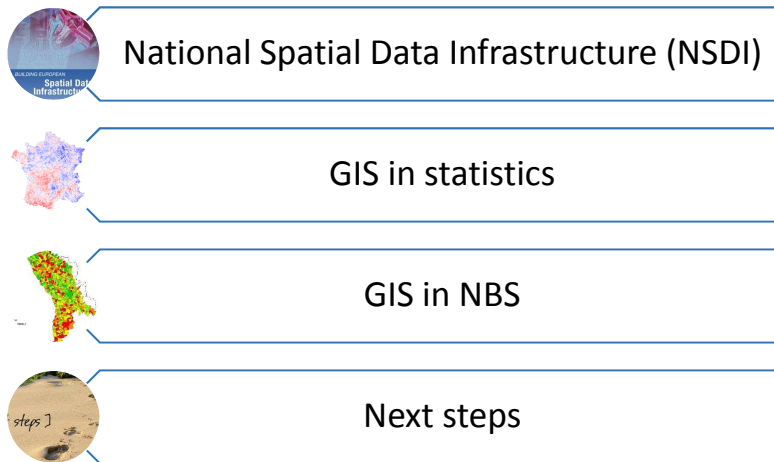# Use of GIS technologies in statistics

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Introduction

National Spatial Data Infrastructure (NSDI)

GIS in statistics

GIS in NBS

Next steps

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National Spatial Data Infrastructure

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Cooperation

Standards

Abilities

SDI

Metadata

Geoportal

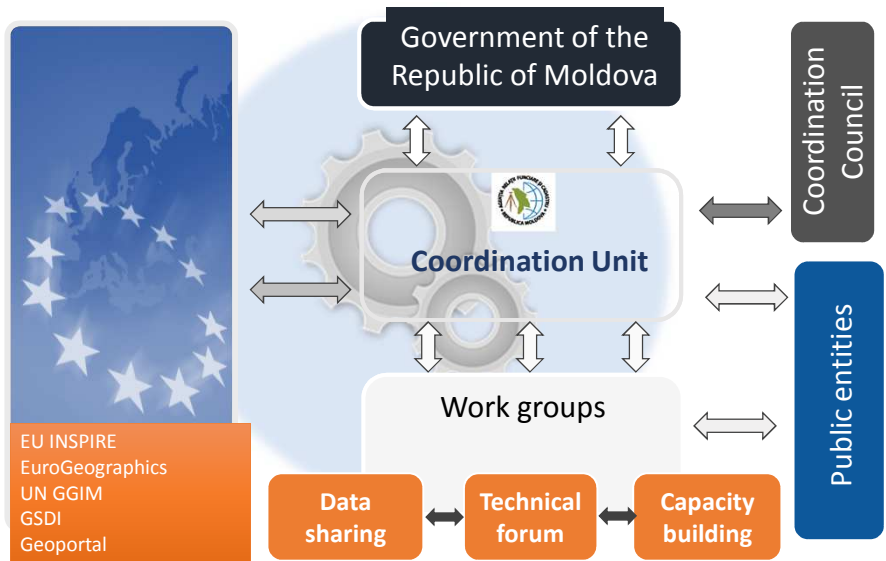Legislation

Spatial Data

Services

Law no. 254 regarding NSDI was approved by Parliament on 17.11.2016

Aligned to European Directive INSPIRE

Regulates the responsibilities for data producers, contents of metadata, data sharing, etc.

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NSDI - organisation

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Government of the Republic of Moldova

Coordination Council

Coordination Unit

Public entities

Work groups

EU INSPIRE
EuroGeographics
UN GGIM
GSDI
Geoportal

| Data sharing | Technical forum | Capacity building |

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Access to the spatial data

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Before 2014
- Maps on paper
- Shapefiles - hard copy on request
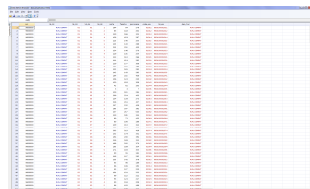- With payment

