Waste Statistics of Bangladesh

Strengthening Environment, Climate Change
and Disaster Statistics (ECDS) Project
Bangladesh Bureau of Statistics
Statistics and Informatics Division
Ministry of Planning
Government of the People's Republic of Bangladesh

Tenth Meeting of the Expert Group on Environment Statistics

(Virtual)

New York, 3, 4, 6 and 10 October 2023

Bangladesh Team

Statistics and Informatics Division (SID) &
Bangladesh Bureau of Statistics (BBS)
Ministry of Planning

Outlines

- Obligations
- Background
- Production of Waste Statistics in Bangladesh
- Glimpses of the Waste Statistics
- Generated SDGs Indicators
- Challenge and Lessons Learned
- Way Forward
- Background Documents

Obligations

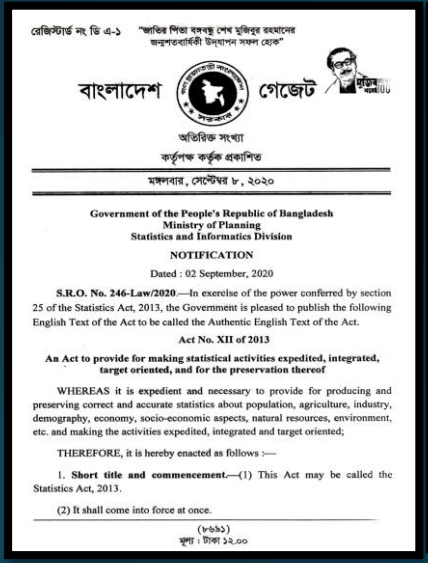
Bangladesh Constitution

Constitutional Obligation: Fundamental Principles of State Policy

18A : The State shall endeavour to protect and improve the environment and to preserve and safeguard the natural resources, bio-diversity, wetlands, forests and wild life for the present and future citizens.

19 : Equality of Opportunity

Legal Obligation


রেজিস্টার্ড নং ডি এ-১

বাংলাদেশ গেজেট

অতিরিক্ত সংখ্যা

কর্তৃপক্ষ কর্তৃক প্রকাশিত

মঙ্গলবার, সেপ্টেম্বর ৮, ২০২০

Government of the People's Republic of Bangladesh
Ministry of Planning
Statistics and Informatics Division

NOTIFICATION

Dated : 02 September, 2020

S.R.O. No. 246-Law/2020.—In exercise of the power conferred by section 25 of the Statistics Act, 2013, the Government is pleased to publish the following English Text of the Act to be called the Authentic English Text of the Act.

Act No. XII of 2013

An Act to provide for making statistical activities expedited, integrated, target oriented, and for the preservation thereof

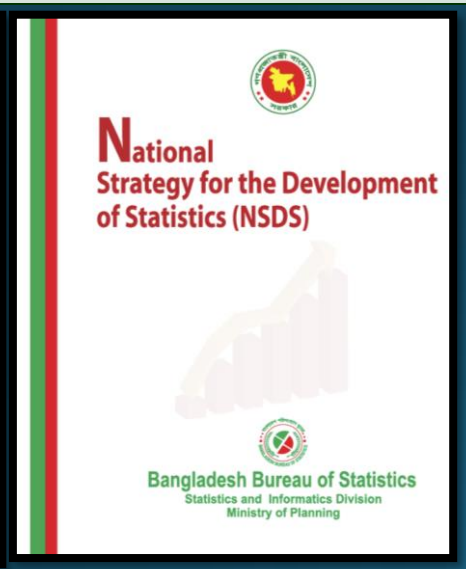
WHEREAS it is expedient and necessary to provide for producing and preserving correct and accurate statistics about population, agriculture, industry, demography, economy, socio-economic aspects, natural resources, environment, etc. and making the activities expedited, integrated and target oriented;

THEREFORE, it is hereby enacted as follows :—

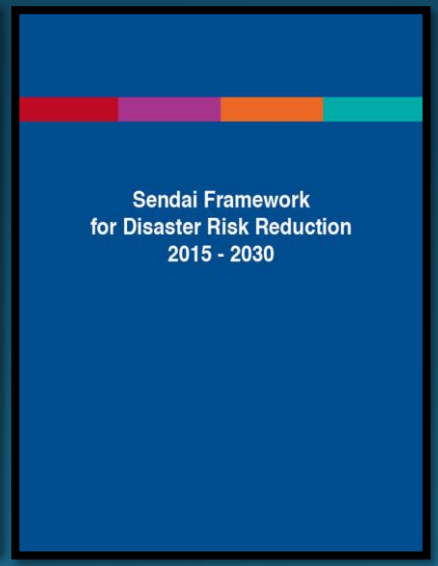
1. **Short title and commencement.**—(1) This Act may be called the Statistics Act, 2013.

