BANGLADESH – AGRICULTURAL CENSUS 2019 – METADATA REVIEW

1. Historical outline

The first agricultural census (AC) in Bangladesh, then a territory, was carried out in 1960.[1] After independence in 1971, five ACs were carried out in 1977, 1983/1984, 1996, 2008 and 2019, and also an Agricultural Sample Survey in 2005. The metadata review and data presented here refers to the AC 2019.

2. Legal basis and organization

Legal framework

AC in Bangladesh is carried out and administered as per section 6(c) of the Statistics Act 2013, approved by the National Assembly on 27 February 2013. The National Strategy for Development of Statistics (NSDS) was approved in 2013 by the cabinet division to formulate short, medium, and long-term plans in the interest of overall development of the country's statistical system. BBS adopted a project called Agriculture (Crops, Fisheries and Livestock) Census 2018 Project, under which the AC 2019 was carried out.

Institutional framework and international collaboration

The Bangladesh Bureau of Statistics (BBS) in the Statistics and Informatics Division (SID) under the Ministry of Planning is responsible for generating and authenticating all official statistics of the country, including the AC, as well as Agricultural sampling surveys. For the AC 2019, at the national level there was a Steering Committee headed by the Secretary of Statistics and Informatics Division (SID) and a technical committee headed by the Director General of the BBS. At the field level separate division, district, upazila/thana and union census committees were formed. Officials from SID and BBS participated in monitoring and supervision activities during data collection. BBS mid-level officials and staff from sub-district to headquarters were engaged in data collection process. FAO assisted the country with census preparation activities through Technical Cooperation Programme projects.

Census staff

The data collection in the first phase of the AC involved 144 236 enumerators, supervised by 23 183 supervisors at a rate of five to six enumerators per supervisor. The supervisors' activities were coordinated by 2 124 zonal officers. In addition, the BBS appointed 89 district coordinators, 10 divisional census coordinators to monitor and complete the field level data collection. In the second phase of the census, data collection involved 1 223 enumerators, 223 supervisors, and 64 district census coordinators and 8 divisional census coordinators.

3. Reference date and period

Reference day: the day of enumeration for households, size of farm, land tenure, livestock and poultry inventories, agriculture implements, etc.

Reference period: a 12-month period (from 14 April 2018 to 13 April 2019) for utilization of operated land, crop production, employment in agricultural related work, etc.

4. Enumeration period

The enumeration for the first phase (short questionnaire) of the census was carried out from 9 to 20 June 2019. The data collection of the sample census (long questionnaire) component was expected to be conducted between April and May 2020 but was delayed due to the COVID-19 pandemic. It was completed from 22 November to 29 December 2020.

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

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

The **statistical unit** for the AC 2019 was the agricultural household (holdings[2]), defined as a production unit under single management, both technically and economically, and engaged in agricultural activities. The AC 2019 covered all households of the country.

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[1] The 1960 AC was conducted on a sample basis, before the country achieved independence in 1971.

[2] An agriculture holding and a household may be considered synonymous, as in previous agriculture censuses.

Community-level data

No community survey was conducted.

6. Census coverage

Geographic coverage

The AC 2019 covered the entire country.

Cut-off threshold and other exclusions

The AC 2019 covered all households of the country. Among the households which were cultivating at least 0.05 acres land were defined as agriculture households.

7. Methodology

Methodological modality for conducting the census

The AC 2019 used the classical approach (a short-long questionnaire concept). Data collection was carried out in two phases, by using: (i) a short questionnaire, in the first phase, based on complete enumeration; and (ii) a long questionnaire, in the second phase, sample based.

Relation to other censuses

No relationship with other censuses.

Frame

The operational holdings identified in the first phase conducted using a short questionnaire provided the frame for the agricultural survey for the second phase of the census. The AC 2019 also provided frame for conducting different surveys on crop, fisheries, and livestock sectors in the country.

Complete and/or sample enumeration methods

The census was conducted in two phases:

• Phase I: Scope of the agriculture census indicates to complete the enumeration of all households, a short questionnaire containing basic agriculture-related items was used for data collection from 09 to 20 June 2019.

• Phase II: sample enumeration with a long questionnaire was adopted to obtain detailed data on agriculture. Data collection was conducted from 22 November to 29 December 2020.

Sample design

A two-stage stratified sampling design was used in the second phase of census, Agriculture sample census 2020 (ASC 2020). In the first stage, enumeration areas (EAs) were selected by probability proportional to size (PPS) method and in the second stage, farm households were selected by systematic random sampling methods. Each district was considered as domain which contained three strata (crops, fisheries and livestock) so there were 64 domains in the country and 192 strata. From each of the strata, 53 EAs as primary sampling unit (PSU) were selected and in case of domain with less than 53 EAs, all such EAs were selected as PSU. A total of 9863 EAs (PSUs) were selected in the sample. In the second stage, 15 farm households were selected in every sample EA irrespective of size of the EA. In case of EAs with less than 15 farm households, all such households were selected. A total of 147 674 households were selected.