2014 →

After 2014
- Reference geodetic maps – WMS, WMTS
- Cadastral data – hard copy on request, in the future – WMS
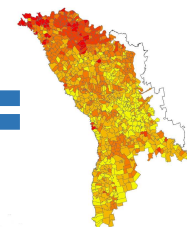- Free of charge

GIS in statistics – introduction

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Reference geodetic maps   +   Statistical data   +   Information technologies   =   Computer visualization of spatial databases

GIS in statistics – changes

2007
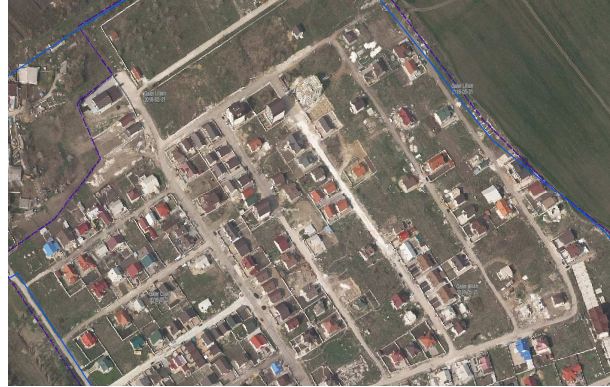
2016

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GIS in statistics - resources

Software – 1 ArcGIS for Server 10.4.1 license and ArcGIS for Desktop 10.4.1 standard license

Hardware – ArcGIS installed on 4 desktops. Needs – two at least 19" screens for each workstation

Human Resources – at the moment 2 GIS specialists

In the organizational structure – GIS Unit under Statistical Methods Division

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GIS in statistics

Production

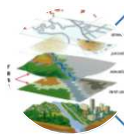Quality checks in Census

Data collection

Data analysis

Dissemination (Census data):

