

## 1. HISTORICAL OUTLINE

The metadata review and data here presented refer to the last agricultural census (AC) in Montenegro, carried out in 2010. Previous agricultural censuses were conducted in 1931 and 1960.

## 2. LEGAL BASIS AND ORGANIZATION

### **Legal framework**

The legal framework of the AC 2010 includes:

- the Law on Statistics and Statistical System of Montenegro (Official Gazette of the Republic of Montenegro 69/05);
- the Law on Conducting the 2010 AC (Official Gazette of Montenegro 54/09 and 14/10);
- FAO recommendations for the AC, WCA 2010; and
- the relevant EU legislation for implementing the FSS (2010).

### **Institutional framework and international collaboration**

The main bodies involved in the preparation, organization and conducting of the AC were: (i) the Statistical Office of Montenegro (MONSTAT), which had the authority to collect, compile, analyse and publish information for statistical purposes, according to the Law on Statistics and Statistical System of Montenegro; and (ii) the Committee for the AC, established under the Law on Conducting the AC 2010.

### **Census staff**

The AC 2010 field data collection involved 2 170 enumerators and 270 supervisors. For data entry, 30 persons were hired.

## 3. REFERENCE DATE AND PERIOD

**Reference day:** 31 May 2010, for land tenure, vineyards, orchards, organic agriculture, livestock, buildings, agricultural machinery and equipment, etc.

### **Reference periods:**

- the crop year (from 1 June 2009 to 31 May 2010), for utilised arable land, irrigated areas, soil conservation, tillage methods, animal housing and labour force, other gainful activities, landscape features, etc.
- the last three years (2008–2010), for rural development support, agricultural services, etc.

## 4. ENUMERATION PERIOD

Data collection started on 7 June 2010 and ended on 21 June 2010.

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

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

The **statistical unit** was the agricultural holding, defined as a single unit, both technically and economically, which has a single management and which undertakes agricultural activities and meets certain minimum thresholds of activity which are similar to the EU and Council Regulation (EC) No. 1166/2008. Two types of holdings were distinguished in the AC 2010: (i) family agricultural holdings (holdings in the household sector); and (ii) business entities (holdings in the non-household sector).

## 6. GEOGRAPHIC COVERAGE

The AC 2010 covered the entire country.

## 7. CUT-OFF THRESHOLD AND OTHER EXCLUSIONS

A family agricultural holding was covered by the census if, at the moment of registration, it met the following threshold:

- it had at least 1 000 m<sup>2</sup> of agricultural land; or
- if it had less than 1 000 m<sup>2</sup>, it possessed at least: one cow and one calf; one cow and one heifer; one cow and two adult head of small stock; five adult sheep or goats; three adult pigs; or four adult head of sheep or goats or pigs together; 50 head of adult poultry; or 20 beehives.

Exceptions were households not fulfilling the minimum threshold conditions, but: (i) where agricultural production was the only source of income; or (ii) engaged only in the cultivation of mushrooms in special buildings (cellars or tunnels).

No threshold was applied for business entities.

## 8. METHODOLOGY

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

The classical approach was used in the AC 2010.

### **Frame**

The census frame was established based on a listing operation and using the available information from 2003 Census of Population, Dwellings, and Households. The listing operation helped to enumerate all households, and screen the agricultural production households that met the criteria applicable to holdings.

**Complete and/or sample enumeration methods**

The AC 2007 was conducted using complete enumeration of the target population.

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

Not applicable.

**Data collection method(s)**

The enumeration of family agricultural holdings was conducted by face-to-face interview, using the “door-to-door”, PAPI method. Business entities were enumerated by self-interviewing, using the mail-out/mail-back (“postal”) method.

**Questionnaire(s)**

Three data collection forms were used for the AC 2010:

- Form P-1 (Household Listing Form) was a listing of all households, aimed at identifying family agricultural holdings;
- Form P-2 for the enumeration of family agricultural holdings; and
- Form P-3 for the enumeration of business entities.

