age, quintiles.' Possible to estimate separately for households with children (0-17 years), or with migrants	global divided	NBS/HBS	MoHSPF
4.1.1	III	A: by sexes, areas M: Disability status, socio-economic status, ethnicity	global divided	PISA	MoEdu
4.3.1	II	A: total, age, gender, urban / rural M: income - not foreseen, not available	global adjusted	NBS/LFS	MoEdu
4.6.1	II	Irrelevant			
5.5.2	I	A: total, rural / urban, on eco-nomic activities, forms of property	global	NBS/LFS	MoHSPF

No.	Tier	disaggregation	type	data source	M&E
8.3.1	II	A: total, sexes	global	NBS/LFS	MoHSPF
8.5.1	II	A: total M: by occupation, age, disabilities	global adjusted	NBS/wages	MoHSPF
8.5.2	I	A: total, sexes, age group and disability; M: disabilities	global	NBS/LFS	MoHSPF
8.6.1	I	A: total, sexes, age groups (15-24 years, 15-29 years, 15-34 years)	global	NBS/LFS	MoHSPF
8.8.1	I	A: total by accident types, sex, economic activities M: migration status, occupations	global adjusted	NBS/wages/accidents	MoHSPF
8.8.2	I	A: total	Nat. proxy	CNSM	MoHSPF
8.10.2	I	A: total, types of accounts, sexes M: by income, age, level of education, urban / rural	global + national proxy	NBM	NBM
10.2.1	III	A: total, sexes, age groups, persons with disabilities	global	NBS/HBS	MoEco
10.3.1	III	A: sexes, age group, residence area, discrimination criteria, entities in which they were discriminated	global	CPEDAE	CPEDAE
11.1.1	I	A: total, urban / rural, quintiles, sexes, age groups, disability	global divided	NBS/HBS	MoEco
16.1.3	II	A: total, urban / rural, age, education; M: citizenship, ethnicity, incomes	global adjusted	NBS/violence	MoHSPF
16.9.1	I	A: total, age, sexes, areas	global	NBS, ANSP	MoHSPF

RE-USE of data for SDGs

URBAN MOBILITY PLAN DEVELOPMENT IN CHISINAU

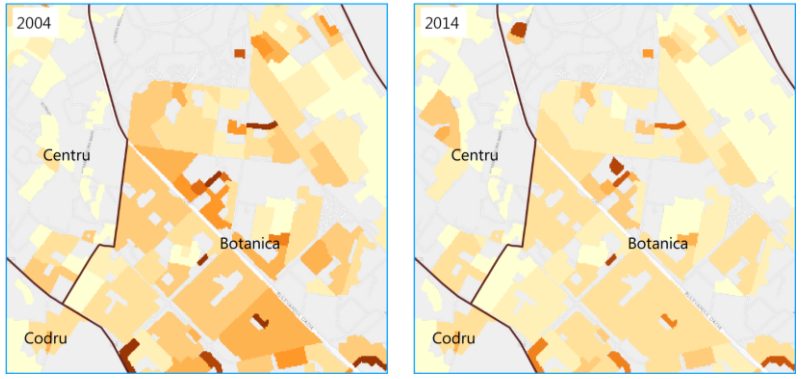
URBAN AND PERI-URBAN LAND USE / LAND COVER CLASSIFICATION AND ASSOCIATED CHANGES

CENSUS-BASED POPULATION DISTRIBUTION/ DENSITY (BY DAY AND NIGHT)

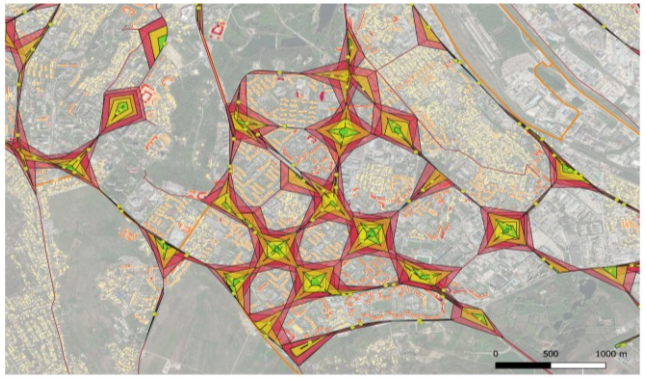
INSIGHTS INTO RECENT POPULATION AND MOBILITY TRENDS

Multiple sources:

- Orthophoto (MD GeoPortal & private)
- ESA Earth observation data
- Cadastral limits and building footprints
- Census data (NBS)
- Call Detail Records
- Electricity consumption data
- GIS roads, railways network and public transportation, stations/nodes
- Micronarratives



Night-time population of Chisinau



Walking distance from each bus stop

Potential analysis:

- Mobility & Network Analysis
- Connectivity between bus stops and residential areas
- Urban transport demand
- Distance to specific hotspots (schools, hospitals, fire departments, etc)