At the raion level

At the commune level

At the locality level

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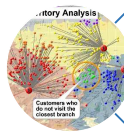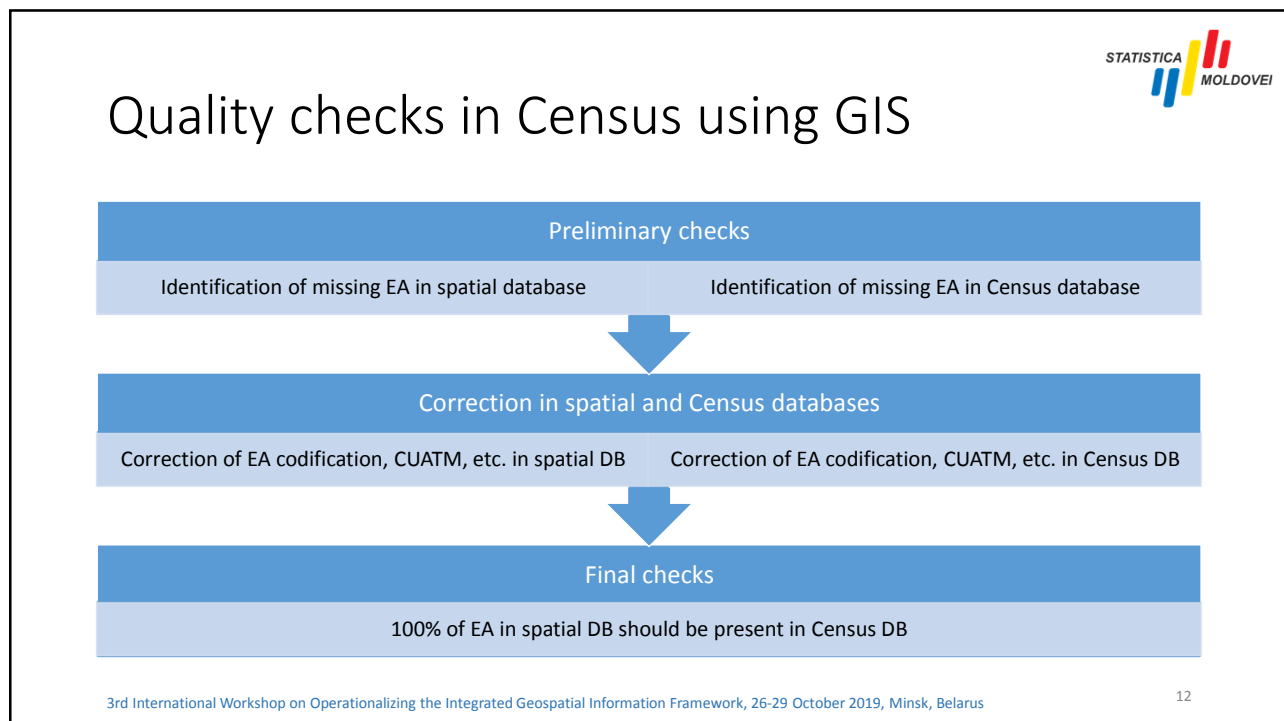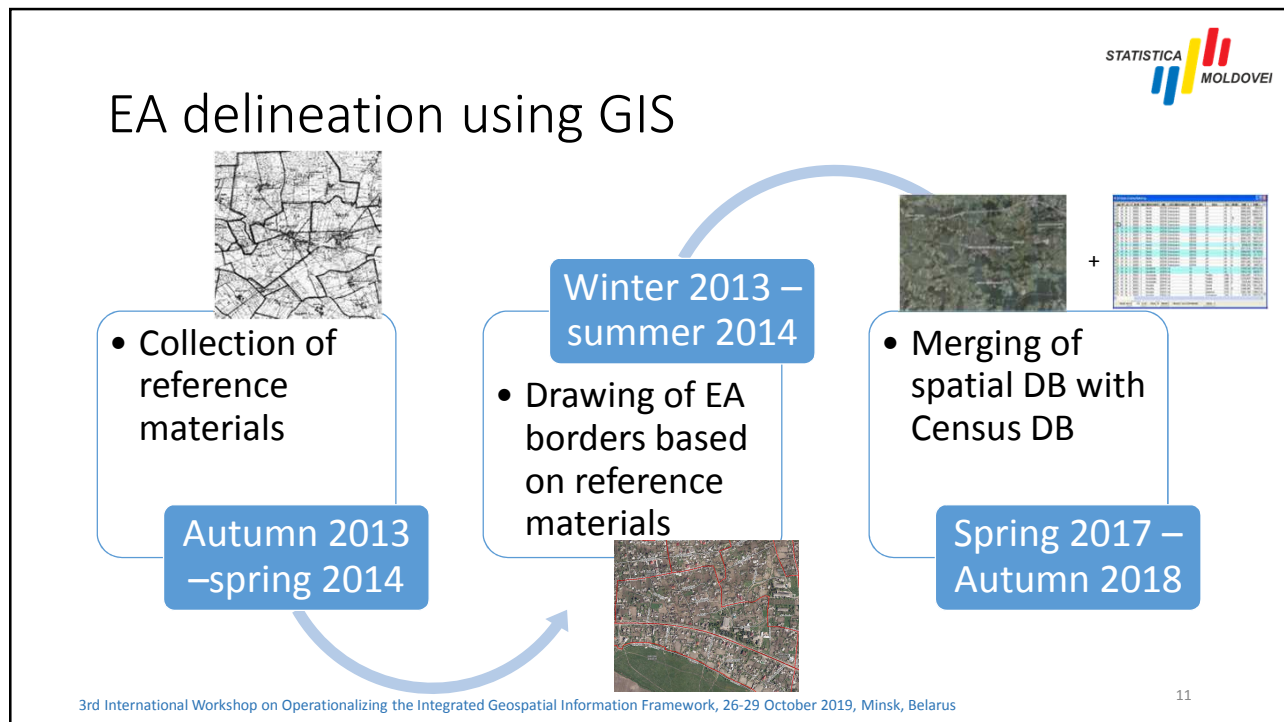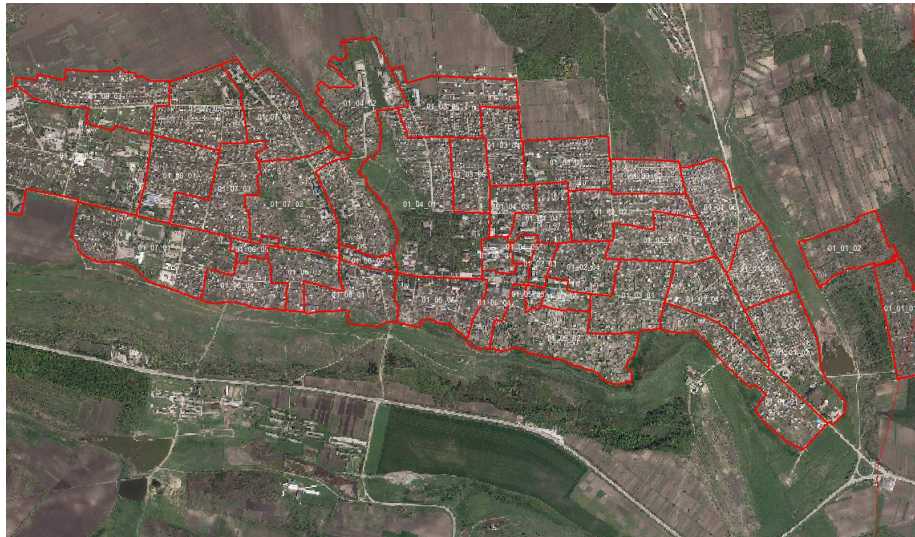
9

