



## ISRAEL – AGRICULTURAL CENSUS 2017 – METADATA REVIEW

### 1. Historical outline

The first census of agriculture in Israel was conducted in 1949/1950, and the following ones in 1971, 1981, and 1995. The Agricultural Census 2017 (AC), to which the metadata review and data presented here refer, was the fifth AC conducted in Israel.

### 2. Legal basis and organization

#### *Legal framework*

In Israel, censuses are conducted by the Central Bureau of Statistics (CBS) based on the Statistics Ordinance (New Version), 5732 - 1972. The Statistics Ordinance defines the mission of the CBS, the way it works, the obligation to provide information to the CBS, the CBS's obligation regarding the safeguard of the statistical secrecy, and the CBS's obligation to publish the results of its activities. There is no specific law on the agricultural census. The AC 2017 was approved by the Prime Minister on 2 February 2012, based on clauses 5a and 5c (1978 amendment) of the Statistical Ordinance.

#### *Institutional framework and international collaboration*

The CBS was responsible for planning and conducting the census in collaboration with the Ministry of Agriculture and a Census steering committee. The committee was headed by a member of the Hebrew University of Jerusalem and comprised by members from the CBS, Ministry of Agriculture and Rural Development, Ministry of Finance, Agricultural organizations, and the National Economic Council. An internal follow up committee continuously tracked the progress of the census. The census was funded by the CBS with no external funds. However, before the AC 2017, The CBS included a census component within the Twining Project which took place with Statistics Denmark. The component included, among other activities, workshops and study visits to Statistics Denmark and the Italian National Institute of Statistics.

#### *Census staff*

The census office staff was made up of 32 people, among whom four were the staff responsible for agricultural statistics within the CBS. The enumeration staff was made up of eight supervisors and managers and 101 enumerators. The staff also included IT experts, a communication expert, who ran an Internet campaign for the census, methodological experts, and others.

### 3. Reference date and period

**Reference day:** 31 December 2017, for livestock.

#### **Reference period:**

- calendar year 2017, for land tenure, land area, labour, crops, irrigation, use of fertilizers and pesticides, soil conservation, and aquaculture; and
- calendar years 2017-2018, for last transaction of crops sold to the domestic market, to gather information about the price gap between the agricultural farm and chain stores or wholesale market.

### 4. Enumeration period

In the AC 2017 data was collected from June 2018 to March 2019 with a response rate of 91 percent

### 5. Scope of the census and definition of the statistical unit

The **census scope** covered agricultural activities (crop and livestock production) and aquaculture.

The **statistical unit** was the agricultural farm defined as an economic unit that produces crops, animal (excluding hunting) or aquaculture products that sells its produce through various marketing channels and is known to the authorities or to the farmer organizations.

#### **Community-level data**

There were no community-level data collected along with the census.

## 6. Census coverage

### ***Geographic coverage***

The AC 2017 covered the entire country. The Druze villages in the Golan Heights were enumerated together through their agricultural associations, therefore, individual information was not collected about the activity on these farms.

### ***Cut-off threshold and other exclusions***

No threshold was used in the AC 2017.

## 7. Methodology

### ***Methodological modality for conducting the census***

The AC 2017 was conducted using the classical approach.

### ***Relation to other censuses***

A series of meetings between the staff of the AC and the Population and Housing Census (PHC) took place to coordinate the activities and share information. Finally, it was agreed that the AC 2017 would include some questions regarding the housing of the foreign workers in agriculture.

### ***Frames***

The census frame was built from various sources: the CBS Business Register, the Ministry of Agriculture and Rural Development listings (based on requests of the farmers for foreign workers, water, and other production factors), listings of production boards such as the plants board and the milk board, listings of grower associations such as the poultry and cattle associations, and other relevant listings such as agricultural schools. In 2015 a preliminary survey was conducted within the organized farms<sup>1</sup>. The survey checked the administrative listings with the water associations and verified the names of the active farm owners in each association. These sources were combined into a comprehensive frame that was deputed. For the non-organized farms, an additional process was carried out for complementing contact information and avoid duplication. The frame included finally 25 671 records of which 21 992 were interviewed. The main causes of non-response were farms that could not be located, communication problems, rejection, and temporary difficulty in responding, among others.

### ***Complete or/and sample enumeration methods***

The AC was a complete enumeration of all agricultural farms in the country.

### ***Sample design (if sampling was used)***

No sampling was applied.

### ***Data collection methods***

The AC 2017 used a combination of CAWI, CATI and CAPI methods. Holders received a notification letter with a link to complete the questionnaire via CAWI. If the holder did not complete it after a few weeks, the CATI method was used. If both methods failed, the CAPI method was used. For group of agricultural farms with incomplete contact information data was collected using the CAPI method.