(2) It shall come into force at once.

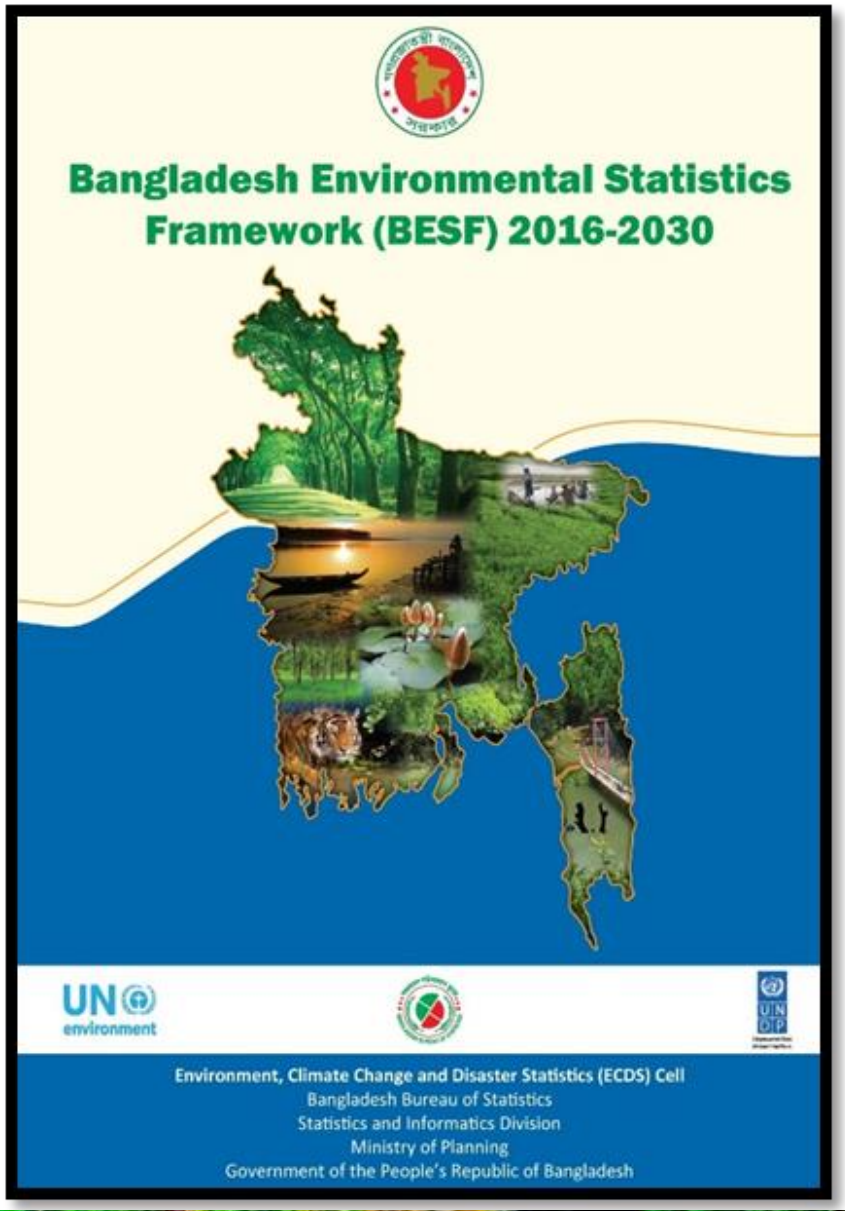
(৮৬৯১)
মূল্য : টাকা ১২.০০