GIS in statistics - production
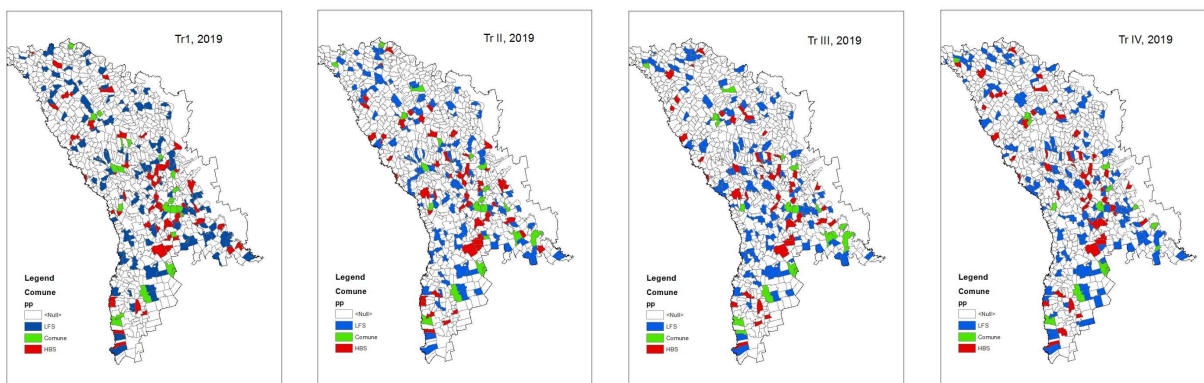
Quality check in Census

Data collection

Data analysis

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# EA delineation using GIS

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- Collection of reference materials

Autumn 2013 –spring 2014

Winter 2013 – summer 2014

- Drawing of EA borders based on reference materials

- Merging of spatial DB with Census DB

Spring 2017 – Autumn 2018

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Quality checks in Census using GIS

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Preliminary checks	
Identification of missing EA in spatial database	Identification of missing EA in Census database

Correction in spatial and Census databases	
Correction of EA codification, CUATM, etc. in spatial DB	Correction of EA codification, CUATM, etc. in Census DB

Final checks
100% of EA in spatial DB should be present in Census DB

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Master Sample Frame

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Support to sampling activities – visualization of the sample

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Support to sampling activities – distance evaluation

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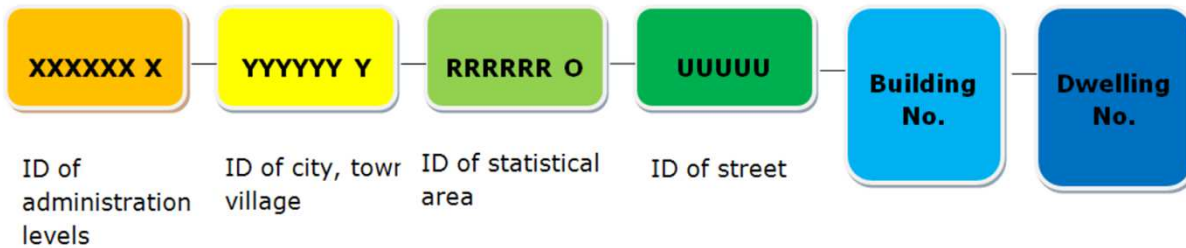
15