The census questionnaires 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**

For data entry, MONSTAT prepared an application called ENTRY. During data entry, statisticians controlled the accuracy of the entire process from the questionnaire on the application. Data entry took one month and a half. After entering, the material was controlled. To control the data in MONSTAT, an application called CONTROL was elaborated; this detected logical and arithmetical errors at questionnaire level. For the updating process, MONSTAT elaborated an application called CORRECTION. The application enabled viewing the errors in the questionnaire, as well as the type of error in the survey. The correction of the material was performed by MONSTAT employees. The complete software was done in the IT department of the MONSTAT. The application was made in Visual Basic 6.0 and the database was SQL Server 2000.

**11. CENSUS DATA QUALITY**

A PES was conducted immediately after the end of the AC enumeration, from 25 June to 5 July 2010. The PES was an effort to assess data quality and was carried out in EAs and municipalities selected at random. The PES took place using special questionnaires, with a limited number of variables.<sup>1</sup>

**12. DATA DISSEMINATION**

The preliminary results of the AC 2010 were published in July 2010 in the form of a press release (only the number of holdings and UAA for farm agricultural holdings). The final results were published seven months after the release of preliminary results.<sup>2</sup> The results of the AC 2010 are available in the form of tables and publications on the MONSTAT website.<sup>3</sup>

**13. DATA SOURCES**

**Eurostat.** 2019. Database, Agriculture, forestry and fisheries. In: *European Commission: Eurostat* [online]. Luxembourg. [Cited 26 August 2019]. <https://ec.europa.eu/eurostat/data/database>

**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/>

**Statistical Office of Montenegro.** 2011. *Agricultural Census 2010, key variables - land and livestock resources, data by municipalities*. Podgorica, Montenegro. (also available at [http://www.monstat.org/userfiles/file/popis%20poljoprivrede/knjiga\\_1%20POLJ%2015.4.pdf](http://www.monstat.org/userfiles/file/popis%20poljoprivrede/knjiga_1%20POLJ%2015.4.pdf)).

**14. CONTACT**

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<sup>1</sup> The results showed that deviations in coverage and data quality collected by the census and PES are statistically insignificant.

<sup>2</sup> MONSTAT published five publications based on census results: (i) Census key variables; (ii) Land use; (iii) Livestock; (iv) Special interest topics; and (v) Typology of farms.

<sup>3</sup> Available at <http://www.monstat.org/eng/page.php?id=58&pageid=58>

# MONTENEGRO – AGRICULTURAL CENSUS 2010 – MAIN RESULTS<sup>1</sup>

| NUMBER OF HOLDINGS AND AREA, BY LEGAL STATUS      |               |                |
|---|---------------|----------------|
|   | Holdings      | Area (ha)      |
| <b>Total</b>                                      | <b>48 870</b> | <b>309 220</b> |
| Civil persons                                     | 48 820        | 294 400        |
| An individual (sole holder holdings) <sup>2</sup> | 48 820        | 294 400        |
| Juridical persons (legal entities)                | 50            | 14 820         |

| LAND TENURE  |               |                |
|--|---------------|----------------|
|  | Holdings      | UAA (ha)       |
| <b>Total</b>   | <b>48 870</b> | <b>221 300</b> |
| Legal ownership and owner-like possession (owned land) | 48 220        | 97 930         |
| Rented from others (land rented)                       | 450           | 2 220          |
| Other form of tenure (shared farming or other modes)   | 1 670         | 121 150        |

| DISTRIBUTION OF UAA, BY LAND SIZE CLASSES |               |                |
|---|---------------|----------------|
|   | Holdings      | UAA (ha)       |
| <b>Total</b>                              | <b>48 870</b> | <b>221 300</b> |
| Holdings without UAA                      | 590           |                |
| Holdings with UAA                         | 48 280        | 221 300        |
| Less than 2 ha                            | 35 270        | 23 000         |
| 2–4,99 ha                                 | 7 630         | 23 500         |
| 5–9,99 ha                                 | 2 710         | 18 540         |
| 10–19,99 ha                               | 1 160         | 15 500         |
| 20–29,99 ha                               | 330           | 7 850          |
| 30–49,99 ha                               | 310           | 12 360         |
| 50–99,99 ha                               | 440           | 31 650         |
| 100 ha and over                           | 430           | 88 900         |

