



GeoStat

GEOSPATIAL WORLD  
ADVANCING KNOWLEDGE FOR SUSTAINABILITY

# Geospatial World Forum 2022

## Workshop

*Geo-enabled statistics: Implementation of quality assurance frameworks*

### **Geostat 4 WP3**

---

Quality of geospatial information management for statistics

Rossano Figueiredo  
Statistics Portugal

12 May 2022

# WP3 Objective and Outputs

## Objective

Develop quality assessment measures for geospatial information management in the Member States and for geospatial statistics and propose ways to integrate these measures into the existing ESS quality framework.

## Outputs

**1.** Proposal for a catalogue of methods related to geospatial information, which could be included in the Quality Assurance Framework (QAF) of the European Statistical System (ESS)

**Name:** Proposal for Geospatial Enhancements of the ESS Quality Assurance Framework ([here](#))

**2.** Enhancing quality reporting by including more geospatial information – qualitative information + a set of quality indicators

**Name:** Recommendations for Geospatial Quality Reporting ([here](#))

**3.** A quality checklist related to geospatial processing as part of the statistical production process – a prototype of the checklist

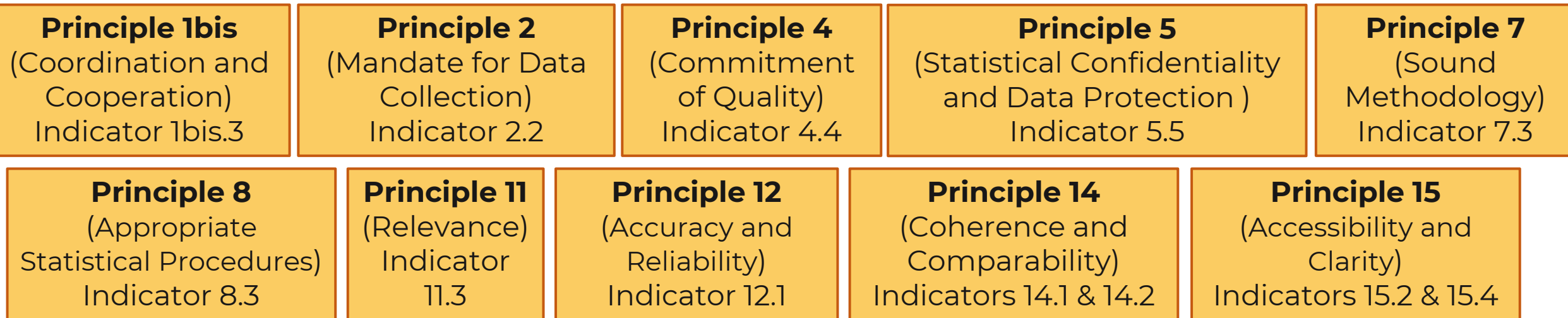
**Name:** GEOCHECK – A Quality Checklist for geospatial processing related to a specific statistical product ([here](#))



# Output 1 – main results and findings

## Proposal for Geospatial Enhancements of the ESS Quality Assurance Framework ([here](#))

**14 changes** to the QAF regarding geospatial aspects – 8 textual enhancements and 6 new methods -, presented to and commented on by the Working Group on Quality (WGQ) of the ESS



**Main topics:** institutional agreements, geospatial data availability, assessment and monitoring of geospatial output's quality, treatment of identifiers, validity of geospatial data, guidelines consistency, territorial classifications, geospatial statistics as services, tailor-made cartographic outputs

# Output 2 – main results and findings

## Recommendations for Geospatial Quality Reporting ([here](#))

- **Description of the ESS quality framework:**

- **Quality Assurance:**

- European Statistics Code of Practice (CoP)
    - ESS Quality Assurance Framework (QAF) - aligned with general quality management principles from ISO 9001:2015

- **Standard for quality reporting:** Single Integrated Metadata Structure (SIMS) – user-oriented quality report & producer-oriented quality report

- **List of geospatial quality indicators:**

- 20 indicators (usage, definition and computation – quantitative and qualitative)
  - Relation of the quality indicators to **GSGF, GSBPM and ISO 19157:**
    - 3 tables showing which elements of the three frameworks the indicators should be assigned to
  - Recommendations for quality reporting on geospatial aspects:
    - Identification and enrichment of the concepts and sub-concepts of **SIMS** relevant for geospatial processing and outputs > **SIMSgeo**

# Output 2 – main results and findings

## Recommendations for Geospatial Quality Reporting ([here](#))

### Key ideas

- Within the ESS quality framework , there is a gap in quality criteria concerning geospatial data and processes:
  - **GSGF** as a common high-level framework to assign the quality indicators to its principles, but also as a backbone when it comes to cross-references to other standards
- Guarantee comparability between assessment methods and criteria, through specific **quality standards and guidelines** while keeping in mind the differences between data ecosystems and actors
- The recommendations for the geospatial contents can be used to highlight the growing importance of **geospatial data and outputs** by providing metadata in a quality report
- Take advantage of the modular structure of SIMS to produce tailor-made geospatial reports for internal and external purposes



# Output 3 – main results and findings

## GEOCHECK – A Quality Checklist for geospatial processing related to a specific statistical product ([here](#))

- **GEOCHECK** is a generic checklist for a systematic quality assessment of the geospatial processing related to a specific statistical product (where geospatial aspects are either the main topic or part of it)
- **Self-assessment and guidance tool** considering improvement measures, but also to evaluate the **geospatial maturity level** of the statistical product
- It should support **NSOs and their teams together with geospatial experts** in evaluating the quality of the geospatial-related activities, promoting a **multi-disciplinary quality assessment approach**
- It provides a means for **simple comparisons of the level of quality over time and across domains** (assuming data are centrally stored in the statistical organisation)
- Structured in a **process-oriented way** and consists of **6 parts**, following the some of the **GSBPM's phases**: Design, Collect, Process, Analyse, Disseminate and Evaluate



# Output 3 – main results and findings

**GEOCHECK – A Quality Checklist for geospatial processing related to a specific statistical product** ([here](#))

## Main topics:

- Granularity level of the geospatial input data (coordinates, addresses, buildings, area codes, etc.)
- National, regional and/or logical territorial division
- Types of and accessibility to geospatial data sources
- Standardised metadata/documentation for input geospatial data and statistical-geospatial output
- Geo-sampling practices
- Statistical and geospatial data matching methods and quality measures
- Point-based location (geocoding) practices
- Spatial-based criteria for data aggregation
- Spatial analyses maturity level
- Disclosure control methods
- Statistical-geospatial output visualisation
- Production of a geospatial quality report, quality indicators and feedback practices







GeoStat

GEOSPATIAL WORLD  
ADVANCING KNOWLEDGE FOR SUSTAINABILITY

# Geospatial World Forum 2022

## Workshop

*Geo-enabled statistics: Implementation of quality assurance frameworks*

### **Geostat 4 WP3**

---

Quality of geospatial information management for statistics

Rossano Figueiredo  
Statistics Portugal  
[rossano.figueiredo@ine.pt](mailto:rossano.figueiredo@ine.pt)

12 May 2022