TWINNING CONTRACT

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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
Integrated Administrative Data System

Activity 1.3.10(o)
Experiences and challenges from the combined pre-census in Aqaba

Mission carried out by
Mr. Stefan Dittrich, Destatis
Dr. René Söllner, Destatis
Ms. Milda Šličkutė-Šeštokienė, Statistics Lithuania
Ms. Kaija Ruotsalainen, Statistics Finland

Online Mission
07 May 2024 (½ Working day)
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Strengthening the capacity of Jordan's Department of Statistics

Authors' names, addresses, e-mails

Mr. Stefan Dittrich
Former Head of the Census Division
The Federal Statistical Office in Germany (Destatis)
Gustav-Stresemann-Ring 11
65819 Wiesbaden
Germany
Tel: +49 611 75 2140
Email: stefan.dittrich@destatis.de

Dr. René Söllner
New Head of the Census Division
The Federal Statistical Office in Germany (Destatis)
Gustav-Stresemann-Ring 11
65819 Wiesbaden
Germany
Email: Rene.Soellner@destatis.de

Ms. Milda Šličkutė-Šeštokienė
Advisor, Population Statistics Division
Statistics Lithuania – State Agency
Gedimino av. 29, Vilnius
Lithuania
Tel: +370 685 09 413
Email: milda.slickute@stat.gov.lt

Ms. Kaija Ruotsalainen
Senior Adviser
Statistics Finland
Työpajankatu 13
00580 Helsinki
Finland
Tel: +358 29 551 3599
Email:kaija.ruotsalainen@stat.fi

Strengthening the capacity of Jordan's Department of Statistics

Table of contents

Strengthening the capacity of Jordan's Department of Statistics

List of Abbreviations

- BC – Beneficiary Country
- CoP – General Population and Housing Census
- DoS – Department of Statistics
- MR – Mandatory Results
- MS – Member State
- RTA – Resident Twinning Advisor
- STE – Short-term Expert

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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"*. This a short online follow up Mission related to the following Mandatory Results (MR):

- o *"**MR 1.3:** Undertake pilot project on how administrative records can be used to strengthen population statistics and inform framing of the 2025 CoP".*

The purpose of this online activity is for DoS to give a status of their experiences and challenges from carrying out a combined register census for the first time in Jordan.

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 online sessions 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, Destatis, Statistics Lithuania or Statistics Finland.

2. Assessment and results

The Mission was initiated by Dr. Ali Ashebli, Operations Assistant of DG, DoS welcoming the Short Term Experts (STE's) and pointing out the importance of this online meeting, due to the fact that DoS is currently working towards carrying out a combined census for the first time in Jordan in November 2025. Dr. Ali Ashebli also pointed out that the plan and test currently done using input and experiences given by the STE's at former Missions as well as a study visit to Germany in the initial phase of the project.

In brief DoS plan is that the combined census will be used to:
- o Quality check/improvement of administrative data
- o For pre-filling of the questionnaire

In a maturity model of moving from a traditional census toward a full register census, this is regarded as an extremely important step toward a full register based census without increasing the risk or cost of a successful population and housing census.

Census Type	Amount of use of register	Use of Registers	Advantages	Risks [0; 1]	Costs [0; 1]	Quality [0; 1]	Time Investment [0; 1]	Level reached by now
Traditional Census		No use of register data		0	1	0,9	0	🙂
Combined Register Census		… for quality check / improvement		0	1	1	0,1	🙂 (green)
		… for prefilling		0	0,94	1	0,1	🙂 (yellow)
		… for estimating some variables instead of asking		0,2	0,9	1	0,3	😐
		… to ask only a sample of the population		0,4	0,25	0,8	1	☹️
Full Register Census		Only use of register data		0-1 depends on quality of registers and time for preparation	0,2	0,8-1	0,8	☹️

Figure 1: Maturity model for moving from a traditional census, to a combined and full register census.