Data collection method(s)

The method used was face-to-face interviews using paper questionnaires (the PAPI method).

Questionnaire(s) and items covered

Data were collected using two questionnaires: (i) a short questionnaire in the first phase (complete enumeration); and (ii) a long questionnaire in the second phase (sample-based).

The AC 2019 covered 15 out of the 23 essential items recommended in the WCA 2020.[3]

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[3]The following essential items were not covered by the AC: (i) 0103 Legal status of agricultural holder (type of holder); (ii) 0105 Age of agricultural holder; (iii) 0107 Main purpose of production of the holding; (iv) 0108 Other economic activities of the

8. Use of technology

Intelligent Character Recognition (ICR) method was used for scanning and extracting data from paper forms. Census results were disseminated and are accessible online. GIS maps were used to identify enumeration areas under Mouza or Moholla.

9. Data processing

ICR was used for scanning and extracting data from paper forms. Validation was carried out through staff which reviewed the processed data and corrected errors or missing data manually. . Foxpro was used for data analysis of the AC short questionnaire, CSpro was used for the long questionnaire for data entry, processing and analysis, and STATA was also used for data analysis. All data were thoroughly edited to ensure completeness, accuracy, and consistency

10. Quality assurance

The AC questionnaires were pre-tested at the field level to test the relevance and adequacy of the survey instruments. The results of the pre-test were analysed for finalizing the questionnaires. Following the completion of the census field work, a Post Enumeration Check (PEC) Survey was conducted to assess the quality of the data.

11. Data and metadata archiving

Metadata of AC 2019 and ASC 2020 is archived in the BBS server. The data can also be explored from Agriculture Data Management System (ADMS) of BBS. All reports with metadata are available in the Agriculture Data Management System (ADMS) which is available on the BBS website (www.bbs.gov.bd).

12. Data reconciliation

There was no reconciliation process of AC 2019 data.

13. Dissemination of census results and microdata

Preliminary results of the AC 2019 were published in October 2019. Final results were published in December 2022 and are available in the BBS website at https://bbs.portal.gov.bd/site/page/6b4c2697-452b-4bc6-9ee2-1fb5e0fc66c0/-. Volume 1 contains information from AC 2019 on the structure of agricultural holdings and livestock and fisheries, while volumes 2 to 4 correspond to the crops, livestock, and fisheries reports from the ASC 2020, respectively. Volume 5 contains cropping pattern report (available at https://bbs.portal.gov.bd/sites/default/files/files/bbs.portal.gov.bd/page/c645bd51_3cb5_4f53_86f9_7d29244caa4e/2023-12-12-06-58-283373b2bfd7d1675a18256742895599.pdf.) and volume 6 contains analytical report (available at https://bbs.portal.gov.bd/sites/default/files/files/bbs.portal.gov.bd/page/c645bd51_3cb5_4f53_86f9_7d29244caa4e/2023-12-12-06-55-7c3ece362a60c3be72b6b30812f0def8.pdf).. District (64) reports are also available in the BBS website at https://bbs.portal.gov.bd/site/page/6b4c2697-452b-4bc6-9ee2-1fb5e0fc66c0/-. Microdata is provided as required by users following the BBS data dissemination policy.

14. Data sources

Bangladesh Bureau of Statistics (BBS). 2019. *Preliminary Report on Agriculture Census 2019.* Dhaka, Bangladesh.

Bangladesh Bureau of Statistics (BBS). 2022. *Agricultural Census 2019: Structure of Agricultural Holdings and Livestock & Fisheries, Volume 1.* Dhaka, Bangladesh. December 2022 (also https://bbs.portal.gov.bd/site/page/6b4c2697-452b-4bc6-9ee2-1fb5e0fc66c0/-)

Bangladesh Bureau of Statistics (BBS). 2022. *Agricultural Sample Census 2020: Crops Report, Volume 2.* Dhaka, Bangladesh. December 2022 (also https://bbs.portal.gov.bd/site/page/6b4c2697-452b-4bc6-9ee2-1fb5e0fc66c0/-)

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household; (v) 0411 Use of each type of fertilizer; (vi) 0501 Type of livestock system; (vii) 0601 Use of agricultural pesticides; and (viii) 0903 Number and working time of employees on the holding by sex.

Bangladesh Bureau of Statistics (BBS). 2022. *Agricultural Sample Census 2020: Livestock Report, Volume 3.* Dhaka, Bangladesh. December 2022 (also https://bbs.portal.gov.bd/site/page/6b4c2697-452b-4bc6-9ee2-1fb5e0fc66c0/-)

Bangladesh Bureau of Statistics (BBS). 2022. *Agricultural Sample Census 2020: Fisheries Report, Volume 4.* Dhaka, Bangladesh. December 2022 (also https://bbs.portal.gov.bd/site/page/6b4c2697-452b-4bc6-9ee2-1fb5e0fc66c0/-)

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