### ***Questionnaire(s) and items covered***

A single questionnaire that included three versions (general farm, Kibbutz, and firms/institutions/schools) was used for data collection in the AC 2017. The questionnaire covered 13 out of 23 essential items recommended in the WCA 2020<sup>2</sup>.

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<sup>1</sup> Organized farms included Kibbutzim, Moshavim and farms that belong to water associations. All others were considered unorganized (Private farms, Agricultural schools, firms, etc.)

<sup>2</sup> The following essential items were not covered: (i) 0104 Sex of agricultural holder; (ii) 0105 Age of agricultural holder; (iii) 0107 Main purpose of production of the holding; (iv) 0202 Area of holding according to land use types; (v) 0203 Area of holding according to land tenure types; (vi) 0302 Area of land actually irrigated: fully controlled and partially controlled irrigation; (vii) 0407 Number of permanent crop trees in scattered plantings (for each tree crop); (viii) 0501 Type of livestock system; (ix) 0503 Number of female breeding animals; and (x) 0801 Household size by sex and age groups.

## 8. Use of technology

The CAWI, CATI and CAPI (tablets) methods were used for census data collection. The Ministry of Agriculture conducted in parallel a GIS mapping of crops to check and verify the census data. Census results were disseminated online.

## 9. Data processing

Direct data capture was ensured by the CAWI, CATI and CAPI methods through a dedicated IT system. Data were exported into various excel formats and analysed separately. The obtained data went through a series of tests both during the enumeration period and afterward. In cases where substantive lack of information or inconsistencies were discovered, telephone inquiries were conducted with the respondents. The data checks included, among other examinations, tests to detect missing variables, lack of information and inconsistency in one respondent's data and duplication of data reported by different respondents (mainly in cases of partnerships between farms or companies). Tests were conducted of compatibility between data reported in different parts of the questionnaire, as well as comparison with external sources of information (for example, the mapping project of the Ministry of Agriculture and Rural development and files of regularly reported statistics). Imputation used statistical methods such as near neighbour approach. In some limited cases administrative data were used to complete missing data. SAS was used for the statistical imputation. Due to COVID-19, the country postponed data processing activities in April 2020. The staff was reduced from 15 to 30 percent of its original size due to the pandemic. The staff that worked on the processing of the census data went on forced vacation, and therefore no progress was made at that time. The plans were to release a second news brief on livestock during April 2020, but it took longer. Two press releases have been published regarding the agricultural area in January 2020 and crops in August 2020. The press release on livestock was postponed due to lack of resources and was finally published in July 2021. The CBS was facing issues with the data quality. Its human resources are limited, and the bureau is not fully back to normal work. The country entered a second quarantine period in September 2020, slowing down census activities. Another limitation was that census data processing could only be performed from the office due to confidentiality concerns. A third COVID wave hit the country and is further delaying the publication on livestock data in 2021 as well.

## 10. Quality assurance

Various checks were used to avoid frame duplications. The data capture methods included some logical checks. Several questions were established as mandatory in the questionnaire. Consistency between variables and within records was checked along with comparison with administrative data at aggregated levels. If gaps were found, extensive verification was performed to track down the specific differences and correct errors.

## 11. Data and metadata archiving

Data and metadata were published in late 2022 and are available in the census webpage at <https://www.cbs.gov.il/en/publications/Pages/2021/Data-from-Agricultural-Census-2017.aspx>.

## 12. Data reconciliation

There was no reconciliation process of the AC 2017 data.

## 13. Dissemination of census results and microdata

The available results are published on the census website (<https://www.cbs.gov.il/en/publications/Pages/2021/Data-from-Agricultural-Census-2017.aspx>). A final report was published in April 2024 and is available at <https://www.cbs.gov.il/en/publications/Pages/2024/Agricultural-Census-2017.aspx>. Regarding microdata, the CBS is prohibited by the Statistics Ordinance from providing data or information concerning a farm to any other person or entity.

## 14. Data sources

**Central Bureau of Statistics.** 2021. Agricultural Census 2017. In: *Central Bureau of Statistics* [online]. Jerusalem, Israel. <https://www.cbs.gov.il/en/publications/Pages/2021/Data-from-Agricultural-Census-2017.aspx>

## 15. Contact

Central Bureau of Statistics  
Address: 66 Kanfey Nesharim, Jerusalem  
Telephone: 972-2-6592666  
E-mail: [info@cbs.gov.il](mailto:info@cbs.gov.il)  
Website: <https://www.cbs.gov.il/en/Pages/default.aspx>