| LAND USE                                     |               |                |
|--|---------------|----------------|
|  | Holdings      | Area (ha)      |
| <b>Total</b>                                 | <b>48 870</b> | <b>309 220</b> |
| UAA  | 48 280        | 221 300        |
| Arable land                                  | 10 190        | 4 050          |
| Land temporarily fallow                      | 50            | 30             |
| Land under permanent crops                   | 5 860         | 4 650          |
| Permanent meadows and pastures               | 43 130        | 210 180        |
| Kitchen garden                               | 37 000        | 2 410          |
| Other land                                   | 47 990        | 87 920         |
| Wooded area                                  | 22 130        | 43 220         |
| Unutilised agricultural land and other areas | 47 540        | 44 710         |

| MANAGERS BY SEX <sup>3</sup> |               |                   |
|------------------------------|---------------|-------------------|
|                              | Number        | UAA operated (ha) |
| <b>Total</b>                 | <b>48 870</b> | <b>221 300</b>    |
| Male                         | 42 580        | 204 640           |
| Female                       | 6 290         | 16 660            |

| MEMBERS OF HOLDER'S HOUSEHOLD, BY SEX <sup>4</sup>             |               |
|--|---------------|
|  | Number        |
| <b>Total engaged in agricultural activities on the holding</b> | <b>49 380</b> |
| Male   | 16 790        |
| Female   | 32 590        |

| LABOUR FORCE OF THE HOLDING     |               |
|---------------------------------|---------------|
|                                 | Number        |
| <b>Total</b>                    | <b>98 960</b> |
| Male                            | 59 800        |
| Female                          | 39 170        |
| Family labour force             | 98 210        |
| Male                            | 59 330        |
| Female                          | 38 880        |
| Regular non-family labour force | 760           |
| Male                            | 470           |
| Female                          | 290           |

| MANAGERS BY SEX AND AGE <sup>3</sup> |               |
|--------------------------------------|---------------|
|                                      | Number        |
| <b>Total</b>                         | <b>48 870</b> |
| Male                                 | 42 580        |
| Female                               | 6 290         |
| Less than 35 years                   | 2 740         |
| Male                                 | 2 540         |
| Female                               | 200           |
| 35–44 years                          | 6 000         |
| Male                                 | 5 550         |
| Female                               | 450           |
| 45–54 years                          | 11 700        |
| Male                                 | 10 790        |
| Female                               | 910           |
| 55–64 years                          | 12 210        |
| Male                                 | 10 670        |
| Female                               | 1 540         |
| 65 years and over                    | 16 230        |
| Male                                 | 13 040        |
| Female                               | 3 190         |

| LIVESTOCK                            |               |         |
|--------------------------------------|---------------|---------|
|                                      | Holdings      | Head    |
| <b>Total holdings with livestock</b> | <b>33 530</b> |         |
| Cattle                               | 24 620        | 80 210  |
| Sheep                                | 6 090         | 229 040 |
| Goats                                | 3 580         | 35 760  |
| Pigs/swine                           | 13 470        | 47 670  |
| Equines (Equidae)                    | 3 120         | 4 400   |
| Poultry (1 000 head)                 | n.a.          | n.a.    |
| Broilers                             | 550           | 130     |
| Laying hens                          | 15 800        | 490     |
| Others                               | 570           | 10      |
| Other animals                        |               |         |
| Rabbits (breeding females)           | 150           | 1 090   |
| Insects                              |               |         |
| Bees (hives)                         | 2 530         | 50 020  |

| METHODS OF IRRIGATION                           |              |                     |
|---|--------------|---------------------|
|   | Holdings     | Irrigable area (ha) |
| <b>Total holdings with irrigable area</b>       | <b>8 470</b> | <b>5 050</b>        |
| <b>Holdings with irrigated area<sup>5</sup></b> | <b>8 470</b> | <b>5 050</b>        |
| Surface   | 6 460        | n.a.                |
| Sprinkler                                       | 2 580        | n.a.                |
| Localized irrigation (drop irrigation)          | 800          | n.a.                |

<sup>1</sup> Data source – Eurostat database, available at: <https://ec.europa.eu/eurostat/web/agriculture/data/database>

<sup>2</sup> The categories in brackets are presented as indicated in the Eurostat database (if different from the WCA 2010).

<sup>3</sup> According to Eurostat, managers include holders that manage the holding themselves, and managers that are not holders, including of legal units

<sup>4</sup> Data are presented without holders.

<sup>5</sup> Excluding kitchen garden and area under glass.