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Support to the Israeli Central Bureau of Statistics in Improving the Quality of Official Statistics

MISSION REPORT

on

Component C

Infrastructures for agricultural statistics

Activity C.1a

Data sources for agricultural statistics and farms frame I

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List of Abbreviations

BC	Beneficiary country
EU	European Union
FADN	Farm Accountancy Data Network
FSS	Farm Structure Survey
GIS	Geographic information system
ICBS	Israeli Central Bureau of Statistics
IT	Information Technologies
MARD	Ministry of Agriculture and Rural Development
MS	Member State (of the EU)
RTA	Resident Twinning advisor
ToR	Terms of Reference

Executive Summary

In Israel the last agricultural census was conducted in 1981 and an extensive survey was conducted in 1995. However, since then the agriculture industry underwent numerous changes that affected the statistics in Israel, among others: the privatization of the agricultural sector and a change in the composition of the economic activities in farms. However, no reliable data is available to give a proficient picture of these changes. In addition, basic information regarding the structure of the agricultural sector in Israel is missing and detailed information regarding the economic situation of farmers in different sectors/areas is incomplete or entirely lacking.

Based on the findings during the mission, the MS experts strongly recommend conducting an agricultural census in Israel. A census will provide the necessary information for establishing a complete and reliable farm register that will facilitate the future work on agricultural statistics in Israel. Furthermore, an agricultural census will assist evidence based decision making for the agricultural sector in Israel. Not least the register will enhance quality and cost effective solutions for future surveys as well as enhance the quality and completeness of the Business register.

Finally, a census and reliable farm register will be an important tool for ICBS when aligning official agricultural statistics to international standards and best practices in e.g. the EU and OECD.

1. General comments

This mission report was prepared as part of the Twinning Project *Support to the Israeli Central Bureau of Statistics (ICBS) in Enhancing the Quality of Official Statistics*". This was the first mission devoted to fact finding within *Component C: Infrastructures for agricultural statistics* with MS experts from Statistics Denmark.

The main activities of the mission were:

- *Presentation by ICBS of the current situation regarding Agricultural Census in Israel including available data sources and the questionnaire, Agricultural Statistics in Israel, current status and challenges.*
- *Presentation by MS-experts of the EU/MS experience on the same issues including EU regulations.*
- *Discussions of methodologies for determining the size threshold for defining a farm, methodologies for establishment and maintenance of farms register, as well as the questionnaires and needs from the Stakeholders.*

The fact finding assisted the ICBS and the Twinning Project experts in getting an overview of the present situation regarding infrastructures for agricultural statistics in Israel. Furthermore, the fact finding contrasted the current situation with European best practices.

The experts would like to express their thanks to all officials and individuals met for their kind support and for the valuable information they provided, which highly facilitated the experts' work.

The views and observations stated in this report are those of the consultants and do not necessarily represent the views of EU, ICBS or Statistics Denmark.

2. Assessment and results

All of the foreseen activities were carried out following the plans in the ToR; cf. *Terms of Reference (Annex C1a - 1)*. Outcomes were favourable and results and conclusions are described in the following section.

ICBS presented:

- *Agricultural Census in Israel (Annex C1a - 4)*
- *Introduction - Agricultural Statistics in Israel - (Annex C1a - 5)*
- *Establishing a Farm register in Israel (Annex C1a - 6)*
- *The proposed Census Questionnaire*

The MS experts gave presentations on:

- *What is a farm – definition and threshold (Annex C1a - 7)*
- *Farm structure surveys (FSS), EU standard (Annex C1a – 8)*
- *The Danish FSS Questionnaire (Annex C1a – 9)*
- *Register based Statistics – Agriculture (Annex C1a – 10)*
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The Ministry of Agriculture and Rural Development (MARD) experts presented:

- *The need for Agricultural census and farm register for decision making in the Ministry of Agriculture (Annex C1a - 11)*
- *GIS as a tool in agricultural statistics and farm register(Annex C1a -12)*

2.1 Current situation at ICBS assessed

ICBS had prepared comprehensive presentations giving the experts an overview of the current situation of Agricultural Statistics in Israel. In parallel, some of the challenges that ICBS find most significant were highlighted (please find uploaded presentations at www.dst.dk/israel).

