

Costs of Agricultural Production Statistics, Communication and Advocacy for Statistics

A country presentation of Bangladesh

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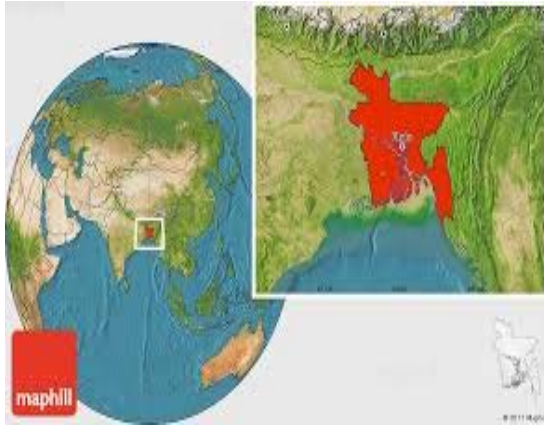
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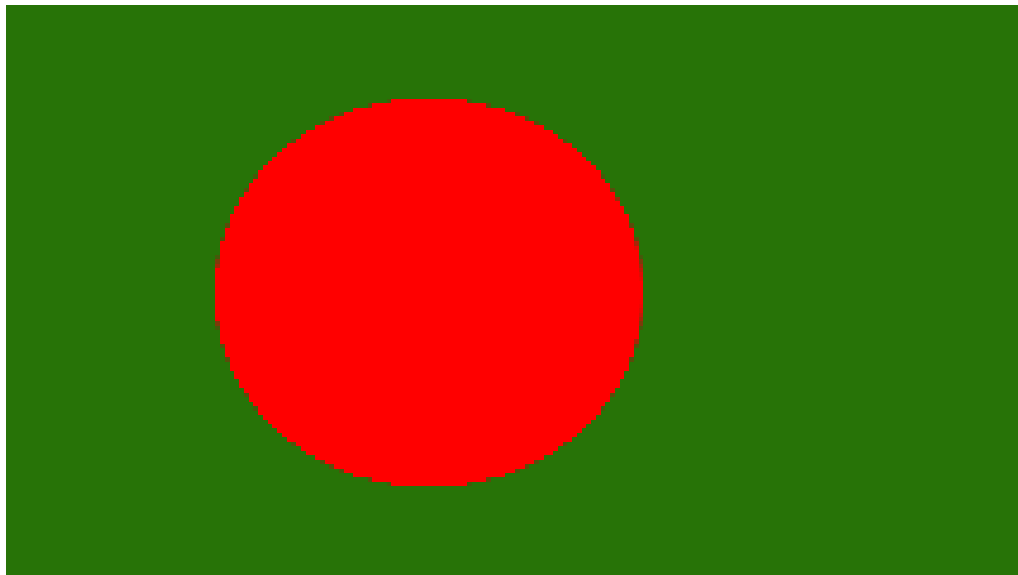
Introductory Part





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National Flag of Bangladesh



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Background

- Bangladesh emerged as independent and sovereign country in 1971
- The parliamentary form of government is in force in the country
- The total area of the country is 1,47,570 sq. km.
- The total population of the country is more than 160 million.
- Life Expectancy at birth 71.4
- Current GDP 7.05 % (P)
- Mean age at first marriage 25.2
- Total Fertility Rate (TFR) 2.11
- Growth Rate of Population 1.37

