Bangladesh - Agriculture and Rural Statistics Survey 2017

BANGLADESH BUREAU OF STATISTICS

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Overview

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Overview

ABSTRACT
Bangladesh is the most densely populated country in the world. About seventy-five percent of the population lives in rural areas. Bangladesh is an agro based country. Majority of the inhabitants are directly or indirectly involved in agricultural activities for their livelihood. There is a paramount importance of agriculture sector and rural area in Bangladesh to meet its diverse development challenges. There is a direct link between the agriculture sector and rural area. Agriculture sector is very important because most of the people of the country are living in the rural areas and have a direct link between the rural development and the development of our national economy.

Bangladesh Bureau of Statistics provide necessary information to the development planners, policy makers, researchers, administrators and other government and non-government organizations as well as individuals who are interested in doing research. Without accurate, reliable and timely statistics, it is difficult to do evidence based planning and policy making. The Agriculture and Rural Statistics Survey-2018 is conducted to collect/provide data and information related to socio-economic condition of rural households, agricultural land by tenancy, agricultural inputs, labour and instruments, agricultural credit and its utilization, marketing and value chain and gender statistics and women empowerment data, etc.

The Agriculture and Rural Statistics Survey was conducted in rural areas of the country. For this survey, each district has been treated as a domain; a total of 1920 Primary Sampling Units (PSUs) has been selected from the 64 districts of the country. For the better estimation, 30 PSUs have been selected from each district following systematic random sampling. A two stage sampling design has been followed in this survey. In the first stage, a total of 30 PSUs has been selected following systematic random sampling with probability proportion to size (PPS) method from each domain (district) on the basis of the Housing and Population Census 2011. A mouza may contain more, one or less than one PSU. A PSU consists of around 250 households. A total of 57600 households have been selected from Bangladesh.

The survey results show that out of 47019071employed people, 24392878 are engaged in agricultural sector followed by 14439231 in service and 8187493 in industrial sector. It is observed that out of 24392878 people, 8756107 are engaged in family helper, followed by 8177037 in selfemployment, 7291840 in agricultural labour and 167894 in other activities of in agricultural sector.

It is observed that overall agricultural labours work 5.02 days a week and 7.76 hours a day. It is also reported that an agricultural labour, on the average, receive Taka 386 as wages per day. Out of 2748004 households, 63.11% are farm and 36.89% are non-farm households. On the average, a household owns 0.80 acres and operates 0.82 acres of land. Out of 0.65 acres of cultivated land (temporary crops land & temporary fellow land), 0.18 acres are single crop, 0.38 acres are double crops and the rest 0.09 acres are triple or more crops land.

It is reported that out of total (rural Bangladesh) households, 18286644 have no ownership of land for female members (66.65%), 8790973 have such ownership of their female members (31.66%) and 359303 reported “not known” (1.31%).

Estimated average input cost per household used in Bangladesh is Taka 9437. Among all the inputs, on per household basis, irrigation costs the most Taka 4041 and organic fertilizer the lowest Taka 385. In Bangladesh total investment in equipment and transport vehicle is Taka 629550.11 lakh, of which Taka 364544.94 lakh correspond to investment in equipment and Taka 265005.17 lakh to transport vehicle.

Regarding agricultural marketing, out of total households, 52.59% sell their agricultural produce at home, 17.90% in village market (hat-bazar), 0.82% in other places and 28.69% households are not applicable due to not having any cultivable land. Obviously, the farm gate/house price is less than that of hat-bazar price and stored price is higher than that of harvesting time price. Out of the eleven selected crops, aus paddy has the highest harvest damage/loss (8.93%) followed by amon paddy 7.70% and chili is the lowest 5.47%. At the household level, post-harvest loss is higher than the harvest loss.

In case of agricultural credit, out of the 27480054 households surveyed, 10157553 took loan 36.96% while 17322501 did not 63.04%. 63.28% of the households took loan from nongovernment organizations (NGOs) followed by bank 26.03%, mahajan 3.67%, relative 3.75% and other sources 3.27%. Most of the loans are disbursed for the purpose of agriculture 62.15% followed by construction or repairing house 12.33%, livestock 8.54%, other activities 5.45%,

treatment 4.94%, marriage 4.11% and education 2.47%.

