Evaluation of the Webinar

#1: Data integration in Europe – A perspective on challenges, findings, added value and cost savings in the EU context

15 March 2023

Synopsis

UN-GGIM: Europe | Line of Work on Data Integration

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FIGURES

INTRODUCTION

During previous years, the UN-GGIM Europe Working Group on Data Integration has analysed current and future trends in geospatial data integration. Examples of best practices have been collected and data integration methods that are especially relevant in a European context have been identified. This has resulted in a series of recommendations aiming towards an enhanced geospatial data integration experience, both at national and European level. The recommendations address technical and methodological bottlenecks, but also discuss challenges related to organisational setup, use of resources and capacity building.

The new webinar series will follow-up and focus on these main recommendations. This first webinar in the series will take stock of data integration experiences and perspectives at the level of EU institutions and services. Findings and challenges related to both data production, integration and analytical use will be considered. This webinar is designed as a scene-setter and introduction to the more focused settings that will follow later this year.

PARTICIPATING PARTIES

1. UN-GGIM Europe Line of Work 'Data Integration'

The UN-GGIM: Europe Working Group on 'Data Integration' supervises two Lines of Work. One Line of Work addresses geospatial data in the context of the 'Sustainable Development Goals' and the other one of 'Data Integration'. In the past years the Working Group achieved its goals and delivered several strategic-conceptual recommendations on the topic. Some are included in a 'Policy Paper' as a 'Call for Action' in order to guide and recommend on how to improve data integration, to address the challenges and obstacles for integration of data and to provide facts for evidence-based policy making.

Presentation title:
Setting the scene: conclusions of the previous work of the working group on data integration

2. Eurostat – Geographical Information System of the Commission (GISCO)

GISCO is a permanent service of Eurostat that answers the needs of Eurostat and the European Commission for geographical information at the level of the European Union (EU), its Member States and regions. More information can be found here.

Presentation title:
Geospatial data integration and statistics – experiences and outlook

3. DG REGIO

The European Commission's Directorate-General for Regional and Urban Policy is responsible for the conception and implementation of EU cohesion policy. Geospatial data and regional and territorial statistics are an essential part of the data infrastructure the DG uses to underpin the conception of the policy and related analysis and reporting.

Presentation title:
Challenges and opportunities regarding geospatial data integration for EU-wide territorial policy support

4. Joint Research Centre (JRC)

The JRC is the European Commission's science and knowledge service for over 60 years. The mission is to support EU policies with independent evidence throughout the whole policy cycle. The JRC Digital Economy Unit is contributing the two EC priorities: "A European Green Deal" and "A Europe fit for the digital age". In this context, the European Strategy for Data, aiming at establishing a single market for data, is setting up a series of common EU sector-specific Data Spaces. The Implementing Act on High Value Datasets (HVD) defines specific rules in support of the commitments in the Open Data Directive. The thematic categories include geospatial, statistical, Earth Observation, environmental, Transport and Weather datasets, which are very relevant to the UN-GGIM. In particular, three HVD categories

(Geospatial, Earth Observation and Environment, and Mobility) are based on INSPIRE technical provisions and concepts.

Presentation title:
Data integration, an asset for policy support and research

OBJECTIVES

- Provide an up-to-date overview of some major EU experiences in geospatial data integration, including aspects of actual data production and use for research and policy support purposes.
- Provide a forum for discussion on key challenges in European geospatial data integration including various stakeholders.
- Encourage opportunities for future cooperation and joint work, both within the framework of the working group and/or on a bilateral or multilateral basis among stakeholders.

OUTCOME OF THE DISCUSSION

Questions raised during the webinar via Slido:

