UN-GGIM & UN SDGs – How can INSPIRE support the better integration of geospatial information and statistics and the UN SDG monitoring?

Pier-Giorgio Zaccheddu, “International affairs” @ BKG
Content

• Connecting geospatial and statistical communities – „Building bridges“
• UN SDG indicators through a ‚geographic location lens‘
• UN-GGIM: Europe – WG Data Integration to support the global UN SDG monitoring using INSPIRE
Connecting geospatial and statistical communities

Statistical Community

Socio-economic data
- Key statistics
  - census, demography, agriculture, buildings, labour, etc.
- Tax
  - Income and business tax
- Health
  - medicine, drugs, labour
- Immigration
- Land
  - use, cover
- Social care
  - unemployment, disability, family care
- other...

Geo Community

Spatial Data Infrastructure
- Quality, License, time stamps, ...

INSPIRE Annex I & II spatial data sets & services
- Administrative Units
- Addresses, geogr. Names
- Transport, Hydrography
- Land and Properties
- Elevation
- Orthophoto/Remote Sensing
- Positioning

Source: Petri, Eurostat
Connecting geospatial and statistical communities --- 2021 Round of Censuses ---

• “... undertaking a census can provide a catalyst for the statistical and mapping agencies to work together to the benefit of both agencies and the community. Even more importantly and at both the global and regional levels there is a continuing initiative to ensure a complete integration of statistical and geospatial information as a critical piece of national systems for providing comprehensive overview of many social, economic and environmental phenomena.”

Statistical Commission

The 2021 round of censuses is an opportunity to address this issue:
• by collecting statistical and geospatial data at the same time
• collecting and geocoding at detailed capture levels of geography and aggregating to higher levels, geocoding and grid statistics
• global statistical and geospatial framework
UN-GGIM: Europe – Work Plan 2015-2018

The substantial part of the proposed Work Plan for 2015 – 2018 is the continuation of the Plan adopted in 2015:

Work Group A: Core Data
1. Specifications of core data (*End of 2016*)
2. Economic model for production & distribution of core data (*End 2017*)
3. Existing political & financial frameworks supporting core data availability (*Mid-2018*)

Work Group B: Data Integration
1. Definition of the priority user needs for data combinations (*accomplished*)
2. Recommendation for implementing prioritized combinations of data (*Mid-2016*)
   → To be completed in November 2016
3. Recommendation how to manage side-effects induced by data combinations (*Mid-2016*)
   → To be completed in October 2016

→ **Follow-up work plan 2017 – 2020**: “As a European contribution to the global process on developing a framework for monitoring UN SDG indicators, UN-GGIM: Europe will through the WG on “Data Integration”, ensure a two-way interaction with the IAEG-SDG Working Group on Geospatial Information.”
Content

• Connecting geospatial and statistical communities – „Building bridges“
• UN SDG indicators through a ‚geographic location lens‘
• UN-GGIM: Europe – WG Data Integration to support the global UN SDG monitoring using INSPIRE
1/3 geospatial
(Eurostat)

2/3 no geospatial
relation

17 goals and 169 targets

1. No poverty
2. Zero hunger
3. Good health and well-being
4. Quality education
5. Gender equality
6. Clean water and sanitation
7. Affordable and clean energy
8. Decent work and economic growth
9. Industry innovation and infrastructure
10. Reduced inequality
11. Sustainable cities and communities
12. Responsible consumption and production
13. Climate action
14. Life below water
15. Life on land
16. Peace, justice and strong institutions
17. Partnerships for the goals

Availability and sustainable management of water
Modern energy
Safe and resilient cities and communities
Protect ecosystems

Source: Eurostat
Global monitoring:
• Each target (169) shall be measured → at least 1 indicator/target
• Global indicators to be measured by all Members States
• Additionally regional and national indicators
• Predominantly taken from official data
• Status - # 231 indicators:
  – 40% negotiated (calculation possible)
  – 30% to be adapted
  – 10% calculation not yet possible
  – 20% to be determined
Examples: geospatial data can support the indicator measurement

<table>
<thead>
<tr>
<th>Indicator 2.4.1:</th>
<th>Percentage of agricultural area under sustainable agricultural practices</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Denominator</strong>: Agricultural Area = sum of arable land + permanent crops + permanent meadows and pastures (FAOSTAT)</td>
<td></td>
</tr>
<tr>
<td><strong>Numerator</strong>: Land areas under productive and sustainable agricultural practices are those where indicators selected across the environmental, economic and social dimensions reach certain predefined values</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Indicator 6.5.2:</th>
<th>Proportion of transboundary basin area with an operational arrangement for water cooperation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indicator 6.6.1:</td>
<td>Change in the extent of water-related ecosystems over time</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Indicator 15.1.1:</th>
<th>Forest area as a proportion of total land area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indicator 15.3.1:</td>
<td>Proportion of land that is degraded over total land area</td>
</tr>
<tr>
<td>Indicator 15.4.2:</td>
<td>Mountain Green Cover Index</td>
</tr>
</tbody>
</table>

http://spaceflightnow.com/space/soyuz/vs07/images/
http://www.d-copernicus.de/
Possible conflicts of interest for the monitoring and reporting...