This survey shows that the average annual household income is Taka 202724, out of which the highest percentage of household income is generated from non-agricultural sources 61.79% the rest from agricultural sector 38.21%.

Women empowerment and gender statistics show that at the national level maximum households had given equal privilege to both sexes regarding access to children's right to education, health and nutrious food. In terms of female's nuptial decision, all household members' consent take the most priority. The survey shows that 79.42% female income earners take decision by themselves whereas 12.43% take decision consultation with their husbands (both) and 6.05% husband take decision on spouse's earnings.

KIND OF DATA

Sample survey data [ssd]

UNITS OF ANALYSIS

The main objective of the Agriculture and rural Statistics Survey-2018 is to provide the data and information related to socio-economic condition of rural households, agriculture land by tenancy, agriculture inputs, labour & instruments, agriculture credit and its utilization, marketing & value chain and gender statistics & women empowerment data etc. The specific objectives of the survey are:

i. Collect data related to socio-economic condition of rural households.

ii. Collect data on agriculture land by tenancy;

iii. Collect data on agriculture inputs covering irrigation, fertilizer, seed, pesticide and insecticide for GDP estimation;

v. Generate data on agriculture mechanization (instrument), transportation, marketing and value chain;

vi. Collect data on agriculture credit and its utilization; Explore data on agriculture labor, working hours and wage rates;

vii. Collect data on gender statistics and women empowerment.

Scope

NOTES

Bangladesh Bureau of Statistics regularly collects the data on production, yield and harvested area regarding agricultural statistics. The scope of the agricultural and rural statistics is more than the basic data that is regularly collected by BBS such as production of crops, livestock and fisheries production. For the betterment of farmers and rural people, it is needed a lot of data like organic farming, good practice in agriculture, use of natural fertilizer, age and sex of farmers, family and workforce, socioeconomic condition of farmers and rural people. In regular basis, these data are not collected by BBS or any other organization of Bangladesh. For this reason, this survey is conducted only in rural area of Bangladesh.

Producers and Sponsors

PRIMARY INVESTIGATOR(S)

Name	Affiliation

BANGLADESH BUREAU OF STATISTICS	Statistics and Informatics Division, Ministry of Planning

FUNDING

Name	Abbreviation	Role
Statistics and Informatics Division	SID	

Metadata Production

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BANGLADESH BUREAU OF STATISTICS	BBS	Statistics and Informatics Division, Ministry of Planning	Documentation of the study

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Sampling

Sampling Procedure

Sample and Survey Methodology have a great significance on quality data and results of the survey. These include survey planning, sampling frame, choosing the sampling techniques, determining the sample size, design of questionnaire, methods for collecting data, methods for checking consistency and accuracy of data, imputation and validation of data, adjustment of sampling error etc.

Sample Design

The primary objective of sample design for the agriculture and rural statistics survey was to produce statistically reliable estimates of the most indicators, at the national level and for the sixty four districts of the country. Districts of the country were defined as the sampling strata. A two-stage, stratified cluster.

Sample Size and Sample Allocation

The agriculture and rural statistics survey has been conducted in rural areas (excluding City Corporation, Paurashava and restricted area) of the country. For this survey, each district has been treated as a domain; a total of 1920 Primary Sampling Units (PSUs) has been selected from the sixtyfour districts all over the country. For the better estimation, 30 PSUs were selected from each district following the systematic random sampling. A two stage sampling design has been followed in this survey. In the first stage, a total of 30 PSUs has been selected following systematic random sampling with probability proportional to size (PPS) method from each domain (district) on the basis of Population Census 2011. A mouza may contain more, one or less than one PSU. A PSU has been consisted of around 250 households. If the selected mouza contains less than 225 households then the adjacent mouza has been added to it. If the selected mouza has more than 275 households then 250 households has been listed from either south-west corner or north east corner of a mouza. The south west corner approach has been followed if the selected mouzas carry even number and north east corner approach has been applied if the selected mouzas are odd numbers. In the 2nd stage, thirty households has been selected in the systematic random sampling from the listed household. Finally, the selected households have been interviewed by using questionnaire. Overall, the sampling design has been selfweighting within the domain. It is noted that if the selected mouza is more than two thousand households, then mouza will be divided into more areas (parts) on the basis of two hundred fifty households and one of the area will be selected randomly, this area is treated as a PSUs.