GIS in statistics – dissemination (spring 2017)

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GIS in statistics – dissemination (summer 2017)
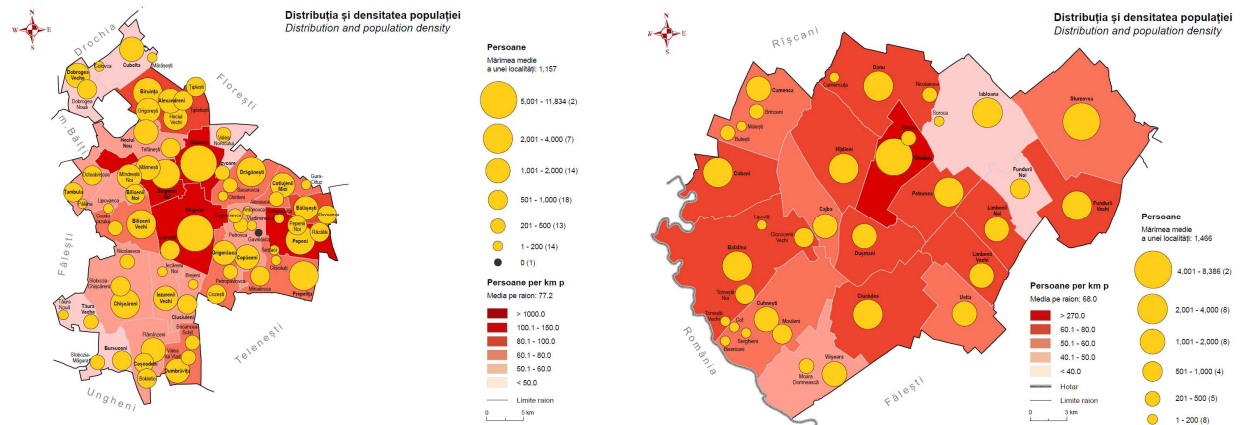
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Data collection at the address points level

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September – December 2019 – testing of data collection at the level of address points

70 fieldworkers, 7 supervisors and 2 coordinators

Data about all buildings and dwellings in 202 PSUs

- Bulding type
- Use of the building
- Address
- X,Y coordinates
- Ocupational status of the dwellings

