TWINNING CONTRACT

JO 21 ENI ST 01 22

Strengthening the capacity of Jordan's Department of Statistics in terms of compilation, analysis and reporting of statistical data in line with International and European best practices

MISSION REPORT

on

Component 1
Roadmap for the development of an integrated administrative data system in Jordan
with pilots on Statistical Business registers (SBR) and population statistics

Activity: 1.3.6:
Quality and Metadata

Mission carried out by
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Amman, Jordan

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Abbreviations, Acronyms	Description
BC	Beneficiary Country
CoP	European Statistics Code of Practice
DoS	Department of Statistics of Jordan
ESS	European Statistical System
EU	European Union
GSBPM	Generic Statistical Business Process Model
IMF	International Monetary Fund
IT	Information Technology
MS	EU Member State
PL	Project Leader
RTA	Resident Twinning Advisor
SDG	Sustainable Development Goals
SDMX	Statistical Data and Metadata Exchange
SIMS	Single Integrated Metadata Structure
STE	Short-term Expert
UN	United Nations

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1. General comments

This mission report was prepared within the Twinning Project "Strengthening the capacity of Jordan's Department of Statistics in terms of compilation, analysis and reporting of statistical data in line with International and European best practices".

The topics covered at the missions were:
- Role and task of the Quality Units/Departments.
- Standardised production – introduction to GSBPM.
- Procedures for Ensuring Statistical Quality for Evaluating Administrative Data.
- Introduction to reference and structural metadata.
- Process for creating and maintaining a repository of metadata.
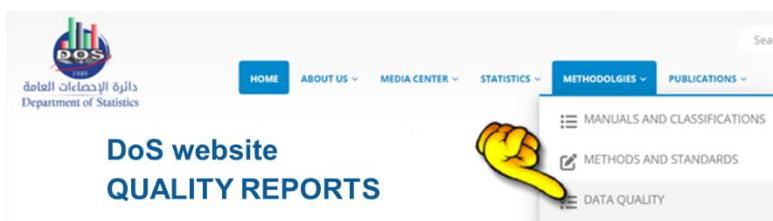- Metadata driven production.

The consultants would like to express their sincere thanks to all officials and individuals met for the kind support and valuable information which they received during the stay in Jordan, and which highly facilitated their work. The views and observations stated in this report are those of the consultants and do not necessarily correspond to the views of EU, Istat or Statistics Denmark.

2. Assessment and results

The mission started with a presentation round of the staff from DoS and the experts from Statistics Denmark and Istat and a discussion of the purpose of this activity. The issues to be discussed during the mission:
- Measures for quality assessment of administrative data
- Quality of the production process – introduction to GSBPM
- Quality management
- Metadata – defining the different types of metadata
    - Reference metadata
    - Structural metadata

DoS is in a very different place today, when it comes to quality and metadata, than at the end of the former Twinning project that ended in 2015. Quality declarations related to publications based on SIMS are now on DoS website.

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DoS is moving towards more technological investment. They are working on metadata mapping and integration and are considering establishing a metadata working group that will work towards standardised metadata in an integrated metadata system.

DoS works towards unifying statistical expressions – common terminology. They have established an interactive data centre for admin data involving IT-consultants and ministries.

DoS has been working on measures for assessing quality of administrative registers. A draft of standards and procedures for evaluating administrative register data was presented for the experts. The work presented on register profiling is comprehensive and can serve as a good start towards understanding the challenges with administrative register data and how to measure the quality of the data.

An introduction to metadata was given and included some definitions and illustrating the importance of metadata.

Examples of definitions:
- *Meta* – from Greek meaning after, beyond plus *Datum* – from Latin meaning information.
- From ISO/IEC 11179 on metadata registers: Data defines (structural metadata) and describes (reference metadata) other data.
- Eurostat: Information that is needed to be able to use and interpret statistics. Metadata describe data by giving definitions of populations, objects, variables, the methodology and quality.