Questionnaires

Overview

A questionnaire is a powerful evaluation tool that allows the collection of data through the use of multidimensional questions. A questionnaire written without a clear goal and purpose is inevitably going to overlook important issues and waste enumerators as well as respondent’s time in asking and responding. All these matters were addressed to the extent possible for developing the questionnaire of this survey.
The Agriculture and Rural Statistics Survey 2018 questionnaire comprised of 9 sections as follows:
Section-1: Introduction
Section-2: Methodology
Section -3: General Information of the household
Section-4: The economic activities of the household members (for the members of age 15 years or more)
Section-5: Land related information of the household
Section-6: The use of agriculture tools (agriculture appliance and vehicles), generating agricultural production sell and account of wear and tear incision
Section-7: The information about the tools used in agriculture in last year (Seed, Irrigation, Fertilizer, Insecticides and pesticides)
Section-8: Agricultural loan and its use
Section-9: Annual returns of the household
Section-10: Empowerment of women (18 years or above for the Female member)
The survey questionnaire is included in Annex-I

Data Collection

Data Collection Dates

Start	End	Cycle
2012-05	2017-05	N/A

Data Collection Mode

Face-to-face [f2f]

Data Collection Notes

Face to face interview had been carried out following Paper and Pencil (PAPI) method. Data collection process involved the following steps as described below:
Data collection had taken place during April-May 2018 at the homestead of the As data collection has a noteworthy impact on the quality of survey results, it is treated as a significant part of a survey. Considering its importance, the following measures were taken during the preparation of questionnaire as a tool of data collection:
Questionnaire Design;
Questionnaire has been pre-tested;
Comprehensive manual of data collection with clearly defined concepts and definitions have been made;
Training programme for the enumerators and supervisors were conducted;
Required number of field survey staff were set up in order to ensure smooth data collection;
Extra-care was taken for the data collection activity, sufficient number of supervisors was assigned.

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Data Collectors

Name	Abbreviation	Affiliation
Statistics and Informatics Division	SID	Ministry of Planning

Supervision

A two days training had been arranged in order to make the Supervisors and Enumerators perfectly conceptualized with the concepts and definitions of each word of the questionnaire as well as to convey the proper way of data collection. Two days training programme has been conducted by the Project Director and it had been arranged at the head office of BBS in Dhaka. On the first day the participants received rigorous training on the concepts, definitions and the questionnaire and on the next day, they had gone to the rural area of Savar Upazila with a view to having hands-on exercise on the questionnaire. In the second phase, Enumerators had been trained for two days by the Master Trainers at the District Statistical Offices (DSOs) following the same sequence as the training arranged at the first phase. At first, Enumerators received training on the questionnaire and in the next day they also visited field at remote area of the respective region in order to have experience on hand. However, most of the trainees- both Supervisors and Enumerators actively participated in the training and also made some suggestions which were subsequently taken into consideration.

Data Processing

Data Editing

Data editing and coding is another vital phase of the survey, which is indispensable for data processing. It should be completed before data processing. In case of this survey coding had been done along with questionnaire development so that the enumerator could easily and accurately mark the right answers.
Data editing referred to the activity of checking and cleaning data that had already been collected from the field. A group of experienced staff from Agriculture Wing under the supervision of two officers from the same Wing had carried out the work of data editing with careful attention.