Data collection – mobile app Census Fieldwork
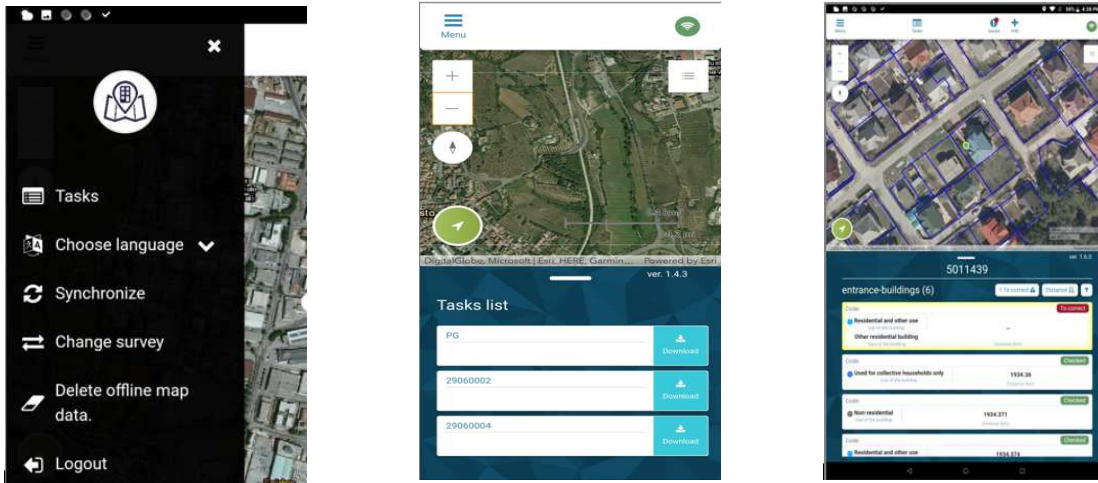
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Data collection - Dashboard
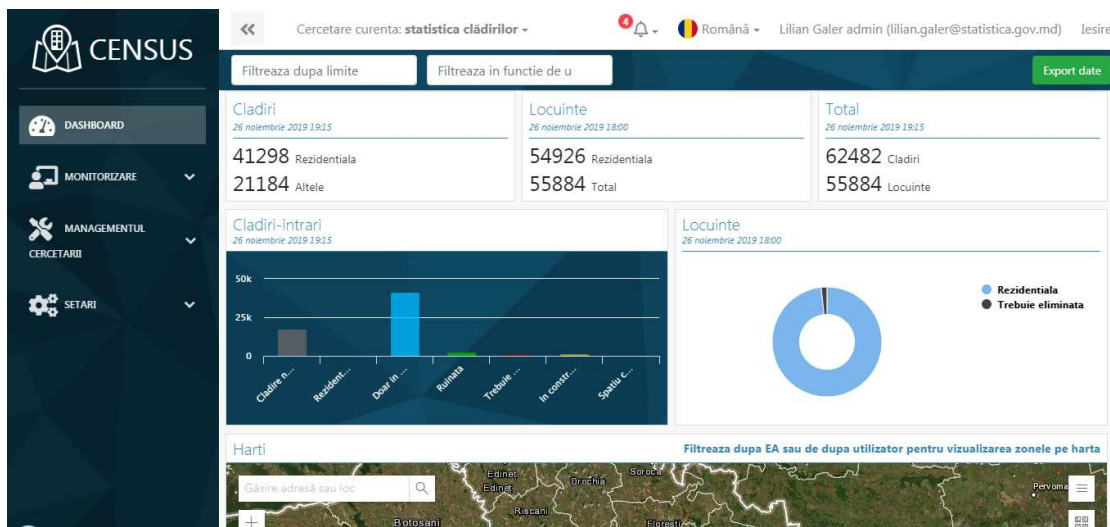
20

Data collection – results at 26.11.2019

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• 62482 buildings collected   55884 dwellings

Cladiri-intrari

COD: 71019fc9-8a6d-4a35-a7b9-27b45cf46930

UTILIZAREA CLADIRII: Doar in scop rezidential, TIPUL CLADIRII: Casa individuala,
EXISTENTA DENUMIRII STRAZII: No, EXISTENTA NUMARULUI CLADIRII: No, EXISTENTA BAREI: No,
NUMARUL SCARII: 0, POZI?IA DE DETECTARE: 47.769950380860735, 27.46284967117129

CHILD TABULAR LAYERS: dwellings (1)

ULTIMA ACTUALIZARE: 13 noiembrie 2019 18:25

ULTIMUL UTILIZATOR ACTUALIZARE: Lia Poting

+ Adaugati subiectul

Transfocare la

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Next steps

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• Creation of a statistical Building and Dwelling Register
• Preparation for the PHC 2020 round (EAs/statistical units delineation)
• Collecting data using GIS technologies
• Monitoring of data collection
• Geocoding of Business Register
• Production of SDG indicators
• Dissemination of the PHC at the level of grids
• Building of a statistical geoportal

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Next steps – creation of Buildings and dwellings register

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Coding of the data at the level of address point

| XXXXXX X | YYYYYY Y | RRRRRR O | UUUUU | Building No. | Dwelling No. |

ID of administration levels — ID of city, town village — ID of statistical area — ID of street

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Next steps – data collection and monitoring

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Enumerator tracking

Next steps – SDG indicators

The possibility to calculate the SDG indicators:

- SDG indicator 11.2.1: Proportion of population that has convenient access to public transport, by sex, age and persons with disabilities
- SDG indicator 11.3.1 Ratio of population growth rate to land consumption rate
- SDG 11.7.1 Average share of the built-up area of cities that is open space for public use for all, by sex, age and persons with disabilities