In the metadata introduction given, the two basic types of metadata, structural and reference metadata were explained and illustrated and an introduction to The ESS Handbook on quality and metadata reports was given.
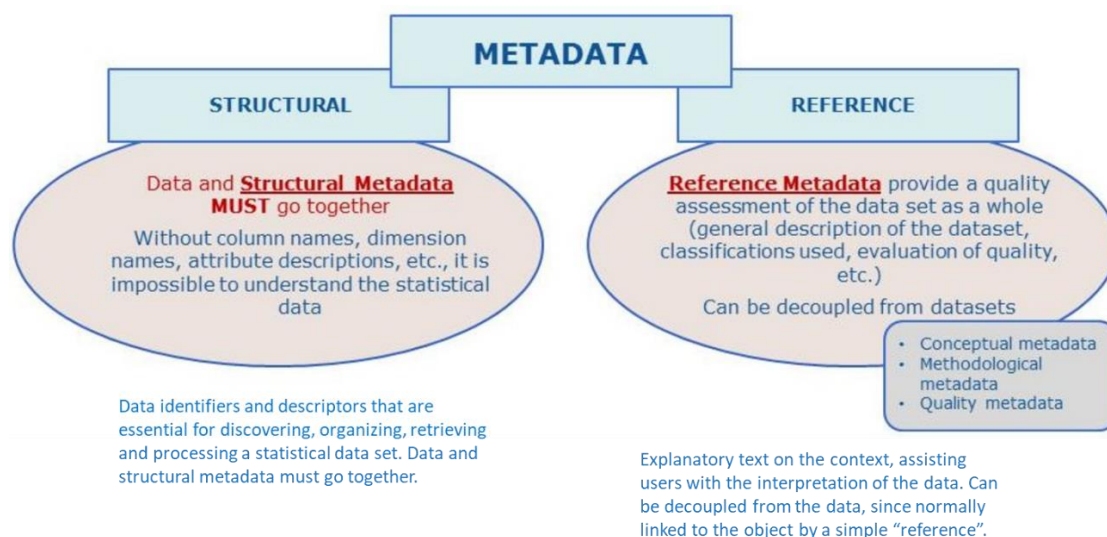
Governance of metadata was introduced suggesting to establish a centrally managed and controlled statistical metadata framework and process that drives standard definitions, concepts and classifications to ensure data accuracy and common data interpretation.
It was underlined that a standardised catalogue of metadata (centrally managed and controlled) must be shared with all statistical staff so that they can conform to a set of predefined metadata definitions. It was also stressed that it should be a standard policy that

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every survey project has to be metadata-driven: all statistical activities in the statistical institution abide by these metadata to ensure data accuracy and consistency.

An introduction to the metadata frameworks of the European Statistical System, the IMF and the UN was given and the Italian expert gave a comprehensive introduction to standards for metadata and practical implementation. A strategy on how to design a comprehensive reference metadata platform was introduced so to manage reference metadata using a framework that can be reused across domains while avoiding manual processing. Following the Guideline "Standardising Reference Metadata Reporting in SDMX", the objective to achieve should be the definition of the "once for all purposes" Concept Scheme (i.e., the SDMX object listing the statistical variables) for handling all exchange and dissemination channels. This agreement on a common set of metadata items would strongly foster the improvement and the harmonization of the reference metadata at DoS (e.g., no duplicate storage on different databases). From such superset, it would be possible to derive (i) the subsets needed by the international organizations acting as metadata collectors, and (ii) the customized user-oriented quality reports used to increase the clarity of the statistics disseminated on the DoS website.

An introduction to GSBPM was given, emphasising that GSBPM is a generic standard framework and harmonised terminology that describes and defines a set of business processes needed to produce official statistics. The model is a template for process documentation, harmonising statistical computing infrastructures and to provide a framework for process quality assessment and improvement. An overview of how to work with GSBPM was also given together with a short indication of how to relate quality indicators in the sub-processes in GSBPM.

The roles and tasks of the quality units/departments of DoS, Istat and Statistics Denmark were presented and discussed.

The Quality department of DoS gave a presentation of their work, shedding light on the values, the department's message, and the vision of the department.
The tasks of the quality department were also presented covering:
- ✓ Evaluation of the performance level in DoS and follow-up of the procedures of ensuring excellence.
- ✓ Work on auditing and monitoring statistical calendar and website.
- ✓ Identification of possible areas of improvement and to propose the projects needed to achieve them.
- ✓ Encouraging DoS's staff to propose projects and seek to operationalize them.
- ✓ Provide facilities for all quality-based task forces.
- ✓ Continuous collection of data and information on Quality Activities in DoS.
- ✓ Other tasks entrusted to the Department in relation to quality and application.
- ✓ Spread quality culture.