- **Competition of different actors**
  concerning the definition of methods, coordination

- **Competition of different analysis levels**
  global vs. national vs. regional

- **Competition of available geospatial data**
  remote sensing data vs. In-situ (geospatial reference vs. thematic)

- **Competition of different analysis methods**
  for different resolution levels / scales

- **Information exchange and coordination needed**
  between organisations, working groups (national, European)

Lessons learned from the INSPIRE framework and implementation...
There are still some questions to be answered...

- Who is in charge nationally to consolidate the information for the Members States?
- Which national ministry will be in charge for the coordination?
- Which national organization collects and submits the reports to the UN?
- Which national organization validates the information compiled for the UN?
- What about regional analysis for Europe?
- What cooperation efforts between NSIs and NMCAs are envisaged?

**Roles and tasks for the NMCAs, NSIs,...**

**INSPIRE (and Copernicus) for European analysis and reports**
Content

- Connecting geospatial and statistical communities – „Building bridges“
- UN SDG indicators through a ‚geographic location lens‘
- UN-GGIM: Europe – WG Data Integration to support the global UN SDG monitoring using INSPIRE
UN structure for the SDG monitoring

- **Inter-Agency and Expert Group on Sustainable Development Goal Indicators (IAEG SDGs)**
  - Provide a proposal of a global indicator framework (and associated global and universal indicators)

- **IAEG SDGs Working Group on „Geographic Information“ (IAEG SDG WG GI)**
  - Advance the understanding and the role of geospatial information in contributing to the indicator framework

- **UN-GGIM: Europe Work Group „Data Integration“**
  - Contribute to the global process and ensure a two-way-interaction with the IAEG SDG WG GI
Support of „Task Team UN-GGIM“ for IAEG SDG (led by DK) 2016

<table>
<thead>
<tr>
<th>Goal: 2030 Agenda - Sustainable Development Goals</th>
<th>Indicator: Geospatial coordination and management</th>
<th>Definition of the indicator: (State the definition of the indicator)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goal 1 End poverty in all its forms everywhere</td>
<td>Indicator disaggregation: (List the indicator disaggregation)</td>
<td></td>
</tr>
<tr>
<td>1.1 By 2030, eradicate extreme poverty for everyone, currently measured as people living on less than $1.25 a day</td>
<td>Current suggested use of geospatial data for monitoring the SDGs: (Identify and describe the geospatial data used for monitoring the SDGs)</td>
<td></td>
</tr>
<tr>
<td>Target: Addresses</td>
<td>Indicator: X</td>
<td></td>
</tr>
<tr>
<td>Indicator: Using INSPIRE framework and structures...</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Suggested geospatial data integration: (Provide a list of suggested geospatial data integration) |

GAP analysis: (Describe what changes in use of geospatial data are required to improve the monitoring of the SDGs) |

Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation |

9.1 Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all |

Data quality requirements: (List the data quality requirements) |

Data availability: (List the data availability) |

Data collection: (Describe how the geospatial data are collected) |

Data interpretation: (Describe how the geospatial data are interpreted) |

Method of integration: (Describe how the geospatial data are integrated into the monitoring cycles) |

Experts on GIM Management
Tasks assigned to IAEG SDG WG GI supported by the UN-GGIM:Europe WG Data Integration 2016-2017

- Review the agreed global indicators through a ‘geographic location’ lens;
- Review the “metadata” compiled for the global indicators through a ‘geographic location’ lens;
- Consider and review the tier classifications for the agreed global indicator, their level of “maturity” and appropriateness from a ‘geographic location’ lens;
- Identify existing geospatial data gaps, geospatial methodological and measurement issues;
- Consider how geospatial information can contribute to the indicators and metadata;
- Propose means of addressing data gaps and issues
Tasks assigned to IAEG SDG WG GI supported by the UN-GGIM:Europe WG Data Integration beyond 2017

• Propose strategies for undertaking methodological work on specific areas for improving disaggregation by geographic location and in particular for national and sub-national reporting
  – And in this regard, to report to the High-Level Group, Statistical Commission and Committee of Experts on Global Geospatial Information Management; and

• Review options and provides guidance to IAEG-SDGs on the role of National Statistical Offices in considering and applying Earth observations and geospatial information primarily as a means to contribute to and validate data as part of official statistics.
Specific tasks for the UN-GGIM:Europe WG
Data Integration

• Develop practical examples (best practice) on specific national implementations on how Geospatial Information can support in processes in achieving the SDGs and where the need shows to measure, monitor and mitigate challenges

• suggest links between communities: demographic, statistical and environmental data together with the Geospatial Location – ranging from the conceptual level to specific indicators.
How can INSPIRE support or be used?

• Availability of INSPIRE spatial data sets & services will change the methods for data integration and interaction of communities
• Lessons learned from the INSPIRE framework and implementation will be beneficial for the setup of the national, regional and global UN SDG indicator framework
• INSPIRE (and Copernicus) spatial data & services shall be used for European UN SDG analysis and reports
Thank you for your kind attention!

It remains exciting...

Chair: Prof. Hansjörg Kutterer
Contact: UN-GGIM: Europe, WG B „Data Integration“:
Pier-Giorgio Zaccheddu, „Technical Leader“
E-Mail: pier-giorgio.zaccheddu@bkg.bund.de