Pre-census in Aqaba Governorate

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As preparation for the census that will be carried out in Jordan in November 2025 it was decided to carry out a pre-census in one of the twelve Governorates in Jordan and the Aqaba Governorate was chosen as the test Governorate since it is regarded as representative for the whole Country as such e.g. both containing a large city as well as rural areas. The planning of the pre-census started in 2023 and are currently taking place (spring 2024).

According to Jordan in figures from 2022 the total population was estimated to having 222.800 inhabitants:

عدد السكان المقدر حسب المحافظة والجنس والكثافة السكانية (شخص/كم²)،2022*
Estimated Population by Governorate, Sex and Pop. Density (P/Km²), 2022*

Governorate	الكثافة السكانية (شخص/كم²) Pop. Density (P/km²)	المجموع Total	أنثى Female	ذكر Male	المحافظة
Amman	626.0	4,744,700	2,197,200	2,547,500	العاصمة
Balqa	519.5	582,100	269,500	312,600	البلقاء
Zarqa	339.4	1,616,000	761,600	854,400	الزرقاء
Madaba	238.4	224,000	105,600	118,400	مأدبا
Irbid	1333.3	2,095,700	1,012,800	1,082,900	اربد
Mafraq	24.5	651,100	315,400	335,700	المفرق
Jarash	685.0	280,700	134,800	145,900	جرش
Ajlun	496.8	208,500	101,200	107,300	عجلون
Karak	107.2	374,800	179,000	195,800	الكرك
Tafiela	51.6	114,000	54,400	59,600	الطفيلة
Ma'an	5.7	187,600	89,700	97,900	معان
Aqaba	32.3	222,800	96,800	126,000	العقبة
The Kingdom	127.3	11,302,000	5,318,000	5,984,000	المملكة

* Source: Department of Statistics / Population and Social Statistics 2022.

* المصدر: دائرة الإحصاءات العامة/ الإحصاءات السكانية والإجتماعية 2022.

Figure 2: Population estimate by Governorate for 2022 according to Jordan in Figure 2022.

Steps in the 2024 Aqaba pre-census
Below the major steps already carried out or planed for the 2024 Aqaba pre-census are described in brief but leaving out technical issues such as IT and training of enumerators etc.

- o **Planning phase (2023)**
- o **Drafting questionnaires for the strapping and listing phase (2023)**
- o **Strapping phase (2024)**
  - o Geographical preparation and completion of office-based listing (strapping) for enumeration blocks
- o **Listing phase**
  - o All household was visited and ask for name and National number of one of the members of the household (altogether data for approximately 32.000 households/families were collected)

Strengthening the capacity of Jordan's Department of Statistics

- o **Testing the quality and coverage of administrative data for prefilling** (Description Provided by DoS)
    - o As of the date of the 17/4/2024, the Administrative Data Section has received a file containing approximately (32000) individuals representing households and housing (dwellings) from the field inventory in the listing process carried out by DoS' Field Team.
    - o After the filtering process on the nationality level, approximately 28,000 of these families were found to have Jordanian nationality and approximately 4,000 non-Jordanians.
    - o The question about the national ID number in the listing questionnaire can be answered through three options:
        1. Fill in the national ID number of the head of the household or any family member after the respondent's consent
        2. If the answer is "I don't know", the code has to be 8888888888
        3. If the respondent refuses to answer, the code has to be 9999999999
    - o Some fields were filled in with different codes than the ones mentioned in the three options above, the codes were: 5555555555, 666666666666, 7777777777
    - o Out of 28,000, there were approximately 14,000 households whose national ID number question was well filled and the rest either did not know, refused or other entry error.
    - o This file (14000) was combined through STATA software with the main file of the data of the Civil Status Department based on the national ID number of the respondent to reflect this on (63000) individuals belonging to this household through the family book number in the civil status data.
    - o The Directorate of Information Technology provided the Administrative Data Section with three servers to enable the Department's statistical work.
    - o The Administrative Data Department team carried out a very intensive work to check with the naked eye to match the name from the field with the name in the Civil Status Department after merging at the level of the national ID number received from the field for the respondent individual and linking it according to the family book number.
    - o The likelihood of questionable names is done by reference to the individual's place of residence in civil status data.