In addition, the Quality division of DoS talked about implementation procedures for evaluation, analysis procedures for evaluating surveys, evaluation of the different stages of the completing surveys, the most important results, and the some of the challenges.

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3. Conclusions and recommendations

The quality unit of DOS is doing good work on developing their quality and metadata management system. The following conclusions and recommendations were given at the end of the mission:

Recommendations on administrative data
- "Think big – start small". This means: formulate your vision – make it simple - include communication with data owners
    o Define tasks for the responsible statisticians.
    o Define tasks for the quality unit.
- Register profiles of the administrative registers is a valuable outset for understanding the quality of administrative data – start with this.
    o …filled out in cooperation with administrative data owners.
- Guidelines
    o Great approach taking outset in the five quality dimensions of the CoP.
    o Simplify the flow between sub-standards, statements and measures.
    o Leave out the scores but supply careful description of the quality details.

Recommendations on production processes
- Consider formulating a roadmap for implementing GSBPM as the process model for DoS.
- Map the use of administrative data to GSBPM including defining who is in charge of each process.

Recommendations on quality management
- Valuable that DoS has formulated a vision and values for the quality unit and a description of their tasks.
- Some simplifications could be considered, e.g.:
    o There are many audit and monitoring tasks for the quality unit – some of these could be reduced in frequency or even moved to other units like e.g. the dissemination unit.
    o Design division of work between quality unit and statistical units regarding the tasks related to the metadata life cycle, including quality assurance measures.

Recommendations on reference metadata
- Definition of a single integrated superset from which to derive the subsets of interest, serving both reporting (IMF, SDGs) and national dissemination (DoS website) channels.
- DoS should decide which metadata items collected for international reporting may be useful for national purposes – the experts suggest implementing the ESS standard SIMS.
- Once the superset will be finalised, run a simple (just an excel file to fill in) pilot project to check the reaction of the production domains:
    o Investigate the possibility to team up with the IMF metadata compilers at DoS.
    https://dsbb.imf.org/sdds/country/JOR/contacts-list

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Annex 1. Terms of Reference

Terms of Reference

EU Twinning Project JO 21 ENI ST 01 22
Component 1:
Roadmap for the development of an integrated administrative data system in Jordan
with pilots on Statistical Business registers (SBR) and population statistics

Activity 1.3.6:
Standardized production process and the role of metadata

Dates: 04 - 07 December 2023

Content

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List of abbreviations

BC   Beneficiary Country
DoS   Department of Statistics
ESS   European Statistical System
MS   Member State
RTA   Resident Twinning Advisor
STE   Short Term Expert
ToR   Term of References

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1. Objective and Mandatory Results for the component
1.1 Objective

To prepare a roadmap for the development of an integrated administrative data system for Jordan, and conduct pilot projects on creating an SBR and strengthening population statistics.

As the development of a fully integrated administrative data system is a long-term project. The main focus of the Twinning project will be on specific pilot projects where the use of administrative records can address key challenges currently faced by the DoS. These pilot projects will constitute the first steps in rolling out a roadmap for the Jordanian statistical system by providing a template for expanding the use of administrative data across the wider statistical system over time.

The project will take outset in establishing the following core registers: (a) A Statistical Business Register (SBR); (b) A Population register and (c) A Dwelling and housing Register/Address register.

The lack of a comprehensive SBR was identified as an obstacle to future improvements of DoS statistics back in the 2015 Twinning project led by Statistics Denmark. This gap still remains - developing and maintaining an SBR for Jordan would, therefore, greatly enhance the ability of the DoS to monitor and analyse developments in a rapidly changing business environment. The pilot project will examine available administrative data sources on business entities. In relation to business statistics, the development of a SBR it is essential to integrating different data sources, and providing additional analysis without increasing costs.

SBR is an essential component in supporting the coherence, consistency and quality of statistics produced as well as providing data on the population of business units. The SBR provides a basis for selecting and monitoring samples, integrating administrative and other data sources and providing a framework for deriving business demographics and National Accounts.

