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Structural data from agricultural censuses

February 2023 update

HIGHLIGHTS

- **A new FAOSTAT domain launched in May 2022 presents structural data from agricultural censuses conducted in the 1990, 2000 and 2010 World Programme for the Census of Agriculture (WCA) rounds, with some holding-level information dating from the 1930s.**
- **In early 2023, the first update of the domain was undertaken with data for 21 countries from the WCA 2020 round, including three new countries: Kiribati, the Federated States of Micronesia and Tuvalu.**
- **The new WCA 2020 data shows that China and India continued to report the largest number of holdings.**
- **Australia, the United States of America, the Russian Federation, Brazil (in WCA 2010), India and Argentina reported the largest total holdings' area in the 2020 agricultural census round.**
- **In the 2020 census round, the largest average holdings' area was seen in Australia, with Iceland and Argentina distant second and third.**

FAOSTAT STRUCTURAL DATA FROM AGRICULTURAL CENSUSES

BACKGROUND

A census of agriculture is a large-scale statistical operation for collecting, processing and disseminating data on the structure of agriculture of a country. The census of agriculture collects data on agricultural holdings¹ (often called farms) at the lowest geographical level. Typical structural data collected include the size and number of agricultural holdings, the holder's gender, the type of land tenure, the legal status of holders, as well as information on land use, crop area and farm labour. The Food and Agriculture Organization of the United Nations' (FAO) World Programme for the Census of Agriculture is the framework under which national censuses are conducted at least once every ten years according to common international guidelines. The ten-year frequency is used because censuses measure structural aspects of agriculture that do not change much within this time frame.

At the end of each decennial census round, FAO's Statistics Division reviewed the national census practices and published countries' methodologies and data on the structure of agriculture under the Statistical Development Series (SDS). In May 2022, the FAO Statistics Division launched the new FAOSTAT domain *Structural data from agricultural censuses*. The new FAOSTAT domain disseminated structural data gathered from the last three completed rounds (1990, 2000 and 2010) published in SDS

¹ An agricultural holding is "an economic unit of agricultural production under single management comprising all livestock kept and all land used wholly or partly for agricultural production purposes, without regard to title, legal form or size" (FAO, 2015). One household may have more than one agricultural holding (i.e. two household members managing each different agricultural activities), but normally there is only one agricultural holding in a household, i.e. one-to-one correspondence.

9/9a, 13 and 18, respectively (FAO, 1997, 2001, 2010 and 2021). Some of the data, such as the size² and number of agricultural holdings, were available over longer time series, starting as early as from the WCA 1930. The domain is a one-stop shop for agricultural structural data not available elsewhere.

In early 2023 and for the first time in a census round, FAO's Statistics Division began to review the national census practices, methodologies and main data for agricultural censuses completed so far in the WCA 2020 round. This effort allowed the standardization and validation of data from national census reports for 21 countries, and thus, the first update of the domain. Three of these countries (Kiribati, the Federated States of Micronesia and Tuvalu) are new in the domain as they had not conducted censuses in the previous three rounds.

In contrast to other FAOSTAT domains, for which data are available annually, census data are available decennially by virtue of the frequency of the WCA mentioned above. Table 1 below shows the data availability and the global and regional participation of countries and territories by WCA round. Figures for the WCA 2020 are preliminary as they correspond to census data uploaded in the domain as of early 2023.³ The table shows an upward trend in country participation since the WCA 1930. Few countries have participated in all rounds, and most countries have had an irregular participation. Furthermore, due to the varying scope and coverage of national censuses, not all countries report all the structural agricultural variables covered in the FAOSTAT domain. In addition, cut-off thresholds, i.e. the minimum size limits for the inclusion of holdings that countries apply, may vary from census to census. This irregularity in terms of country participation, item coverage and thresholds must be kept in mind when making comparisons across WCA rounds.