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National Statistical System

Ministry of Planning

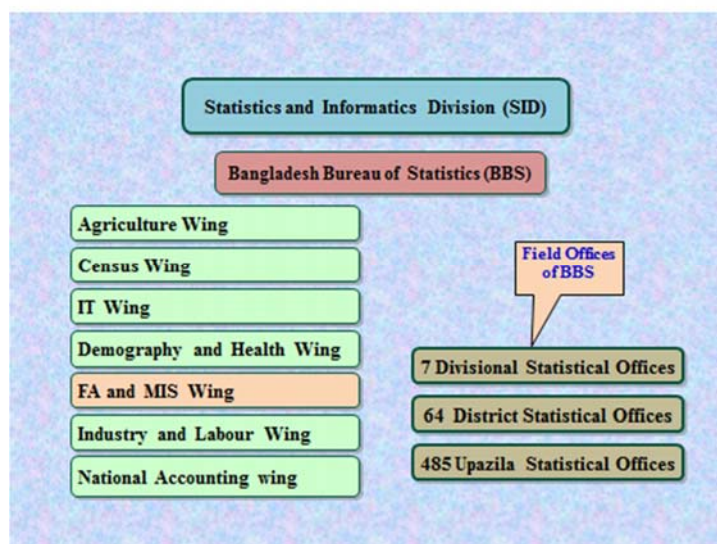
- Planning Division
- Statistics and Informatics Division (SID)
- Implementation, Monitoring and Evaluation Division (IMED)

The statistical system is centralized in Bangladesh

- ❖ Bangladesh Bureau of Statistics (BBS) established in 1974
- ❖ BBS is working under SID of Ministry of Planning

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National Statistical System



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Key Agricultural Statistics in Bangladesh

- ▶ Bangladesh is basically an agrarian country
- ▶ Total farm holding: 15.18 million
- ▶ Net cultivated area: 77.28 million hectares
- ▶ Temporary crops net area: 71.51 million hectares
- ▶ Intensity of cropping: 173%
- ▶ Annual Production of food (Rice+wheat): 36.06 million metric ton (2014–15)
- ▶ Production of many other Crops, Fish, Livestock and poultry are also important.
- ▶ 47% labour force is engaged in agriculture sector
- ▶ Contribution of agriculture sector to GDP is around 17%.

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Important Agriculture Statistics generated by BBS

- ▶ Cropped area (Gross and Net)
- ▶ Total Farm household
- ▶ Population of main livestock
- ▶ Annual crop production statistics
- ▶ Intensity of Cropping
- ▶ Price statistics of agriculture products
- ▶ Land use statistics
- ▶ Agriculture labor wage statistics
- ▶ Input costs statistics
- ▶ **Cost of production statistics**
- ▶ Water and Environment statistics related to agriculture

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Area and Production of five major crops

Year (Production inM.M.Ton)	Aus	Aman	Boro	Total Rice	Wheat	Potato
2011-12	23.32	127.98	187.59	338.89	9.95	82.05
2012-13	21.58	128.97	187.78	338.33	12.55	86.03
2013-14	23.26	130.23	190.07	343.56	13.02	89.50
2014-15	23.28	131.90	191.92	347.10	13.47	92.54
2015-2016	22.88	134.83	189.37	347.08	13.48	94.74

Year (Area in M.Hectare)	Aus	Aman	Boro	Total Rice	Wheat	Potato
2011-12	11.38	55.80	48.10	115.28	3.58	4.30
2012-13	10.53	56.10	47.60	114.23	4.17	4.44
2013-14	10.51	55.30	47.90	113.71	4.30	4.62
2014-15	10.45	55.31	48.40	114.16	4.36	4.71
2015-2016	10.17	55.90	47.72	113.79	4.44	4.75

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Contribution of Agriculture Sector to Bangladesh Economy (Base:2005-06)