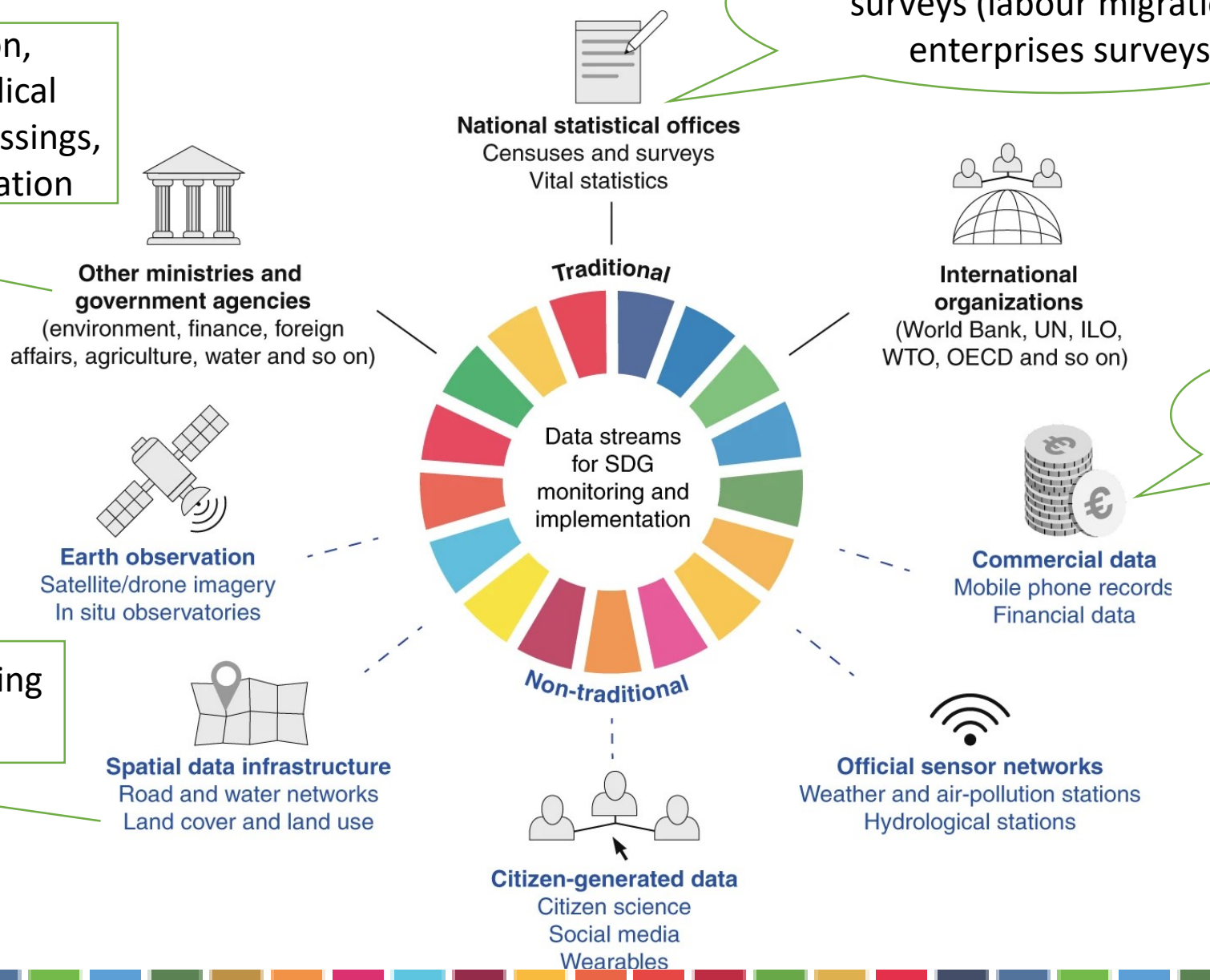
TARGET 11·2

AFFORDABLE AND SUSTAINABLE TRANSPORT SYSTEMS

Data sources used

Civil registration, birth/death medical records, border crossings, foreigners registration

Census, HBS, LFS, Dedicated surveys (labour migration), enterprises surveys



Orange CDRs, Balance of payment

Land and building cadastre

CONCLUSIONS, LESSONS LEARNED, NEXT STEPS

Conclusions

- Migration is a **key issue** in RM
- Moldovans are **intensively involved in international migration** in **both directions** challenging existent migration definitions and concepts
- Migration should **not only** be measured in terms of the **net migratory balance**: high exposure of RM inhabitants to other cultures and countries may have extremely **positive implications** and open **new opportunities**
- Based on a **solid basis**: the border-cross recording of entrances and exits to/from RM at **individual level**, but **depersonalized** data
- For each individual it was possible to **calculate accurately** how much **time was spent abroad/in-RM**
- Migration estimates was calculated using **international recommended definitions**
- For the **first time** in many years RM has a **full and realistic picture** of **migration flows** in and out the country

Lessons learned

- **Partnerships** with data holders and data users- guarantee for success through **cooperation** & **collaboration**
- **Continuous communication** throughout the process within the **data value chain**
- **Diversification** of statistical practices and **innovative** approaches
- **Harmonization** of the core and secondary **legislative & regulatory framework**
- **Acceleration of the modernization in statistics**
- **Peer-to-peer learning** and **sharing**

Challenges

- Lack of methodologies for estimating indicators at global level, their continuous updating
- The correspondence between global and national methodologies (often lacking)
- The estimation of some composite indicators implies data from different institutions
- The challenges related to the CPA reform, changes in state institutions, institutional memory
- Relations between state institutions and subordinate ones
- Lack of understanding of what needs to be presented
- Limited human capacities and data literacy

Short-term PRIORITIES

A better **linkage** between strategic PLANNING process and the MONITORING & EVALUATION process

Strengthen intra- and inter-institutional **cooperation** in terms of monitoring DATA and INFORMATION NEEDED for the planning/monitoring processes

Strengthen **capacities** for MONITORING, REPORTING and EVALUATION in ministries and other public authorities –

Develop **capacities** for DATA PRODUCTION - accurate, timely and disaggregated

TARGET 17·14

ENHANCE POLICY COHERENCE FOR SUSTAINABLE DEVELOPMENT

TARGET 17·16

ENHANCE THE GLOBAL PARTNERSHIP FOR SUSTAINABLE DEVELOPMENT

Statistical annex

VNR 2020

Mulțumesc!

THANK YOU!