Recently the [Jordan Economic Modernization Vision 2030](#) was launched and "[Smart Jordan](#)" was identified as one of the eight Growth Drivers to implement the Economic Modernization Vision. The 'Smart Jordan Driver' includes seven sectors where data is one of them. This indicates the national interest to ensure constant and reliable data sources, and robust statistical systems that contribute to timely and informed policy making. It is expected that one of the measures that will be taken is to transform Jordan's Department of Statistics (DoS) into an interactive National Statistical Center (NSC).

1.2 Mandatory results and indicators for achievement for each sub-component

Component 1 is sub-divided in five sub-components each with a Mandatory Results (MR) and two to four indicators of achievements associated with the sub-component. In table 1 the MR and related indicators of relevance for the current Mission listed in black.

Table 1: Mandatory results and indicators for achievement (IA) for each sub-components within Component 1: an integrated administrative data system for Jordan

MR from the Twinning Fiche	Indicator
MR 1.1: Compile an inventory of administrative data on business and households and an indicative roadmap for inclusion in an integrated system	**Indicator 1.1.A:** Inventory of administrative data variables and detailed supporting metadata prepared **Indicator 1.1.B:** Tentative roadmap prepared for inclusion of data in integrated system
MR 1.2: Pilot project to develop strategy for integrating administrative data sources for the purposes of creating an SBR	Indicator 1.2.A: Administrative data sources identified and assessed and plan developed for integrating these with Census of Establishments (CoE) information in an SBR **Indicator 1.2.B:** Documentation prepared on database structures and compliance with statistical standards, classifications (e.g. ISIC, Rev 4) etc. and use of common identifiers etc. Indicator 1.2.C: Explore how SBS can benefit other statistical domains in the DoS
MR 1.3: Undertake pilot project on how administrative records can be used to strengthen population statistics and inform framing of the 2025 CoP questionnaire	Indicator 1.3.A: Inventory of data sources prepared and assessed and action plan for incorporation in DoS statistics developed **Indicator 1.3.B:** Methodology developed for incorporating administrative data **Indicator 1.3.C:** Documentation prepared on statistical standards, classifications, identifiers, mapping etc. Indicator 1.3.D: Review of how administrative data can assist in developing the COP 2025 questionnaires
MR 1.4: Develop strategy for ensuring flows of data between the DoS and counterpart institutions are established on an ongoing basis for pilot projects above	Indicator 1.4.A: Review of technical infrastructure for data transfers and action plan prepared based on 1.1 and 1.2 above Indicator 1.4.B: MoUs agreed between DoS and partner institutions **Indicator 1.4.C:** Agreement on statistical standards, classifications, identifiers etc. between DoS and partner institutions Indicator 1.4.D: Review of data flows within the DoS
MR 1.5: Implement training programmes and develop training materials both within DoS and with partner institutions on the use of administrative records for	**Indicator 1.5.A:** Detailed documentation on statistical standards, classifications, identifiers etc. developed. Indicator 1.5.B: Comprehensive training programs and workshops provided for DoS staff and partner institutions

statistical purposes, based on pilot projects above	**Indicator 1.5.C:** DoS leadership role in ensuring proper statistical standards applied across the Jordanian statistical system reinforced.

2. Purpose of the activity

The purpose of this activity is:

- Role and task of the Quality Units/Departments;
- Standardized production – introduction to GSBPM;
- Procedures for Ensuring Statistical Quality for Evaluating Administrative Data;
- Introduction to reference and structural metadata;
- Process for creating and maintaining a repository of metadata;
- Metadata driven production;

3. Expected output of the activity

- Activity report;
- DoS Guidelines for quality assessment of administrative data reviewed and discussed (Annex A);
- Common understanding of GSBPM obtained;
- Common understanding of metadriven production;
- DoS template for metadata reviewed and updated (Annex B and C);
- Process for creating and maintaining a repository of metadata outlined;

4. Participants

4.1 MS Short Term Experts (STE's)

- **Ms. Karin Blix,** Chief adviser – Quality Coordinator, Methodology and Analysis at Statistics Denmark. Ms. Blix is responsible for coordinating quality and metadata activities and building a quality management system and a coherent metadata system for Statistics Denmark. This includes a system for quality reviews and lSO performing quality reviews on statistical products, review of quality reports, implementing GSBPM and running peer reviews of other national authorities' compliance with the national guidelines for official statistics (based on the ESS Code of Practice). Besides that Ms. Blix has since April 2021 been Member of the Peer review expert team for European Commission in order to conduct the third round of peer reviews on the European Statistical System in 2021 – 2023.