What are the main obstacles of using geo data from different countries? How to ensure analyses are similar in different countries ? *Answer: There are many obstacles EU/EC are facing, e.g. the lack of harmonisisation or accessibility of data. Another challenge is the lack of knowledge of data and content and the challenge of using the data in a way that makes sense. Therefore, efforts are needed to collect, harvest and integrate data from various data providers, such as the member states, aiming to provide harmonised pan-European data sets.*
Could you provide the definition of "data integration" in the UN-GGIM community? *Answer: An example for data integration is the combination and linkage of geospatial data with and to statistical data. But it could also mean to combine geospatial data with data from other domains, such as environmental, health, agricultural data. To make the data integration possible, there are many obstacles such as data harmonisation, edge matching, etc. For more information please see:* *UN-GGIM: Europe: Analysis of future trends in geospatial data capture, creation, maintenance and management and recommendations for amplified use of good practices: https://un-ggim-europe.org/wp-content/uploads/2021/11/UNGGIM-Europe_WG_DataIntegration_Subgroup-II_DataIntegrationMethods.pdf*
Who takes the responsibility for maintaining and running the needed IT components (e.g. ontology)? EC-JRC? GISCO? Any other authority that has to be created? *Answer: It depends and is different for each topic and domain as each of them has different demands.*
Is there an assessment of the impact of the aggregation level (grid size, method of estimating distances, classification levels) in the resulting map? *Answer: Yes, there is. For example the grid size is chosen for a 1 km² grid and the classification classes are different depending on the topic / theme.*
There seems to be a need for a European-wide geospatial agency to drive national and regional agendas and requirements. Is this feasible/practical? *Answer: From a practical point of view this would certainly be helpful. This is a relevant question and proposal and it could be one of the solutions to help for more and better coordination.* *However, for this proposal a discussion on higher level is needed. It would be crucial to show the opportunities to policy-makers, why this is needed and what are the requirements to establish such a European-wide geospatial agency.*

Questions not answered during the webinar due to time contrains:

As different methodologies are applied in countries, how is decided which datasets/methods are currently adopted for calculation of SDGs indicators?

Answer: The calculation of SDG indicators is conducted on a national, regional and global level by different actors. On a national level the statistical offices monitor the indicator calculation and decide upon the datasets and methods to be applied for the reporting of the country to the UN. On the European level the responsible organisations (e.g. Eurostat, EEA) decide themselves which datasets are used – preferably and if feasible national datasets in combination with regional datasets.The same approach applies for the global actors of the UN, the so-called "Custodian Agencies" (e.g. the UN Environment Programme is responsible for the environmentally-related SDG indicators).

Can you be more specific about data spaces? How is it defined? Do they exist already and can you give an example? How can it enhance data integration?

Answer: Due to the success of this approach, the new European Data Strategy builds upon the concept of data spaces to unlock the hidden potential of closed data (including geospatial data) in other sectors. Data spaces are set to support several strategic sectors, such as Agriculture, Environment, Energy, Finance, Healthcare, Manufacturing, Mobility, and Public Authorities. Governance is central to the data space concept: A set of rules and standards that establish roles and their corresponding access levels within a data space, as well as their technical implementation. All data sets within a data space are interoperable. That does not mean that all data needs to conform to the same format or schema, but rather that they can automatically be integrated and harmonised as required.

What are high value datasets?

More information about the High Value Dataset can be found here: https://op.europa.eu/en/web/eu-law-in-force/bibliographic-details/-/elif-publication/a278a3e0-9864-11ed-b508-01aa75ed71a1

What importance does the production of (geo) linked data have in data integration strategies?

Answer: 'Resource Description Framework (RDF)' is both format and data model to serve as technology for Linked Data. In addition to the known methods on the 'area based data integration' the importance of 'RDF' and 'Linked Data' should be highlighted. Geospatial data, like geographies of areal classifications, and their data models can be transformed in RDF. The same applies to statistical data. Both models are then accessible on the web and can be integrated in a federated query through different Linked Data tools. The report of the UN-GGIM: Europe Working Group on Data Integration on future trends underlines that Linked Data should be "seen as the key enabler for data integration". The consideration of Linked Data within national, regional or international Spatial Data Infrastructures (SDIs) will help for better and more efficient discovery, access, exploration and use of geospatial data through the Internet. Linked Data is able to establish a next generation of SDIs in the future. A wider concept towards geospatially enabled knowledge infrastructures is part of the future SDI.