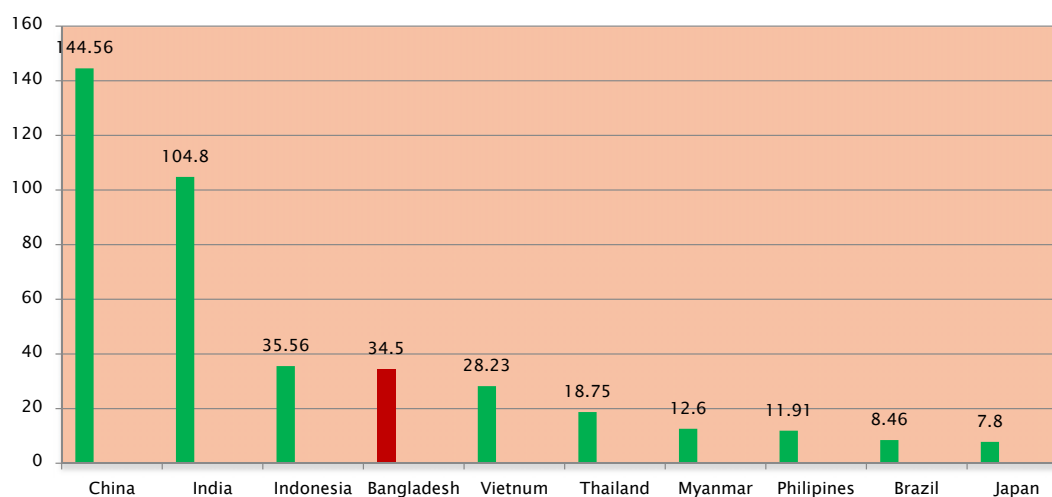
GDP at constant price (share in %)	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-06
Agriculture	18.38	18.01	17.38	16.78	16.50	16.00	15.35
Industry	26.78	27.38	28.08	29.00	29.55	30.42	31.54
Service	54.84	54.61	54.54	54.22	53.95	53.58	53.12

GDP at constant price (Growth, %)	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Agriculture	6.15	4.46	3.01	2.46	4.37	3.33	2.79
Industry	7.03	9.02	9.44	9.64	8.16	9.67	11.09
Service	5.53	6.22	6.58	5.51	5.62	5.80	6.25

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Top ten rice Producing countries

Yearly production of rice In Million metric ton

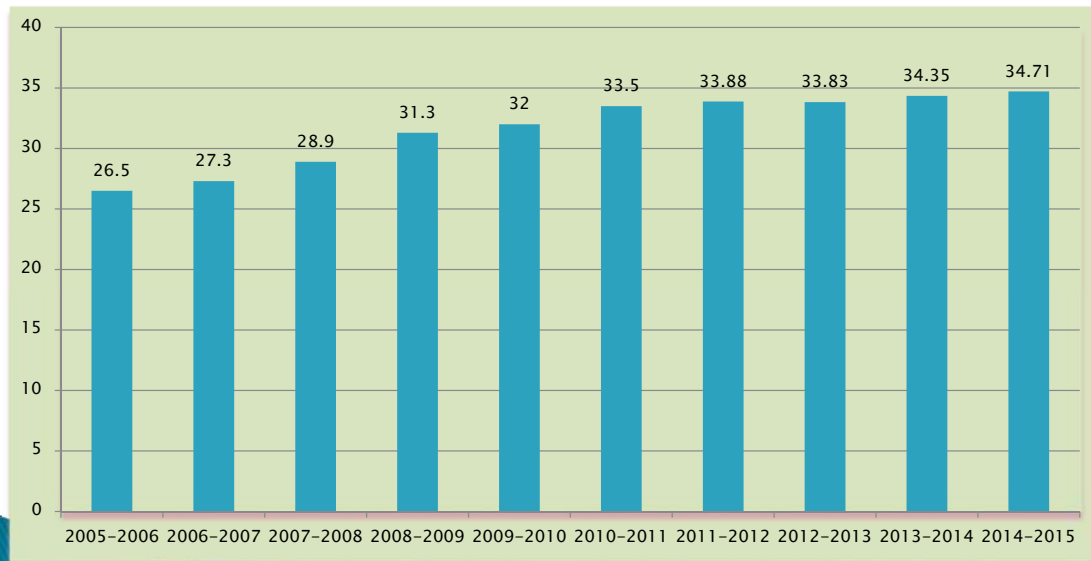


Source: Outlook, Economic Research Service. Updated 18 February 2016.