Better monitoring of SDG indicators on territorial breakdowns and over time

Next steps – dissemination of grids
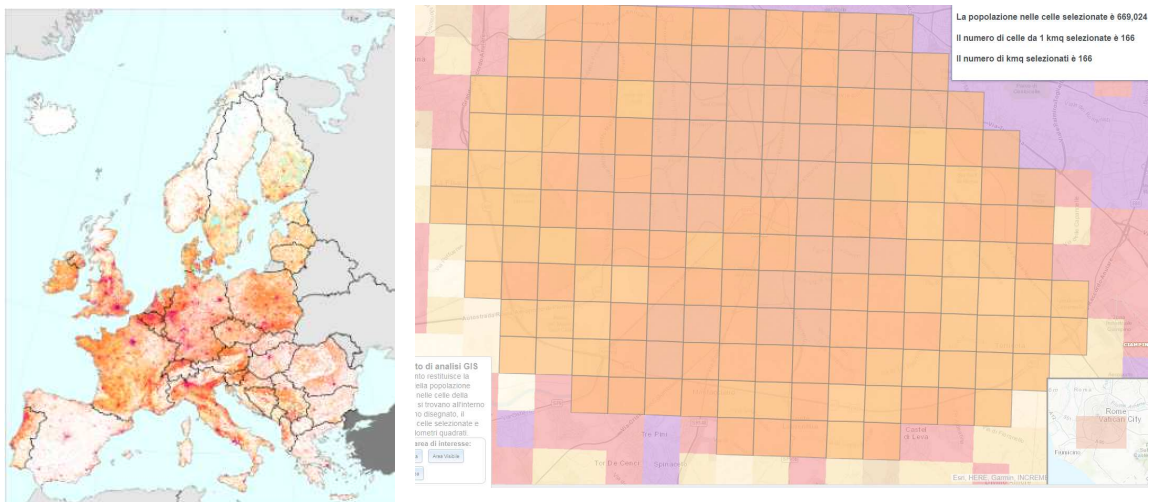
Next steps – building of a statistical geoportal
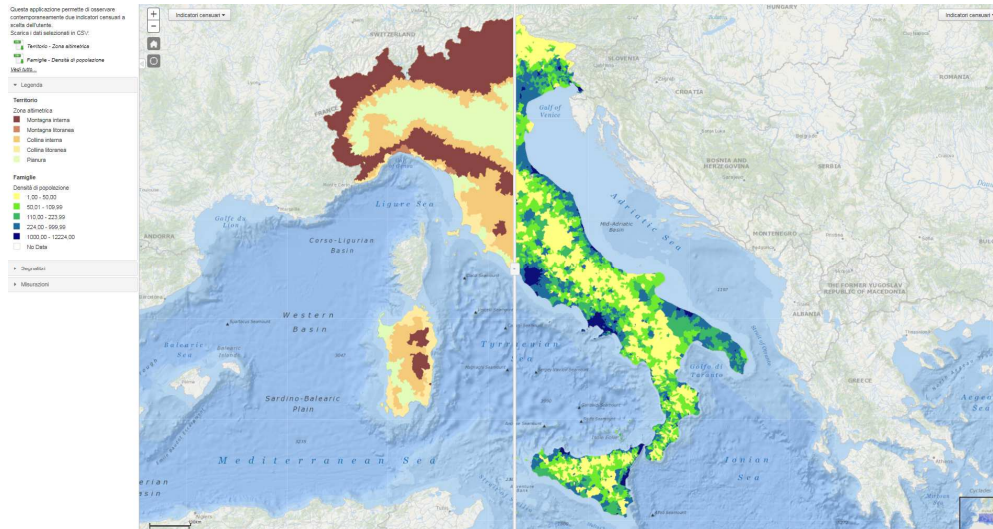
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Challenges

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Issues related to data disclosure control

Availability of detailed statistical data

Sometime different classifications are used by the owner of spatial data

Insufficient human resources

Insufficient capacities/knowledge

Lack of powerful workstations

Quite high costs at the beginning

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Thank you!
Questions?

lilian.galer@statistica.gov.md