- **Mr. Andrea Bruni,** Researcher at the Directorate for external relations, international affairs, press office and National Statistical System coordination and Head of "Italian Hub of the public statistics" dissemination framework project, The Italian National Institute of Statistics (ISTAT). KEY QUALIFICATIONS: 23 years of experience in the field of statistics on: International models and frameworks (e.g., SIMS, GSBPM, GSIM, SDMX), Assessment of statistical capacities and official data quality within the Italian National Statistical System; Data and classifications modelling and statistical data warehouse development; Analysis of international Quality Frameworks (e.g., IMF DQAF, UN NQAF, Eurostat CoP and QAF); o Definition of methods for quality assurance within the Italian National Statistical System; Metadata management; Catalogues, thesauri and glossaries creation and governance; Standard

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documentation of quality and reference metadata; Harmonization of structural metadata; Quality reporting and standard quality indicators; Design and implementation of integrated and reusable classifications; Metadata catalogue management practices; Dissemination metadata driven architecture service based; ultidimensional dissemination hypercubes; Design and implementation of customer satisfaction surveys.

4.2 DoS experts

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- Staff members from Director of Electronic of Transformation and Information Technology

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4.3 Participants for opening and closing sessions:

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4.4 The Twinning Team

- Eng. Mohammad Khalaf, Director of Sustainable Development Unit, Department of Statistics (DoS), Jordan (RTA Counterpart), Mohammed.Khalaf@DOS.GOV.JO
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5. Current status

Standardized production processes and quality guidelines:
In order to standardize the production process and quality assurance a number of Guidelines are provided by Quality Assurance Division in DoS for further information kindly see
https://dosweb.dos.g8ov.jo/data-quality/

Since DoS is in a transition phase moving from solely survey based statistics to producing statistics based on administrative data guidelines for assessing quality of administrative data are in process. A first draft is provided as Annex A to this ToR. As part of the current mission feedback from STE's on the draft are requested.

Reference metadata for administrative data:
With outset in a **German framework for a Jordanian framework for reference metadata** has been drafted and DoS is in the process of filling the template out for the following administrative data sources and reference metadata for data from the Civil Status and Passport department are provided as Annex B to this ToR:

- **Administrative data for persons and households**
- Civil Status and Passport Department (44 variables available)
- Social Security (6 variables available)
- Ministry of Higher Education and Science (16 variables available)
- Ministry of Education (16 variables available)
- Ministry of Health Insurance Department (15 variables available)

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- **Administrative data for businesses**
- The Ministry of Industry and Trade (MIT) (16 variables)
- The Companies Control Department (CCD) (10 variables)
- The Social Security Corporation (SSC) (28 variables)

Structural metadata:
In nearly all cases variable labels and codelists for categorical variables are provided by the data owner. Current template used in DoS provided in in Annex C exemplified by administrative data from the Civil Status Department (Work in progress).

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6. Overall agenda

Day 1 (09:30 – 15:00) - Metadata:
o **RTA and DoS:** Welcome and expected output of the Mission
o **BC and MS:** Peer-to-peer activity on register profiles (Annex B1 – Guidelines and B2 – Example - Administrative data from Civil Register)
o **BC and MS:** Peer-to-peer activity on structural metadata (Annex C)

Day 2 (09:30 – 15:00) – Quality assurance:
o **MS:** Role and task of the Quality Units/Departments
o **BC and MS:** Joint review of Quality Guidelines for administrative data sources (Annex A)

Day 3 (09:30 – 15:00) – Production process:
o **MS:** Standardized production - introduction to GSBPM
o **BC and MS:** Peer-to-peer activity on mapping the production process in DoS to GSBPM;

Day 4 (09:30 – 15:00) – Follow up:
o **BC and MS:** Follow up from the previous days
o **BC and MS:** Agreement of next steps to be taken
o **BC and MS:** Summing up and conclusion

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Annex 2: Programme for the mission

Abbreviations:
MS *= EU Member State (Denmark, Germany, Italy, Lithuania, Finland);*
DoS *= Department of Statistics, Jordan*

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Annex 3. Persons met

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Actions needed for moving forward as well as for preparing the next mission –add rows as needed.

Action	Deadline	Responsible person