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Trend of rice production in Bangladesh from 2005 to 2015

Yearly total rice production in million metric ton



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Cost of production Statistics in Bangladesh

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Background Of Cost of Production

- ▶ Bangladesh is an agricultural country and most of the inhabitants are involved in agriculture directly or indirectly for their livelihood.
- ▶ Production of crops, cost of production and market price of crops are interrelated. Government has to give proper attention to these three factors so that the farmers get fair price of the crop produced during the harvest time.
- ▶ BBS annually conducts the cost of production survey of 6 major crops (Aus, Aman, Boro, Wheat, Potato and Jute). But we had no cost of production survey for minor crops before 2009.

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- ▶ If procurement price is lower than the production cost, producers get looser and become discouraged to produce more crops and if procurement price is higher than the production cost, producers get profit and are inspired. Which influence the cultivation of next year's crop as well as food security.
- ▶ The government of Bangladesh highly concerned about cost of production of Important crops.

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Cost of Production Survey of Some selected crops at a glance (2009–2015)

Name of project	No. of crops	Name of crops	Survey year
UCPSCP (Updating and Extension of Agriculture Cluster Plots and Survey of Cost of production Project)	10	Aus, Aman, Boro, Potato, Jute, Wheat, Maize, Onion, Oil seeds & Pulses	2009–10
Cost of Production Survey of Some selected crops 2011–12	04	Papaya, Brinjal Tomato, water melon	2011–12
PASDAC (Productivity Assessment Survey of Different Agricultural Crops)	09	Banana, Chilly pumpkin, Maize Turmeric , Onion, Cauliflower Pineapple, Zinger	2013–15

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Why Cost of Production Survey

- ▶ Determination of Govt. Policy
- ▶ Determination of Procurement Plan
- ▶ Which crops need to be subsidized
- ▶ Import and Export Policy
- ▶ Food security
- ▶ Diversification of cropping pattern
- ▶ Stay with global initiatives
- ▶ To save agriculture, to save marginal farmer

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Why Cost of Production Survey(Con't)

- ▶ GDP Calculation
- ▶ Planners and researchers
- ▶ Market stability
- ▶ Setting priority and target for cultivation of specific crop
- ▶ Agriculture related National and International Organizations, Other Stakeholders
- ▶ To ensure the farmers to get fair price



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Objectives of Cost of Production Survey

- ▶ Per acre production cost
- ▶ Per acre yield rate
- ▶ Per acre production value and
- ▶ The total area under cultivation



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Sampling Methodology for (Cauliflower, Onion, Pumpkin Pineapple)

- ▶ Considering the nature of rarity and cluster pattern, sample design may vary from crops to crop.
- ▶ A two stage sampling was adapted for Cost of Production Survey 2014 for Cauliflower, Onion, Pumpkin, Pineapple .
- ▶ For the cauliflower survey the whole country has been divided into two strata on the basis of production. First stratum consists of three division and the reaming division where treated as the second stratum in both stratum a single stage cluster sampling method has been used to conduct this survey, in the first stage 170 PSUs where selected from the whole country. In the second stage all the households where listed with some basis criteria from the selected PSUs and then 30 household were selected following the systematic random sampling.



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Sampling Methodology for (Cauliflower, Onion, Pumpkin, Pineapple)

- ▶ For the case of onion, 64 districts are divided into two stratum based on onion production. Using two stage cluster sampling in the first state PSUs has been selected in the whole country using the SRS. In the second stage all the onion producing household were listed from the selected PSUs and then 30 household are selected following the SRS, Where a Mauza were treated as the primary sampling unite (PSUs)
- ▶ For estimating costs of production of pineapple and pumpkin two stage cluster sampling method has been used.