Table 1: Number of countries and territories participating in the WCA rounds

Region	WCA round								
	1930	1950	1960	1970	1980	1990	2000	2010	2020
Total	53	81	100	112	103	94	122	127	21
Africa	8	18	29	25	21	23	25	22	1
Americas	14	26	29	33	28	23	22	28	5
Asia	4	11	20	21	21	14	31	29	4
Europe	23	20	17	24	22	21	33	36	1
Oceania	4	6	5	9	11	13	11	12	10

Note: The WCA 1940 round could not be completed due to the onset of the Second World War. Figures for the WCA 2020 are preliminary as of early 2023.

Source: FAO. 2023. Structural data from agricultural censuses. In: FAO. Rome. Cited February 2023. <http://www.fao.org/faostat/en/#data/WCAD>

Table 2 shows the 21 countries and territories updated on the FAOSTAT domain for the WCA 2020. Five of the censuses came from territories of the United States of America (American Samoa, Guam, the Northern Mariana Islands, Puerto Rico and the United States Virgin Islands). Three other countries

² The area of the holding is area managed by the holder and includes: land used for growing crops (temporary and permanent), meadows and pastures, and fallow land; unutilized agricultural land; forest and other wooded land; bodies of water; farmyards and land occupied by farm buildings; and land for which a holding does not have any rights to agricultural use, except for the products of the trees grown on it (FAO, 2015).

³ The number of completed or ongoing censuses is much higher. However, 21 is the number of countries that submitted their census reports to FAO and for which processing, standardization and validation were completed by early 2023.

(Kiribati, the Federated States Micronesia and Tuvalu) had not conducted censuses in the previous three rounds. Logistics costs make census operations costly in small Pacific Island countries (PICs) as they are composed of scattered atolls. With the support of the Pacific Community (SPC) and FAO, several PICs have for the first time included an agriculture module in their population and housing census and published the module's results.

Table 2: Countries and territories covered in the first update for the WCA 2020

Africa (1) South Africa	Asia (4) China India Japan Jordan	Europe (1) Russian Federation
Americas (5) Argentina Canada Puerto Rico United States of America United States Virgin Islands	Oceania (10) American Samoa Australia Fiji Guam Kiribati Micronesia (Federated States of) New Zealand Northern Mariana Islands Samoa Tuvalu	

Source: FAO. 2023. Structural data from agricultural censuses. In: FAO. Rome. Cited February 2023. <http://www.fao.org/faostat/en/#data/WCAD>

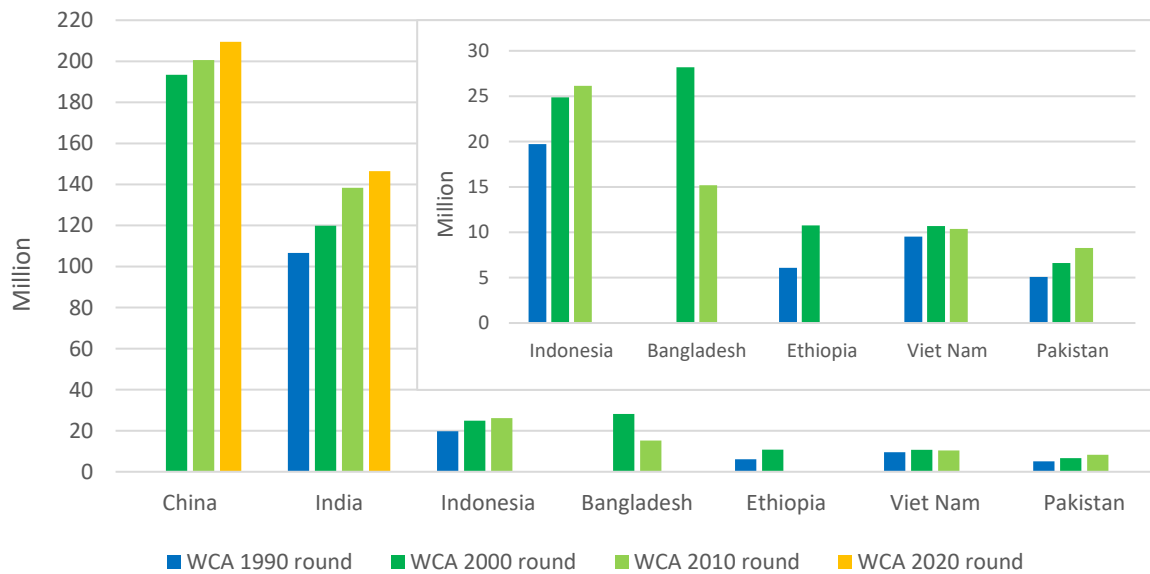
The following section presents some selected analysis featuring some of the countries of the first update of the domain *Structural data from agricultural censuses*.