Other Processing

Data processing involved many steps that were very important because it affected survey results.
During data processing following steps had been taken.
I. Data entry
II. Appending and Merging files
III. Data validation (further computer checking, editing, and imputation)
IV. Final decision on errors
V. Completion of data processing and generation of data files
VI. Final documentations
VII. Conversion of data files to another software.
VIII. Storage of all files.
I.Data Entry:
After the completion of editing, all questionnaires had been sent to Computer Lab of Computer Wing of BBS in order to do required works of data processing. Programmer had maintained the steps as mentioned aiming to ensure perfect data processing.
(1). Software Used: Four software namely CSPro, FoxPro, SPSS and Excel had been used for processing the survey data. CSPro had been used for data entry, FoxPro for editing, CSPro for tabulation, SPSS for data analysis and Excel for printing output.
(2). Designing data entry application: Data entry template was developed by using CSPro software. The first thing to do data entry template was to create the data dictionary based on the questionnaire. The data dictionary had consisted of ID items, records, items of the records, and also values of the items. Logical check was also maintained to avoid errors of inconsistency. After finishing the data dictionary, the data entry forms had been developed depending on data dictionary. After that, the data entry form was tested and, therefore, readily available for use.
(3) Data capturing and Preliminary Validation: Just after the completion of data editing manually, data had been captured in computer. A variety of common errors were identified during data capturing. As a result, data had been checked and cross checked with questionnaire depending on error message. During data processing, the appropriate corrective measures mentioned below have been used to have clean and primarily validated data.
i) Wrong data and out of range codes: Firstly, the data collection instrument restricted the enumerator to a set of codes within the acceptable range for most of the questions. Secondly, the values had been set for avoiding wild codes for most of the questions. For example, the code for ownership of land had been set 1 to 5.
ii) Inconsistency checking: It had been done during the designing of the data entry program to avoid errors, omissions and inconsistencies.
iii) Treatment of Missing values: The data entry program had been designed not to allow blanks that ensure not having missing values in the data.
iv) Incomplete records and dropped cases: The data entry program had designed to accept the complete data case; otherwise, it would not be saved. This had been set to avoid incomplete records and dropped cases.
v) Duplication of entries: The data entry program had been designed in view of rejecting duplication of entries based on the identifiers.
(4) Appending and Merging files: As data was captured by a number of BBS Officials, a number of files were generated. After the completion of data entry, files had properly been appended and merged in order to bring all data in a single file.
(5) Data Validation: Validation had been accomplished after appending and merging files by checking the number of variables, the cases, wild codes, missing values and consistencies. It had been made sure that the number of variables generated matched with the number of variables in the data set
(6) Final decision on errors: If there had been found any error during data validation, it was checked and rechecked; and sometimes it had been sent back to the survey authority to decide how it would be treated.
(7) Completion of data processing and generation of data file:

Addressing the final decision on error, data processing task had been completed and generated a data file which contained micro data.

(8) Data preservation:

After the completion of processing, data had been stored in ASCII format. The data had also been converted to Microsoft Excel format in order to have the print out. Both original and new format had been preserved. The questionnaires had also been filed for safe storage. A copy of the data set had been put forward to the survey authority for tabulation and analysis.

Data Appraisal

Other forms of Data Appraisal

Tabulation:
A tabulation plan was designed by the survey team, which was shared with the working committee for their opinion. The working committee suggested some modifications which were subsequently incorporated. A total of 98 tables focusing on the vital components such as socioeconomic condition of rural households, Distribution of gender wise ownership of land, Quantity of Agricultural inputs (irrigation, fertilizer, seed, pesticide and insecticide), Number of agriculture labour, working hours and wage rate by male and female, Number of agriculture credit holder & quantity by institution and its utilization, Number & value of agriculture mechanization (instrument) transport by category, Type of marketing and value chain by production and Gender statistics and women empowerment (Education, Health, income, occupation decision making / opinion) had been generated. All these tables had been given in the part of analysis and annexure.
Data Analysis:
Survey results had been analyzed in tabular form using STATA and SPSS Software. Major variable was explained vertically (columns) and cross tabulation by another related variable(s) horizontally. In the analysis, it had described the variation of the magnitude of the major variables by national.
Data Dissemination:
The final report had been disseminated both in electronic form such as CD and hard copy as book. Results are available in the website of BBS. Some data may also be published in other publications of BBS such as Statistical Year book of Bangladesh, Yearbook of Agriculture Statistics of Bangladesh, and Monthly Statistical Bulletin etc.