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Sampling Methodology for Maize

- ▶ A two stage stratified cluster sampling method has been used to conduct the survey.
- ▶ We have 64 district, for better estimate 64 district are divided into three stratum based on the area under maize cultivation in Ag Census 2008.
- ▶ In Stratum 1, the district are considered having more than 30000 acres of land, in stratum 2 districts considered having above 10000 but less than 30000 acres of land. And in stratum three less than 10000 acres of land

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Sampling Methodology for Maize

- ▶ From the first stratum 80 mauzas, second stratum 100 mouzas and third stratum 60 mauzas has been selected according to probability proportional to size (PPS).
- ▶ In second stage all the maize cultivated households were listed and then 30 HH were selected following SRS (Systematic Random Sampling).
- ▶ If a selected mauza have less than 25 maize farmer the remaining HH were taken from adjacent mauza maintaining same procedure.

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About Questionnaire

- ▶ There are two parts of the questionnaire.
- ▶ 1. First part having Identification of the sample HH with framers name and mobile number related information.
- ▶ 2. 2nd part having the following tables
- ▶ 2.1 Area under Maize crops, Land ownership, variety and land preparation cost
- ▶ 2.2 quantity and cost of seed, seed plantation and weeding
- ▶ 2.3 Use of fertilizer (Quantity and cost)

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About Questionnaire

- ▶ 2.4 Irrigation and irrigation related cost, use of insecticide & pesticides and Harmon cost
- ▶ 2.5 loan related information for maize cultivation
- ▶ 2.6 Harvesting, threshing and transportation cost
- ▶ 2.7 cattle feed (Maize tree), cost of production and quantity of main and by products
- ▶ Land leasing cost related information
- ▶ Mention three problems for maize cultivation

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Per acre cost of production for Maize

Ingredients	stratum							
	All Area		Stratum 1		Stratum 2		Stratum 3	
	Cost (Tk)	%	Cost (Tk)	%	Cost (Tk)	%	Cost (Tk)	%
Total	23805	100.0	24625	100.0	22352	100.0	23480	100.0
Land Pre	2538	10.66	3250	13.20	1495	6.69	1554	6.62
Seed	1963	8.25	1972	8.01	1993	8.92	1809	7.70
plantation	2650	6.93	1603	6.51	1650	7.38	1933	8.23
Weeding	2851	11.98	2663	10.87	2968	13.28	3621	15.42
Irrigation	3435	14.43	3621	17.70	3241	14.50	2928	12.47
Pesticides	516	2.17	532	2.16	490	2.19	497	2.12
Fertilizer	5162	21.68	5480	22.25	4757	21.28	4522	19.26
Harvesting	4783	20.09	4532	18.40	4906	21.95	5916	25.20
Transport	606	2.55	637	2.59	589	2.64	464	1.98
others	303	1.27	335	1.36	262	1.17	236	1.01 ⁹

Challenges

- ▶ Some farmers have bad intension to provide high cost
- ▶ Idea of cost involvement at different phases (Land preparation, seeds, weeding, insecticides, fertilizers, harvesting, transportation, leasing of land etc,)
- ▶ Availability of the farmer
- ▶ Damage of crop



Communication, Advocacy and Dissemination of Agricultural and Rural Statistics

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Process of Communication, Advocacy and Dissemination

- ▶ Conducting Census, survey, reserch activities etc. by Bangladesh Bureau of statistics and other Govt. and non Govt. Organization
- ▶ Stakeholder's meeting/Seminar/workshop etc.
- ▶ Using Elcetronic and print Media.
- ▶ Focus group discussion (FGD)
- ▶ Rapid Rural Appraisal (RRA)
- ▶ Participatory rural Appraisal (PRA)

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Dessimation Process & Practices

- ▶ Publications
(books, reports, booklets, leaflets, newsletter etc)
- ▶ Website (www.bbs.gov.bd).
- ▶ Discuss in Divisional , District and Upazila Coordination Meeting with all departments and local elected public representatives
- ▶ Press Releases.
- ▶ Seminar/Workshop/Publication ceremony etc.
- ▶ Broadcasting (Radio/TV) etc.
- ▶ Using Print and Electronic Media
- ▶ Exchange official letter.
- ▶ National and Regional fair. Etc.