COUNTRY

Six out of the seven countries with the largest number of holdings were in Asia both in the WCA 2020 (China and India) and 2010 rounds (Figure 1). China⁴ (209.5 million), India (146.5 million), Indonesia (26.1 million in the WCA 2010), Bangladesh (15.2 million in the WCA 2010), Ethiopia (10.8 million in the WCA 2000), Viet Nam (10.4 million in the WCA 2010), and Pakistan (8.3 million in the WCA 2010) accounted for the bulk of holdings reported. The Russian Federation, which has a large number of holdings, did not report this data in any census round. The number of holdings continued its upward trend in China and India in the WCA 2020. For countries where the total holding's area has remained fairly stable or declining, this suggests that holdings may be becoming smaller in size.

⁴ China conducted its first national census in 1997 (WCA 2000 round).

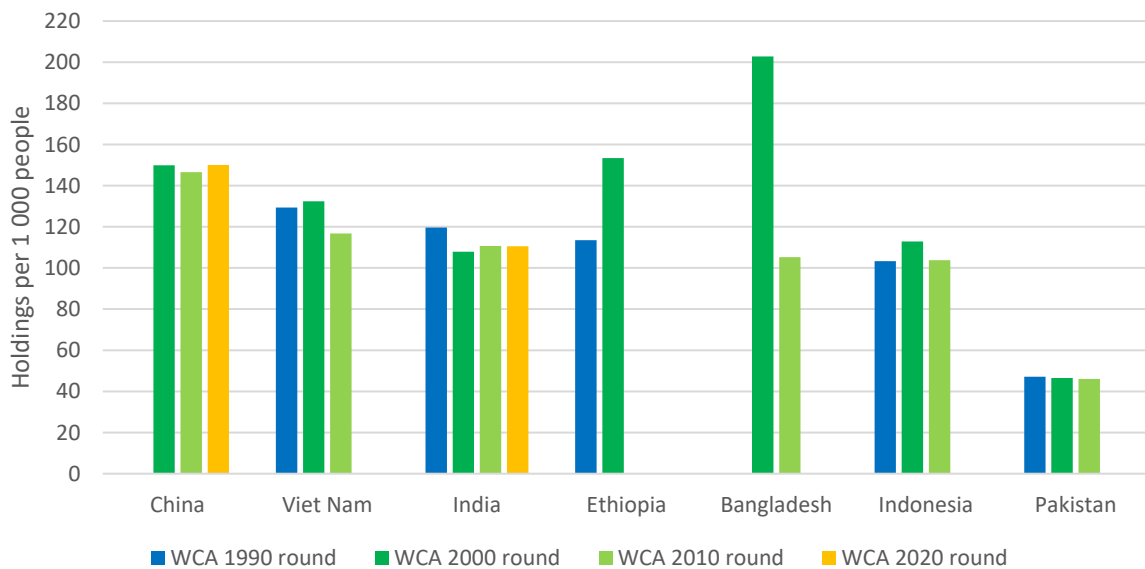
Figure 1: Countries with the largest number of holdings



Source: FAO. 2023. Structural data from agricultural censuses. In: FAO. Rome. Cited February 2023. <http://www.fao.org/faostat/en/#data/WCAD>

Figure 2 shows that China leads in terms of holdings per 1 000 people (150 holdings in the WCA 2020), followed by Viet Nam (117 in the WCA 2010) and India (111 in the WCA 2020).