In Israel the last agriculture census was conducted in 1981 and an extensive survey was conducted in 1995. However, since then the agricultural industry underwent numerous changes that affected the statistics in Israel, among others: the privatization of the agricultural sector, a change in the composition of the economic activities in farms.

The quality of many of the current administrative sources is poor and they cover only parts of the agricultural activities. As accurate and reliable agricultural data remains very important for various stakeholders, the ICBS and the Ministry of Agriculture and Rural Development (MARD) agreed on the upgrade of the agricultural infrastructure for the improvement of the quality of the Agricultural statistics, starting with the establishment of a farm register.

However, in order to construct a farm register, an agricultural census is highly needed due to the current reliance on low-quality administrative sources with non-objective and biased data.

Furthermore, an agricultural census is needed in order to:

- Get a comprehensive picture of the structure of the Israeli agricultural farms (crops, ownership, partnerships etc.)
- Examine the impact of the structural changes in the agricultural Sector, including privatization processes, decentralization and a shift to non-agricultural activities
- Comply with international standards and best practices

The activities in Component C will therefore focus on performing an agricultural census as well as developing a new farm register to be used as basis for agricultural statistics.

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The Ministry of Agriculture and Rural Development (MARD) is the major external partner to this component and close cooperation already exist between the two institutions.

2.2 Current organization of the agricultural sector in Israel.

In Israel, the *organized sector* consists of Kibbutzim and Moshavim which are unique to Israel.

Kibbutz is a collective community in Israel that traditionally was based mainly on agriculture. However, in recent years more industries were added into the mixture such as manufacture industries, services, tourism etc. The farming activities are shared by the whole community (input and output).

Moshav is a type of Israeli village, specifically a type of cooperative agricultural community of individual farms with mutual help. In contrast to the collective kibbutzim, farms in a Moshav are individually owned but often of fixed and equal size. Workers produce crops and goods on their properties through individual and/or pooled labour and resources.

In addition to Kibbutzim and Moshavim, the agricultural sector consists of private farms in the urban and rural sectors. Most of these farms are in the Arab sector (mostly traditional agriculture).

2.3 Major challenges of ICBS

The most important challenge regarding farm structure statistics which ICBS faces is the fact that the most recent agricultural census dates back to 1981. A sample survey was held in 1995. At the same time ICBS does not have a complete and updated farm register and the various administrative registers available to them do not give a proficient picture of the population of farms.

The business register is not a sufficient source to describe agricultural structure because it does not have information on agricultural farms whose main activity is not agriculture and it does not have information on unregistered farms. In addition, it covers only the income data and does not maintain detailed information regarding the farm structure.

This situation means that basic information on the structure of the agricultural sector in Israel is missing:

Number of farms: The ICBS estimates the number of farms in Israel to be approximately 25.000-28.000. This number is not yet agreed upon by ICBS and MARD. In addition, the problem is that it is not known how many of the farms are so small that they should be excluded from the farm structure statistics. Some might even be passive units with no agricultural activity at all, not even at a small scale.

Agricultural area: At ICBS the agricultural area in Israel is estimated to approximately 300.000 hectares (1 hectare=10 dunam). MARD estimates the area to be as big as 400.000 hectares. This is a significant difference that should be eliminated. Another important issue is the fact that knowledge of the distribution of the agricultural area and irrigation type by crops is scarce.

2.4 European requirements

At ICBS it is the ambition to conduct farm structure statistics in a manner that as much as possible meets the requirements of the European Union (EU) - if not in all details so at least when it comes to the basic requirements.

The EU requirements of farm structure statistics are laid down in regulation 1166/2008 (Annex C1a – 13). It states that all EU countries have to carry out a total census in 2010 and sample surveys in 2013 and 2016.