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How to over come the challenges

- ▶ Intensive training of the enumerator
- ▶ Selection of Skilled enumerator
- ▶ More Pre test of the questionnaire is needed
- ▶ The enumerator should motivate the farmer for actual information
- ▶ Storing and insurance facility for crop should be introduce
- ▶ Strong monitoring

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Existing Data Generating System

Activities	Data Generated through	Periodicity	Source
Agriculture Census	Full Count	Decennial	BBS
Crop Production Statistics	Survey	Annual	BBS
Fisheries Statistics	Administrative data	Annual	Dept. of Fisheries
Livestock and Poultry	Extrapolated	Annual	BBS
Forestry	Extrapolated	Irregular	Dept. of Forestry and BBS

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Use of As in policy making

- ▶ Government is the main user of As.
- ▶ Import and Export Policy.
- ▶ Setting priority and target for cultivation of specific crop.
- ▶ Local level planning
- ▶ Market stability
- ▶ Research purpose (high yield variety of rice)
- ▶ To indentify the specific crop which needs to be subsidized
- ▶ Diversification of cropping pattern

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Problems in Communication, Advocacy and Dissemination on ARS

- ▶ Reports published only in English language
- ▶ Limited print copy
- ▶ Limited budget allocation
- ▶ Time lag among data collection, report publication and data dissemination
- ▶ Low Coordination with other ministries/ departments /institutions related to agriculture
- ▶ Some reports are not so user friendly
- ▶ Web site are not so user friendly

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Problems in Communication, Advocacy and Dissemination on ARS (Cont.)

- ▶ Low participation of Electronic and Print Media
- ▶ Lack of specific dissemination policy
- ▶ Lack of skilled personnel
- ▶ Lack of Statistical Training and Research Institute
- ▶ Inadequate human resources
- ▶ Inadequate knowledge of IT
- ▶ Low Literacy Rate
- ▶ Marginal and small farming
- ▶ Weak Infrastructure in field level

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Steps should be taken

- ▶ Reports should be published in national/local language
- ▶ Number of printed copy should be increased
- ▶ Specific Budget allocation for communication, Advocacy & Dissemination purpose must be increased
- ▶ Time lag among data collection, report publication and data dissemination must be shortened
- ▶ Coordination with other ministries/ departments /institutions related to agriculture should be increased
- ▶ Reports should be more user friendly
- ▶ Web site design should be more user friendly
- ▶ Steps should be taken to increase participation of Electronic and Print Media in data dissemination

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Steps should be taken

- ▶ More home and abroad training should be arranged for BBS personnel
- ▶ Establishment of a separate Statistical Training Institute
- ▶ Infrastructure Development in field level is needed
- ▶ Literacy rate gradually increases (in 2011 it was 51.8% now it is around 60%), always education sector has given highest priority in allocation of national budget. It is on going process
- ▶ Proper Coordination among related departments has to be strengthened.
- ▶ To establish partnership with media.
- ▶ Specific dissemination policy should be included in each census or survey project proposal.

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Global Framework for Agricultural Satisfices

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Global Framework of Agriculture Statistics

Global Strategy to Improve Agriculture and Rural Statistics: Formulated by World Bank and FAO under the guidelines of UNSD which was endorsed by UNSC(41st session 2010).

Three Pillars:

- I. Enhancing capacities of the countries to produce a minimum set of core agricultural and rural statistics with desired quality and timeliness;
- II. Supporting integration of agriculture statistics into national statistical system; and
- III. Stability of Agricultural Statistics by Governance and statistical capacity building

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Development of Statistics in accordance with Global Initiatives

- ▶ Agriculture Statistics has been integrated to National Statistical System since 1974
- ▶ NSDS has been approved by the Cabinet where proper focus is given in the areas of agriculture statistics
- ▶ Statistics Act 2013 has enabled BBS to conduct Agriculture Census for broader sector like crop, livestock, fisheries and forestry
- ▶ Conducting In-depth Capacity Assessment (IdCA) on Agriculture and Rural Statistics by BBS & FAO
- ▶ Preparation of Strategic Plan for Agricultural and Rural Statistics -SPARS in 2016 (FAO support)

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Development of Statistics in accordance with Global Initiatives (Cont.)

