

## 1. HISTORICAL OUTLINE

The country conducted the first Census of Agriculture (CA) in 2007.

## 2. LEGAL BASIS AND ORGANIZATION

### *Legal framework*

The CA was carried out according to the Law on Census of Agriculture in the Republic of Macedonia, 2007 (Official Gazette of the Republic of Macedonia No. 39/06 and 113/06).

### *Institutional framework and international collaboration*

The Government has given the State Statistical Office the authority to collect and compile information for statistical purposes.

### *Census staff*

The CA 2007 staff involved in field data collection comprised 5 181 enumerators, 604 district instructors, 117 state instructors (employees of the State Statistical Office) and 288 members of the Committees for census districts.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** 31 May 2007, for total area of holding, land tenure, land under permanent crops, livestock data, capacity of animal housing, owned machinery and equipment, etc.

**Reference period:** from 1 June 2006 to 31 May 2007, for area of arable land, irrigated area, machinery and equipment used, etc.

## 4. ENUMERATION PERIOD

The enumeration was conducted from 1 June to 15 June 2007.

## 5. SCOPE OF THE CENSUS AND DEFINITION OF THE STATISTICAL UNIT

The **census scope** covered agricultural activities (crop and livestock production). The census covered also all households that own forests<sup>1</sup> or fish ponds.<sup>2</sup>

The **statistical unit** was the agricultural holding, defined as an economic unit of agricultural production that meets specific size requirements (see section 7 below). The CA 2007 covered the following types of holdings: (i) holdings in the household sector ("individual agricultural holdings" and households that own forest and/or fish ponds); and (ii) holdings in the non-household sector (business entities).

## 6. GEOGRAPHIC COVERAGE

The CA 2007 covered the entire country.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

The following minimum size limits were applied for individual agricultural holdings:

- use 1 000 m<sup>2</sup> of agricultural area or more;
- use less than 1 000 m<sup>2</sup> of agricultural land or do not use any at all but own certain minimum number of livestock, poultry or beehives:
- one cow and one calf;
- one cow and one heifer;
- one cow and two adult head of small livestock;
- five adult sheep or goats;
- three adult pigs;
- four adult sheep or goats and pigs together;
- 50 numbers of adult poultry; or
- 20 beehives.

The CA 2007 also included the households below the minimum size limits specified above, if agricultural production was the only source of income of the household.

No threshold was applied for business entities.

## 8. METHODOLOGY

### *Methodological modality for conducting the census*

The classical approach was used in the CA.

<sup>1</sup> A forest is "every area over 500 m<sup>2</sup> overgrown with forest trees in the form of stands and is used for production of forest assortments or has a protective function or a special purpose.

<sup>2</sup> A fish pond is "a limited, closed space for rearing fish and can be filled with water and emptied".

**Frame**

The CA 2007 was organized according to the concept of complete coverage (“door to door”), which means that during the CA, all households on the territory of the Republic of North Macedonia were visited and recorded.

**Complete and/or sample enumeration methods**

The CA 2007 was conducted using complete enumeration.

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

Not applicable.

**Data collection methods**

Census data collection from holdings in the household sector was carried out by trained enumerators, using the PAPI method. Business entities were required to fill in the census questionnaires themselves and send them by post to the State Statistical Office (self-interviewing, mail-out/mail-back method).

**Questionnaire(s)**

Two forms were used for census data collection:

- Questionnaire for individual agricultural holdings (Form ZEM.P.1) – for individual agricultural holdings, as well as for households that own forest or fish ponds; and
- Questionnaire for business entities (Form ZEM.P.2) – for business entities and local units covered by the census.

The census covered all 16 core items recommended in the WCA 2010.

**9. USE OF TECHNOLOGY**

Census results were disseminated and are accessible online.

**10. DATA PROCESSING AND ARCHIVING**

Data capture was done using manual data entry. The software used for data processing, analysis and tabulation was SAS.

**11. CENSUS DATA QUALITY**

The PES was performed to check the quality of census data. Fifty EAs were selected for the PES and approximately 2 percent of the total number of individual agricultural holdings were interviewed.<sup>3</sup>

**12. DATA DISSEMINATION**

The final census results were published in three volumes (one for business entities and two for individual holdings) in December 2007. The publications include data on the national and regional level (according to the Nomenclature of Territorial Units for Statistics, NUTS 1 and 3 level). The publications and other census results are available on the institution’s website.