Figure 2: Countries with the largest number of holdings per 1 000 people

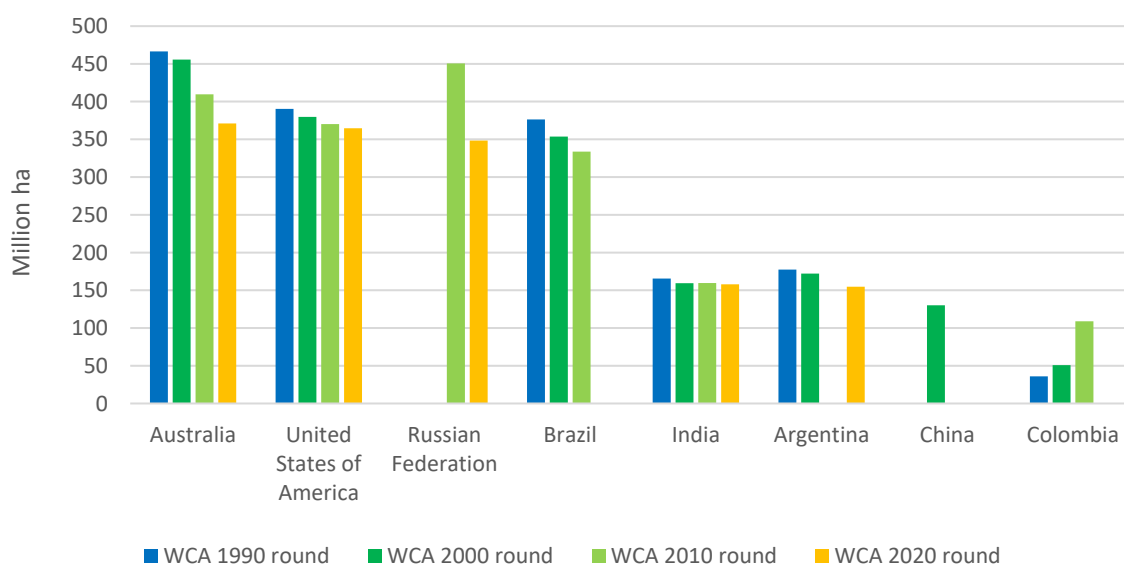


Source: FAO. 2023. Structural data from agricultural censuses. In: FAO. Rome. Cited February 2023. <http://www.fao.org/faostat/en/#data/WCAD>

The WCA 2020 data show that Australia (371.1 million ha, 9 percent less) and the United States of America (364.6 million ha, 1.5 percent less) overtook the Russian Federation⁵ (348.4 million ha, 23 percent less than in the WCA 2010) as the countries with the largest total holdings' area⁶ (Figure 3). These countries were followed by Brazil (333.7 million ha in the WCA 2010). Some drastic reductions were seen in the Russian Federation and Australia due to changes in the thresholds applied for inclusion from the WCA 2010 to the WCA 2020. The Russian Federation changed the threshold from 1 ha of sown areas to 40 ha, while Australia changed its threshold from businesses undertaking agricultural activity above AUD 5 000 to above AUD 40 000.

Other countries with large holdings' area included India (157.8 million ha, 1 percent less than in the WCA 2010), Argentina (154.8 million ha, 10 percent less than in the WCA 2000), China (130 million ha in the WCA 2000 round), and Colombia⁷ (109 million ha in the WCA 2010 round). China did not report holdings' area in the 2010 and 2020 census rounds. In all these countries except Colombia, the total holdings' area disclosed in census reports has been declining since the WCA 1990 round.

Figure 3: Countries with largest total holdings' area



Source: FAO. 2023. Structural data from agricultural censuses. In: FAO. Rome. Cited February 2023. <http://www.fao.org/faostat/en/#data/WCAD>

Finally, the new WCA 2020 data show that the largest average holdings' areas were observed in Australia (4 331 ha), Iceland (988 ha in the WCA 2010), Argentina (620 ha), Uruguay (365 ha in the WCA 2010), Canada (332 ha), New Zealand (266 ha), Czechia (222 ha in the WCA 2010), and the United States of America (179 ha) (Figure 4). These countries were followed by Slovakia (125 ha), Chile (121 ha) and Paraguay (107 ha) in the WCA 2010. The average holding's area rose in all countries