- ▶ Application of remote sensing technology in producing Agricultural Statistics (Area for two major rice)
- ▶ Implementation of Agriculture Market Information (AMIS) Project to improve existing production estimation methodology.
- ▶ BBS arranged an International seminar on 25th and 26th may 2016 regarding AMIS, with support of FAO.
- ▶ Preparation of Food Balance Sheet (FBS) by BBS with support of FAO
- ▶ Compilation of Cost of Production Statistics of Important Crops

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Development of Statistics in Accordance with Global Initiatives (Cont.)

- ▶ Implementation of the Harmonization and Dissemination of Unified Agricultural Production Statistics project.

(New methodology has been given and implemented for yield estimation of rice)

	BBS	DAE	Harmonized at
Size of cutting area	100 sq. ft	215.278 sq. ft	215.278 sq. ft
Shape of cutting area	Circular	Rectangular	Circular

FAO is actively playing a vital role for improving Agriculture Statistics in Bangladesh

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Present Situation

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IdCA activities in Bangladesh

- ▶ Assessment of existing infrastructure to produce agriculture statistics
- ▶ Determination of minimum set of core data item
- ▶ Evaluation of existing system of AS
- ▶ Find out critical constraints in AS system
- ▶ **SWOT** (Strengths, Weaknesses, Opportunities and Threats) Analysis
- ▶ Alignment of 7th FYP,SDGs and NSDS
- ▶ Address special issues

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Strategic Plan for Statistics

National Strategy for the Development of Statistics (NSDS)

NSDS was approved in the Cabinet on 28
October 2013

NSDS is a long term strategic plan (2013–2023)
prepared for the development of statistical
system of the country including agriculture
statistics

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Goals related to Agriculture Statistics in NSDS

Sl. number	Strategic Goals
Goal-1	Reviewing and Improving the Existing Methodology
Goal-2	Developing Crop Statistics using ICT
Goal-3	Compilation of Cost of Production Statistics of Important Crops
Goal-4	Improving different types of Important rural Agriculture Statistics
Goal-5	Compilation of Food Balance Sheet
Goal-6	Improvement of Non-crop Statistics

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Implementation Status of NSDS for Agriculture Statistics

- ▶ The first goal related to agriculture statistics will be fulfilled by AMIS project—improving current estimation methodology, improvement of forecasting system;
- ▶ Goal 4 has been already achieved through preparing Food Balance Sheet;
- ▶ A survey proposal has been submitted to provide more agricultural and rural statistics
- ▶ Non-crop statistics (Fisheries and livestock) will be developed after 2018 Agri. Census.

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Coordination with other Ministries regarding Agriculture Statistics

- ▶ An inter-ministerial committee on crop production statistics is working
- ▶ Crop cutting assessment of rice are done jointly by field officials of Bangladesh Bureau of Statistics (BBS) and Department of Agriculture Extension (DAE)
- ▶ Satellite imageries provided by SPARRSO (Space Research and Remote Sensing Organization) are used for area of Aman and Boro rice

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Conclusion

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- ▶ ARS plays a vital role to formulate Government policy in achieving food security, reducing poverty, enhancing social safety net and to monitor the implementation status of the policy. Steps should be taken for effective and realistic strategy on communication and advocacy for ARS to fulfill the gaps between data producer and stakeholder or user for proper use of ARS for sustainable development .
- ▶ In spite of all the limitations Bangladesh Bureau of Statistics is working hard to provide Relevant, Accurate and timely data to the stakeholder in proper coordination with other line ministries/departments with the help of other National and International Organizations.

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Thank You