**13. DATA SOURCES**

**FAO.** 2017. Regional Roundtable on the World Programme for the Census of Agriculture 2020 (WCA 2020), 3–7 April 2017, Budapest, Hungary. In: *World Programme for the Census of Agriculture* [online]. Rome, Italy. [Cited 9 September 2019]. <http://www.fao.org/world-census-agriculture/events/wca2020budapest/en/>

**State Statistical Office of the Republic of North Macedonia.** 2007. *Publication: Census of Agriculture 2007*. In: State Statistical Office of the Republic of North Macedonia [online]. Skopje, North Macedonia. [Cited 26 August 2019]. [http://www.stat.gov.mk/PublikaciiPoOblast\\_en.aspx?id=51&rbrObl=33](http://www.stat.gov.mk/PublikaciiPoOblast_en.aspx?id=51&rbrObl=33)

**14. CONTACT**

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<sup>3</sup> The analyses of the PES results were done separately for: (i) land (total available land; utilized agricultural land; private-owned agricultural land; used arable land and gardens; used kitchen gardens; area under orchards; area under vineyards) by land size classes and (ii) livestock (cattle; sheep; pigs; goats; poultry) by classes. The following indices were calculated: rate of gross difference; net difference rate; gross turnover index; index of net change; identity index; index of inconsistency; average index of inconsistency. The results of PES were within the permitted limits, for most of the data.

# NORTH MACEDONIA – CENSUS OF AGRICULTURE 2007– MAIN RESULTS

NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS		
	Holdings	Area (ha)
<b>Total</b>	<b>192 675</b>	<b>398 221</b>
Civil persons (individuals)	192 378	321 813
Juridical persons	297	76 408

DISTRIBUTION OF HOLDINGS BY LAND SIZE CLASSES		
	Holdings	Area (ha)
<b>Total individual holdings</b>	<b>192 378</b>	<b>321 814</b>
Less than 0,5 ha	83 502	36 281
0,5–1 ha	38 598	38 554
1–3 ha	50 422	108 652
3–5 ha	11 919	53 352
5–8 ha	5 067	36 031
8–10 ha	1 212	12 321
10 ha and over	1 658	36 624

LAND USE		
	Holdings	Area (ha)
<b>Total</b>	<b>192 675</b>	<b>398 221</b>
UAA	n.a.	334 226
Arable land	n.a.	240 969
Land temporarily fallow	n.a.	16 976
Land under permanent crops	n.a.	35 849
Nurseries	n.a.	127
Permanent meadows and pastures	n.a.	57 280
Forest	n.a.	48 607
Other land	n.a.	15 389

MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX	
	Number
<b>Total engaged in agricultural activities on the holding</b>	<b>471 069</b>
Male	268 743
Female	202 326

SEASONAL EMPLOYEES USED ON THE HOLDING	
	Number
<b>Total</b>	<b>109 606</b>
Male	67 686
Female	41 920
Civil persons	103 187
Male	65 337
Female	37 850
Juridical persons	6 419
Male	2 349
Female	4 070

LIVESTOCK		
	Holdings	Head
<b>Total holdings with livestock</b>	<b>n.a.</b>	
Cattle	50 593	241 257
Sheep	8 386	794 053
Goats	25 401	132 924
Pigs/swine	50 315	233 702
Horses	26 654	32 567
Poultry (1 000 head)	62 350	2 429
Other animals	n.a.	
Rabbits and hares	3 353	35 567
Insects		
Bees (hives)	5 270	109 769

IRRIGATION BY LAND USE TYPES		
	Holdings	Area irrigated (ha)
<b>Holdings with irrigated land</b>	<b>131 334</b>	<b>79 638</b>
Land under temporary crops	n.a.	54 938
Land under permanent crops	n.a.	18 607
Meadows	n.a.	4 333
Other	n.a.	1 761

MACHINERY AND EQUIPMENT BELONGING TO THE HOLDING	
	Units
Four-wheel tractors	53 606
Cultivator	22 244
Other (machine-powered)	
Combine for cereals	1 799
Machines for collecting agricultural products	4 160
Machines for sowing, planting and transplanting	10 125
Equipment for irrigation	63 191
Milking equipment	4 118
Grape presses	6 022
Other equipment	65 334
Vehicles	6 616
Tractor trailers	43 072

TEMPORARY CROPS HARVESTED	
	Area (ha)
<b>Total</b>	<b>n.a.</b>
Wheat	88 736
Maize	26 997
Barley	32 865
Rice	2 992
Tomatoes	2 137
Cucumbers	551
Beans	1 881
Onion	1 248
Garlic	169
Carrots	144
Cabbages	1 208
Watermelons	3 472
Melons	571
Pepper	5 109
Potatoes	5 201
Soya beans	358
Sunflower	3 493
Rape	109
Tobacco	12 190
Sugar beet	320
Fodder crops	25 529
Aromatic and medicinal plants	61
Seeds and seedlings	102
Flowers and ornamental plants	692