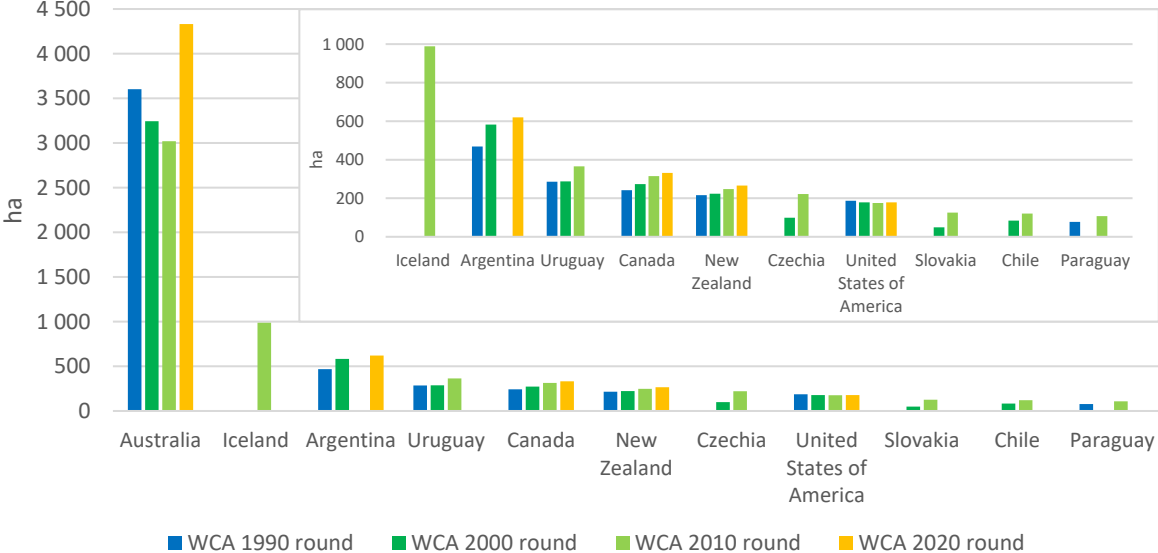
⁵ The Russian Federation conducted its first census in 2006 (WCA 2010 round).

⁶ The agricultural holding's area is the area managed or operated by the holder. Therefore, a country's total holding's area differs from the land area reported in the FAOSTAT Land Use domain, which includes area not operated by agricultural holders, such as some forest estates, community land and other area.

⁷ Data reported by Colombia in the WCA 1990 and 2000 rounds were sourced from national agricultural surveys.

reporting in the 2020 census round. In South America, the leading meat-producing countries, such as Argentina and Uruguay, have large holdings and their average sizes are increasing.

Figure 4: Countries with the largest average holdings' areas



Source: FAO. 2023. Structural data from agricultural censuses. In: FAO. Rome. Cited February 2023. <http://www.fao.org/faostat/en/#data/WCAD>

EXPLANATORY NOTES

The FAOSTAT domain *Structural data from agricultural censuses* was launched in 2022 to disseminate data collected in national censuses of agriculture at the agricultural holding level. The censuses of agriculture are conducted under the FAO's World Programme for the Census of Agriculture, which is a decennial programme. Following this launch, and for the first time in a census round, FAO's Statistics Division began to review data from censuses completed before the end of the current WCA 2020 round. This effort allowed the first update of the domain with WCA 2020 data for 21 countries.

An agricultural holding is an economic unit of agricultural production under single management and its size is the area managed or operated by the holder. Therefore, a country's total holding's area differs from land area reported in other FAOSTAT domains. The structural data in the domain includes the size and number of holdings, holder gender, land tenure, legal status of holders, and farm labour, among others.

The data in this FAOSTAT domain are not available annually, as census structural data are collected and reported on a decennial basis. It is important to note that most countries have had irregular participation in the WCA rounds. Furthermore, due to the varying scope and coverage of national censuses, not all countries report all the structural agricultural variables covered in this FAOSTAT domain. In addition, cut-off thresholds for the inclusion of holdings may vary from census to census. This irregularity in terms of country participation and coverage must be taken into account when making comparisons across WCA rounds.

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