Further information can be accessed through:

UN-GGIM: Europe: Analysis of future trends in geospatial data capture, creation, maintenance and management and recommendations for amplified use of good practices:

https://un-ggim-europe.org/wp-content/uploads/2021/11/UNGGIM-Europe_WG_DataIntegration_Subgroup-II_DataIntegrationMethods.pdf
What is the difference between interoperable data and harmonised data? Sometime these two nouns are used as synonyms - is that correct? *Answer: Interoperability refers to the technical compliance of data sources to standardised formats and data models. This itself does not guarantee that the actual contents of the data are comparable. Harmonisation is rather about the comparability of concepts and definitions. Hence, harmonisation and interoperability are two different concepts. Ideally, integrated data should be harmonised and interoperable.*
Is there any evidence that people or public services have used the statistical maps showing distances to health care? *Answer: Data on the distance to health care are being analysed by DG REGIO as part of a comparison of access to essential services in urban centres and towns. However, the results of this comparison should be interpreted with care, due to the relative lack of harmonisation of the definitions underpinning the collected health care location data. Future progress in the harmonisation of the concepts is expected.*
How does the EU support Members States to increase interoperability – in most cases national databases are far from being interoperable *Answer:* *The EU has different work programmes and policy areas supporting the interoperability in and among the MS. Hereby the most important ones collected.* *Funding opportunities including infrastructure development:* - *Connecting Europe: https://commission.europa.eu/funding-tenders/find-funding/eu-funding-programmes/connecting-europe-facility_en* - *Elements of the Digital Europe: https://commission.europa.eu/funding-tenders/find-funding/eu-funding-programmes/digital-europe-programme_en* - *Results from previous ISA activities for example https://ec.europa.eu/isa2/actions_en/* *Concerning Policy :* - *The Interoperable Europe Act: https://data.europa.eu/en/news-events/news/interoperable-europe-act#:~:text=On%2021%20November%202022%2C%20the%20European%20Commission%20adopted,services%20function%20across%20borders%2C%20sectors%20and%20organisational%20boundaries.*
Is there any plans for using big data like mobile data or AIS? *Answer:In principle, using big data such as mobile phone data offer interesting opportunities for the production of innovative geo-enabled indicators. Several experimental projects have been undertaken to develop methodologies using mobile phone data, in particular on topics related to spatio-temporal differences in population distribution and mobility patterns. However, attempts to mainstream the analytical use of such data encounter obstacles related to data protection, handling of commercial data, legal constraints that are often specific to particular countries.*

CONCLUSION AND NEXT STEPS

With the use of this assessment and evaluation report, UN-GGIM: Europe plans to identify common issues, outcomes and findings, gaps and requirements which have not been tackled yet by other stakeholders and to gain valuable feedback for the future work and direction of UN-GGIM: Europe.

The main outcome and findings are:

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- The compilation of use cases and best practices on data integration methods and produce concrete recommendations and guidelines is still relevant;
- The support and promotion of capacity building and development initiatives on how to collect, harvest and integrate data from various data providers have to be strengthened. The challenge is the lack of knowledge of data and content and the challenge of using the data in a way that it makes sense. The aim is to provide harmonised pan-European data sets.
- A need for a European-wide geospatial agency to drive national and regional agendas and requirements has been expressed. For this proposal a discussion on highest management level is needed. It would be crucial to show the opportunities to policy-makers, why this is needed and what are the requirements to establish such a European-wide geospatial agency.
- More information on the different methodologies, the organisation and decision-process of the SDG calculation and monitoring in countries is requested and has to be provided.
- More specific information about data spaces, on their definition and their relation to the common data integration methods in the geospatial domain has to be shared.
- The importance of Linked data approaches within in data integration strategies has to be emphasized and better explained to national statistical offices and geospatial agencies
- To sensitive the statistical community that geospatial knowledge and usage is essential. Here the cooperation between the National Geospatial Agencies and National Statistical Offices becomes crucial.
- ….

Additional information:

The participants were informed and encouraged to complete the survey organised by UNECE: UNECE Survey on data integration - https://bit.ly/3YNaUuy. Deadline has been the 31 March 2023. More information about the UN-GGIM: Europe webinars are available at https://un-ggim-europe.org/events/

ANNEX I

+++Results of the slido poll++++

2. Which opportunities can data integration bring to your work or your organisation? 0 3 1

3. In which fields is data integration of high importance? 0 3 2

4. How can you or your organisation enhance data integration?

0 2 7

(1/2)

- APIs
- National statistical office priorities/ needs vs. National geospatial office priorities and needs
- Enforcement from EC versus non compliance data provider
- Data sharing
- Data Stewards
- turn data into linked data
- Projects
- Engage with bigger projects
- EU mandatory legalframe - lack of interest at national level
- cooperation
- stewardship
- NSO <-> NMA
- showcase analysis results obtained thanks to integrated data
- piloting
- Collaboration
- Cooperation
- taking responsibility
- common data sets between administrative parties
- Joint prohects
- Request collaboration