- o **Testing the suitability of administrative data for prefilling**
    - o Altogether 20 variables from administrative data were tested for its suitability for prefilling – out of the 20 variables 6 variables was regarded as suitable for prefilling of the questionnaire.

- o **Collection phase of the 2024 Aqaba pre-census** (start Sunday 12 May 2024)
    - o The questionnaire for the pre-census is provided in Annex 4, 5 and 6
    - o All prefilled questions apart from date of birth can be corrected by the enumerators as in the collection phase.

- o **Challenges observed** (Description Provided by DoS)
    - a. The name from the field does not correspond to its counterpart in the civil status data (possible due to the error of entering the national ID number, or an error in the information from the respondent for mistrust of the confidentiality of the data).
    - b. No name in field data, only national ID number.
    - c. Since this census covers three domains: economic, agriculture and population, in the first questionnaire when the name of the respondent is filled in through field work, then in the remaining questionnaire the name question is filled in with (same name), which in turn makes the respondent nameless and unidentified, therefore the admin. Data team cannot match it.

Strengthening the capacity of Jordan's Department of Statistics

      d. The name from the field is only one or two or three parts (First name, father's name, grandfather's name) and not four parts as in the civil register[1].

      e. Two names of two members of the same household follow the same family book number (by tracking the data and geographical identification number of the dwelling these two individuals reside in two different dwellings).

      f. Matching one or two parts of the name but the existing family name is a surname or nickname and not the real family name as found in the civil data.

3. Conclusions and recommendations

The STE's from Germany, Lithuania and Finland all express that they were impressed by what has been achieved since the last Mission. All steps taken and planned are clearly based on careful analysis and solid knowledge by the Staff Members in DoS.

In terms of further work, the Aqaba pre-census is very important in terms of measuring the quality of register data and their statistical utilization. The same type of testing was also carried out in Finland several times when planning the transition to a register-based population census.

Two main aspects were discussed:

- **Improving the number of correct national ID matches collected from the field and available in administrative sources**. Currently about 50% percent of respondents answered the question of the national ID numbers during the field work. These cases could be successfully matched with administrative data sources, while for the rest of population national ID number was either not collected or is not correct and cannot be matched. 50% is certainly a good number but also it is recommended to put more efforts to increase the percentage of correct matches. Following improvements could be considered:
  o Interviewer could ask to show the passport/ID-card, so that the national ID number could be checked, and errors or entries can be reduced.
  o Interviewer could have access to necessary administrative data while doing field work so that he/she could check whether the given ID number exist or not; this recommendation must be checked in terms of data security as it requires prefilled ID-numbers on the tablet.
  o Important thing is to think on how trust in public sector including DoS could be increased, so that people would feel comfortable when giving personal information. It is important to have it in mind while training interviewers. This could be done e.g. by an information campaign before the census promoting advantages of participation.
  o It could be good to better profile the group from which an ID number was not obtained.
- **Checking the quality of administrative data**. Currently only national ID number are collected from the field and other data will be collected at the later stage. Also, administrative data are available, and the quality of administrative data should be checked. At this stage it is important to think how the quality of administrative data could be evaluated and which data could be collected on field for that purpose. Following general recommendations was given:
  o Check the suitability of an administrative variable one by one.
  o Clarify the use of administrative data:
    o Option 1: For cross-checking and validation of data collected in the field.
    o Option 2: As a data source for specific variables, for instance to reduce the response burden.