The content of the both the census and the survey should be:

- Crops
- Livestock
- Labour force
- Other gainful activities
- Special area questions with a view to the environment
- Machinery
- Irrigation
- Manure techniques
- Irrigation

Other questions could be added for national needs. Countries may use administrative sources rather than questions on the questionnaire wherever possible.

Very small farms can be excluded. The rule is that these small farms should have no more than:

- 1) 2 percent of the agricultural land
- 2) 2 percent of the livestock units

But irrespective of 1) and 2) all farms fulfilling just one the criteria have to be included:

- a) $\geq 5,0$ ha, all crops
- b) $\geq 1,0$ ha fruit, berry, citrus and olive, vine and nurseries
- c) $\geq 0,5$ ha vegetables and strawberries
- d) $\geq 0,5$ with tobacco, hops or cotton
- e) $\geq 0,1$ ha with crops in green house.
- f) ≥ 10 cattle
- h) ≥ 50 pigs
- i) ≥ 10 sows
- j) ≥ 20 sheep
- k) ≥ 20 goats
- l) ≥ 1.000 poultries

As countries both have to live up to both 1-2 *and* a-l it might be necessary for some countries to lower the thresholds, for instance by having a threshold of 1,0 hectares instead of 5,0 hectares.

2.5 Farm register

The EU law does not have any explicit requirement regarding the farm register but it is assumed that any member state has a farm register because conducting agricultural surveys would be impossible without it.

Most countries have a farm register which has been created and updated independently of the business register. In Denmark, however, the farm register that was conducted in 2010, integrated with the business register. This was achieved by marking business units by their engagement in agriculture and forestry as seen below:

Code	Definition
0	No agriculture and no forestry
1	Agriculture, no forestry
2	Forestry, no agriculture
3	Both agriculture and forestry

Small farms which otherwise would have been outside the business register have been added to the register. In Denmark many farms also have a forestry area, and business units whose main activity is forestry might also be active in agriculture.

2.6 The agricultural population in Israel

ICBS has worked on creating a population of all agricultural farms. Several sources have been used, for instance the Insurance Fund for Natural Risks in Agriculture (KANAT), the water Authority, Foreign Labour Requests (including the register of foreign workers in agriculture) and livestock associations. The most successful source, however, has been contact to the agricultural and water associations in 483 local authorities. These associations have good knowledge of local farmers.

All in all ICBS now knows about 28.000 farms - or potential farms since many of the units might be too small to be included in the farm structure statistics or inactive. The precise number that is to be excluded will not be known until a survey has been made. Furthermore surveying them all in a census is also absolutely necessary in order to establish thresholds suitable for the Israeli agricultural statistics.

It should be noted that in Israel, in contrast to the EU, aquaculture is classified in Agriculture.

2.7 The Israeli questionnaire for an agricultural census

The questionnaire is mostly in line with EU requirements concerning FSS; especially when it comes to crops and livestock. These items are the core of farm structure statistics. The questionnaire also has questions on the legal status, labour force, irrigation and soil conservation, aquaculture and non-agricultural activities. A section on machinery is missing but this is of minor importance. Based on input from MS experts, ICBS will consider adding questions about working hours to the questionnaire.

The questionnaire is planned to be tested on June 2016 in a small pilot survey with the participation of 20 farms.

When conducting the planned census it will be done mainly by telephone interviews though a web questionnaire also will be available for farmers who prefer completing the questionnaire online. It is expected that it will necessary to visit about 4.000 farmers personally and collect the information by face to face interviews, as some farms are not accessible by telephone.

The MS experts are of the opinion that a successful census with the present questionnaire will create a proficient statistical farm register which can provide the users with valuable statistical information on farm structure, agricultural areas and livestock. Furthermore, a census based register will provide a base for future sample surveys.