4. How can you or your organisation enhance data integration?

0 2 7

(2/2)

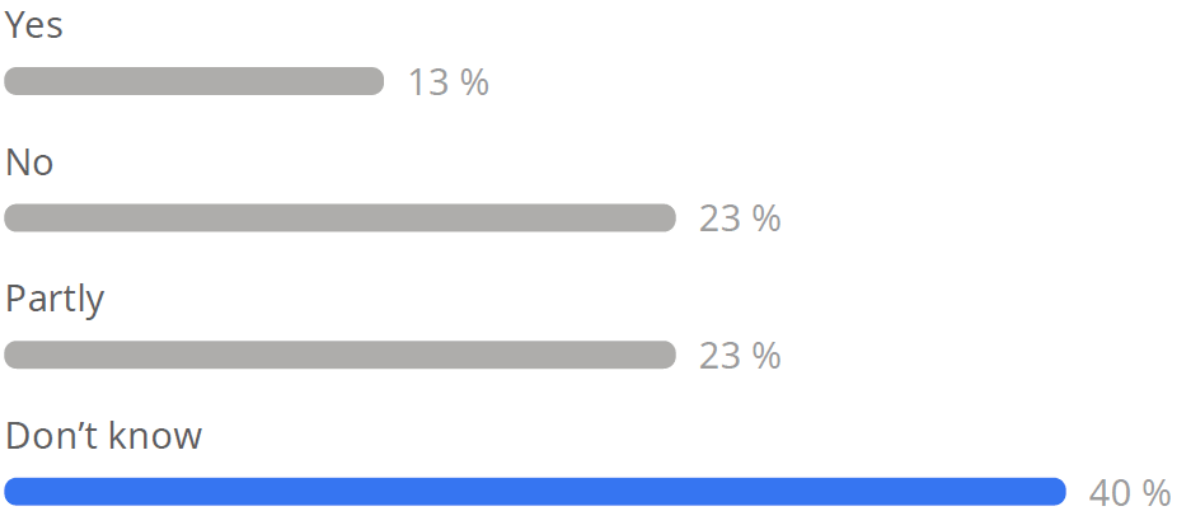
- willingness to compromize
- Collaboration
- cooperation
- development of standards release of reference data
- Awareness
- partnerships
- collaboration
- Partnerships
- PID, openAPI,
- Cooperation
- Coordination
- Collaboration
- Engage with policy guidance
- Collaboration

5. What is needed to increase the use of geospatial data in statistical production environments?

0 2 6

6. Are all your statistical domains connected to ONE (internal / external) location register (e.g. Addresses)?

0 3 0



7. Can you share convincing examples or cases of successful data integration?

0 1 4

- Geospatial analysis for SDG-11 indicators production
- Spatial NI platform
- Eurogeographics Open Maps
- Land Cover datasets
- USGS
- John Hopkins COVID-19 Dashboard
- WISE
- Digital Earth Africa (DEA)
- census
- Copernicus
- Norway Digital
- Accessibility studies for schools and hospital
- CORDA (Copernicus Reference Data Access) of EEA
- EuroGeographics datasets
- Not really 😞
- Yes

ANNEX II

European Forum for Geography and Statistics (EFGS)
GSGF Europe
UN-GGIM Europe – Working Group on Data integration
Geographic Information System of the Commission (GISCO)
Directorate-General for Regional and Urban Policy (REGIO)
European Commission's Eighth Report on Economic, Social and Territorial Cohesion
European Commission's Joint Research Centre (JRC)
Publications of the European Commission's Joint Research Centre (JRC)

- https://publications.jrc.ec.europa.eu/repository/handle/JRC126319
- https://publications.jrc.ec.europa.eu/repository/handle/JRC127330
- https://publications.jrc.ec.europa.eu/repository/handle/JRC127730
- https://publications.jrc.ec.europa.eu/repository/handle/JRC124148
- https://publications.jrc.ec.europa.eu/repository/handle/JRC126562

https://www.researchgate.net/publication/363769417_Data_Sharing_Fundamentals_Characteristics_and_Definition