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[1] In Jordan all inhabitants of Jordanian nationalities have official names consisting of the following four parts: (i) First name, (ii) Father's name, (iii) Grandfather's name, (iv) Last name

Strengthening the capacity of Jordan's Department of Statistics

- o When choosing between variables having different definitions in the traditional census and administrative data it is always recommended to consult the Handbook on the Management of Population and Housing Censuses (https://unstats.un.org/unsd/publication/seriesf/series_f83rev2en.pdf).
- o Both census data and administrative data have errors – choose the one with the highest accuracy.
- o Developing priority rules for use of field or register entry depending on experience in terms of higher quality. E.g. considering the date of birth, a priority for the register entry could be considered higher as this variable does not change in time and errors in field work (typing) are more likely.
- o Even if the field data would be judged to be of higher quality, the register data can be used as supplementary data, e.g. in the imputation of missing data.
- o Learn why there is differences between Census and administrative data - if minor time differences can be justified (e.g. in the record of Marital status)
- o Quantify the difference between census data and administrative data – don't concentrate on minor differences.
- o In case where administrative data owner does not use the international standards for statistics – try to go into dialogue with the data owner in order to understand why and see if they can chance or provide data following the definition used in DoS. This is not always possible, so efforts must be made to formulate the processing rules so that the existing data can be used to produce data according to the statistical definition (note the international recommendations).

Strengthening the capacity of Jordan's Department of Statistics

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 1.3.10 (o):
Experiences and challenges from the combined pre-census in Aqaba

Dates: 07 May 2024.

Content

Strengthening the capacity of Jordan's Department of Statistics

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

Strengthening the capacity of Jordan's Department of Statistics

0. Objective and Mandatory Results for the component
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. Specifically, the pilots for the Twinning project will focus on the development of a statistical business register (SBR), a population register as well as an address register.

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).

Component 1 is sub-divided in six sub-components each with a Mandatory Results (MR) with indicators of achievements associated with the sub-component.

Strengthening the capacity of Jordan's Department of Statistics

Mandatory results and indicators for achievement for each sub-component

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 statistical purposes, based on pilot projects above	**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 **Indicator 1.5.C:** DoS leadership role in ensuring proper statistical standards applied across the Jordanian statistical system reinforced.
MR 1.6: A governance roadmap for decisions makers data access and use of a National Data Center (NDC) for model based analyses in Jordan prepared	**Indicator 1.6.A:** Best international practices for NDC's outlined **Indicator 1.6.B:** Stakeholder awareness raised and needs from stakeholder mapped **Indicator 1.6.C:** Organizational structure and required skills for staffing the National Data Center outlined **Indicator 1.6.D:** Requirements and standards for data and metadata layer outlined

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2. Purpose of the activity

The purpose of this online activity is for DoS to give a status of their experiences and challenges from carrying out a combined register census for the first time in Jordan. Currently, DoS is using the pre-census in the Aqaba Governorate in order to be used for quality check of the administrative data as well as the possibility for prefilling (a and b in figure 1). However, DoS has experiences some challenges that they would like to have some feedback on.

Example of challenges and topics that will be addressed:
- How to handle that de facto census are currently collected and administrative data are de jure
- How to handles different definitions – e.g. engaged couples are registered as married couples in administrative data
- Best practice for combining census and administrative records
- How to handle situations where census and administrative records does not match

Census Type	Amount of use of register	Use of Registers	Advantages	Risks [0; 1]	Costs [0; 1]	Quality [0; 1]	Time Investment [0; 1]	Level reached by now
Traditional Census		No use of register data		0	1	0,9	0	🙂
Combined Register Census	a	… for quality check / improvement		0	1	1	0,1	🙂
	b	… for prefilling		0	0,94	1	0,1	🙂
	c	… for estimating some variables instead of asking		0,2	0,9	1	0,3	😐
	d	… to ask only a sample of the population		0,4	0,25	0,8	1	🙁
Full Register Census		Only use of register data		0-1 depends on quality of registers and time for preparation	0,2	0,8-1	0,8	🙁

Figure 1: Maturity model for moving from a traditional census, to a combined and full register census.