2.8 Meeting with the Israeli Ministry of Agriculture and Rural Affairs (MARD)

MARD presented its needs for statistical information needed for decision making and the challenges that are faced in providing this information. The most imminent needs are information on:

- Area by crop
- Number of animals
- Number, type and size of farms
- Economic situation of farmers in different sectors/areas
- Cost of production and profit margin on different types by sizes
- Loss/waste reduction
- Marketing margins - Prices: farmer, wholesaler, consumer

Among the major challenges MARD are presently facing are:

- The quality of the available registers is not satisfactory
- Differences in the information from various sources
- Much of the information is based on estimates
- Lack of information on prices at the level of farm gate

Information on prices and marketing margins was identified as a particularly important topic and it was agreed that questions about this will be included in the questionnaire for the planned census.

During the discussion it was stressed that it will not be possible to fully meet MARDs need for information of administrative purposes due to the nature of the statistics and the need to respect confidentiality. However, ICBS are willing to have a dialog with MARD about options for access to de-identified microdata for analytical purposes and decision making e.g. via the traditional research service from research room or by setting up a remote access facility to a research room at MARD (similar to the set-up provided for Bank of Israel - the cost of such a set-up is funded by the users, in this case by MARD).

In connection with the topic of the economic situation of farmers the MS experts briefly introduced the Farm Accountancy Data Network (FADN) of the European Commission, run by the General Directorate of Agriculture and Rural Development. FADN contains a unique combination of economic and physical data at farm level and is an instrument for evaluating the income of agricultural holdings and the impacts of the common agricultural policy, i.e. the economy of farmers at farm level. If relevant, the MS experts can provide further information about FADN.

MARD also presented the GIS programme of the Ministry. The GIS system can provide very useful information at a detailed level; for instance information at parcel level on crops and irrigation including information on types of water sources and irrigation system. However the system faces a number of challenges that still remain to be solved.

Among the major challenges MARD are presently facing are:

- There is no legal obligation for farmers to provide information to MARD about their parcels
- The link between the parcels and the farm is insufficient – the lack of a unique farm identifier complicates this matter
- Orthophoto updates are late
- Duplication of parcels

Due to the challenges mentioned above, the MS experts are of the opinion that presently the GIS is not able to provide the necessary information for establishing a farm register and as such not an alternative to conducting a census. However, the possibility of combining data from ICBS to aggregated geo-data should be further investigated. A meeting with GIS experts will be set up by the RTA in July 2016. MARD also raised the question of their ability to use the census data in future surveys.

Strict confidentiality of data is required according to the Statistics Ordinance (new version), 5732 - 1972. Thus the ICBS is obligated to maintain strict confidentiality of personal and business data as a basic premise guiding its activities. ICBS cannot under any circumstances transmit any personal information about residents or any specific business information about companies and corporations. The MS experts recommend that the ICBS continue their close cooperation with MARD and be open for discussion - on a case by case basis – regarding any need for surveys from MARD.

In conclusion, several of the challenged that MARD is presently facing will be met, fully or partly, by an agricultural census.

3. Conclusions and recommendations

Based on the findings during the mission the MS experts have the following recommendation:

- It is strongly recommended to conduct an agricultural census in Israel in the near future

A census will provide the necessary information for establishing a complete and reliable farm register that will facilitate the future work on agricultural statistics in Israel. Moreover, the register will enhance quality and cost effective solutions for future surveys.

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Table 1: Actions needed for moving forward as well as for preparing the next mission (the activities are conditioned on the receiving funding for the census operation).

Action	Deadline	Responsible person
Test of questionnaire performed		Nitzan HaCohen
Evaluation of test-questionnaire (Expert will be consulted as needed by phone or by mail)		Dr. Moshe Yanai
Funding for Census clarified		Dr. Moshe Yanai
Draft contract with MARD in preparation		Dr. Moshe Yanai
Options for the MARDS access to de-identified microdata for decision making outlined		Dr. Moshe Yanai
Role of GIS in the component clarified - including access to aggregated geo-data		Dr. Moshe Yanai