3. Expected output of the activity
- Activity report;
- Feedback on how to best deal with the challenges experienced in DoS
- Plan for next steps outlined

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4. Participants

MS Short Term Experts (STE's)

- Mr. Stefan Dittrich, Destatis, Germany. Stefan.Dittrich@destatis.de
- René Söllner, Destatis, Germany. Rene.Soellner@destatis.de
- Ms. Milda Šličkutė-Šeštokienė, Statistics Lithuania Milda.Slickute-Sestokiene@stat.gov.lt
- Ms. Kaija Ruotsalainen, Statistics Finland kaija.ruotsalainen@stat.fi

DoS experts (Tentative list)

- Dr. Ali Ashebli, Operations Assistant of DG, DoS
- Ms. Ahlam Al-Rosan, Director of Electronic Transformation and Information Technology
- Mr. Mohmmad Al-Shatnawi, Statistician, Electronic Transformation and IT
- Mr. Mohammad Sakhreih, Statistician, Electronic Transformation and IT
- Mr. Jaffar Ababneh, Director of Data Management Directory
- Mr. Safwat Radaideh, Statistician, Data Management Directory
- Ms. Lina AlJazzazy, Statistician, Data Management Directory

Twinning team

- Dr. Charlotte Nielsen (RTA)
- Ms. Zaina Amireh (Language Assistant)
- Ms. Thekra Altorah (RTA Assistant)

5. Resources

Translation and interpretation will be provide throughout the activity. Translation will be provided as sequential translation. Therefore, please keep frequent pauses when presenting and talking allowing our project translator to provide as accurate a translation as possible.

Strengthening the capacity of Jordan's Department of Statistics

6. Overall agenda

07 May 2024
- 10 min - Welcome and presentation round
- 50 min - DoS present status, plan and challenges for the pre-census in Aqaba
- 45 min feedback from STE's
- 15 minutes summing up
- 30 min break
- 60 min consolidation of notes after the online meeting (This will be done separately in BC and MS)

13 May 2024
- 10 min – Conclusion and recommendation from 07 May 2024
- 60 min Presentation and discussion on methods and challenges observed by DoS in relation to the pre-census in Aqaba
- 20 min summing up and conclusions
- 30 min break
- 90 min consolidation of notes after the online meeting (This will be done separately in BC and MS)

7. Overview of administrative data in DoS

- **Inventory of administrative data for persons and households**
  - Civil Status and Passport Department (44 variables available)
  - Social Security (6 variables available)
- **Inventory of 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)
- **Inventory of administrative data for Dwelling and housing**
  - The Ministry of Local Administration (Some variables – not coordinated)
  - Greater Amman Municipality (Some variables – not coordinated)
  - The Royal Jordanian Geographical Center (Some variables)
  - The Electricity company (Sample – new delivery *in progress*)

Strengthening the capacity of Jordan's Department of Statistics

Annex 2: Program for the mission

07 May 2024
- 10 min - Welcome and presentation round
- 50 min - DoS present status, plan and challenges for the pre-census in Aqaba
- 45 min feedback from STE's
- 15 minutes summing up
- 30 min break
- 60 min consolidation of notes after the online meeting (This will be done separately in BC and MS)

13 May 2024
- 10 min – Conclusion and recommendation from 07 May 2024
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- 20 min summing up and conclusions
- 30 min break
- 90 min consolidation of notes after the online meeting (This will be done separately in BC and MS)

Strengthening the capacity of Jordan's Department of Statistics

Annex 3. Persons met

The field team online from Aqaba
- Dr. Ali Ashebli, Operations Assistant of DG, DoS
- Ms. Ahlam Al-Rosan, Director of Electronic Transformation and Information Technology
- Mr. Mohammad Al Jundi , DirecoDirectorate of Household and Population Statistics
- Ms. Ghaida Khasawneh, Director, Methodology

The Amman team
- Mr. Mohmmad Al-Shatnawi, Statistician, Electronic Transformation and IT
- Mr. Mohammad Sakhreih, Statistician, Electronic Transformation and IT
- Ms. Lina AlJazzazy, Statistician, Data Management Directory
- Mr. Abdelwahad Al-Haraizeh, Statistician, Data Management Directory
- Mr. Mohammad Alomari, Statistician, Administrative Data Division

Twinning team
- Ms. Zaina Amireh (Language Assistant)
- Dr. Charlotte Nielsen (RTA)