International Commitment

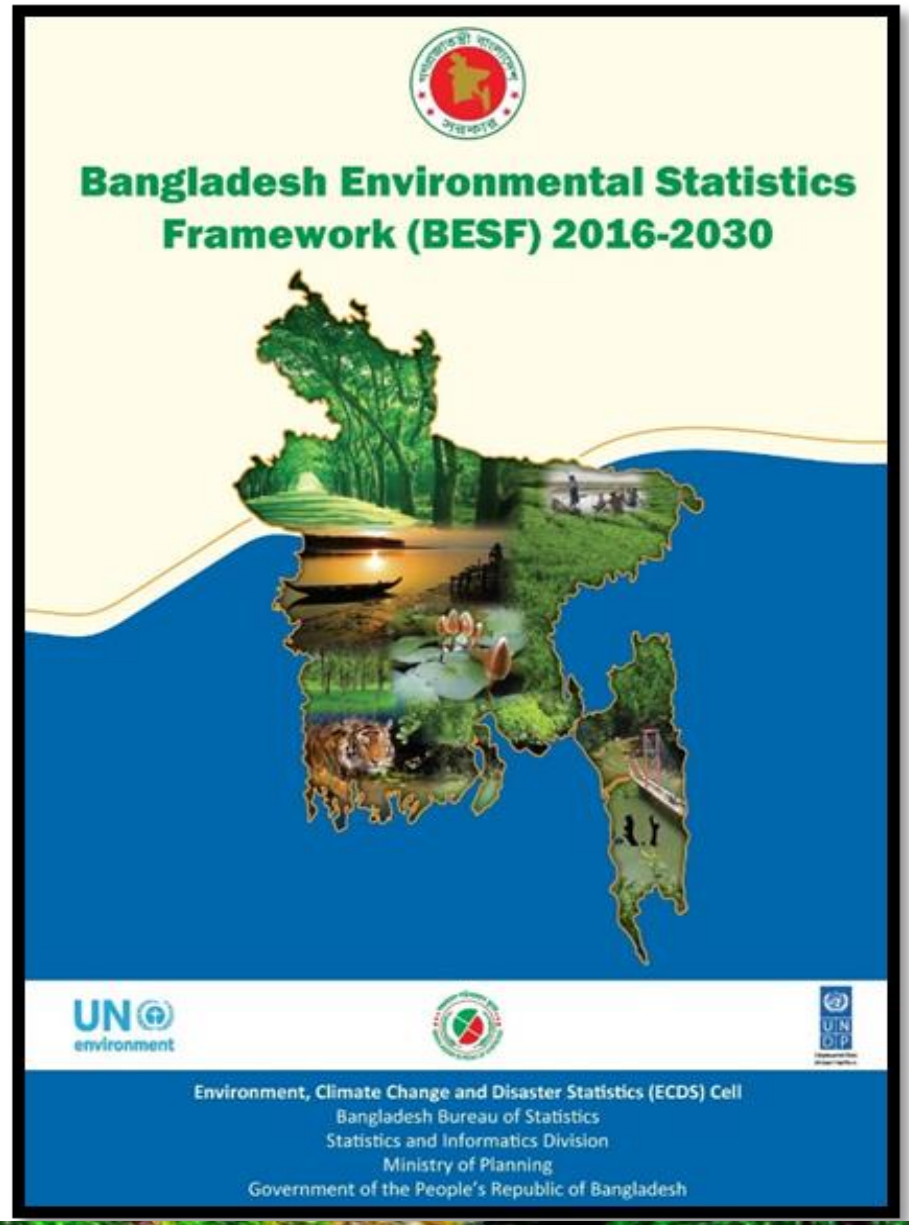


Background

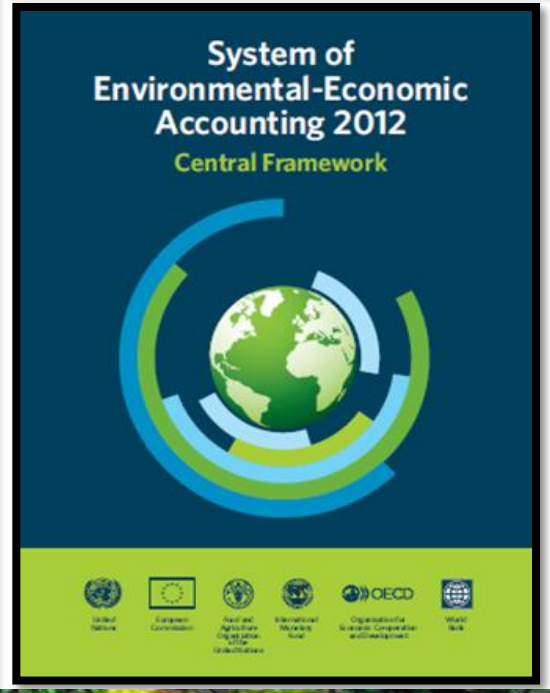


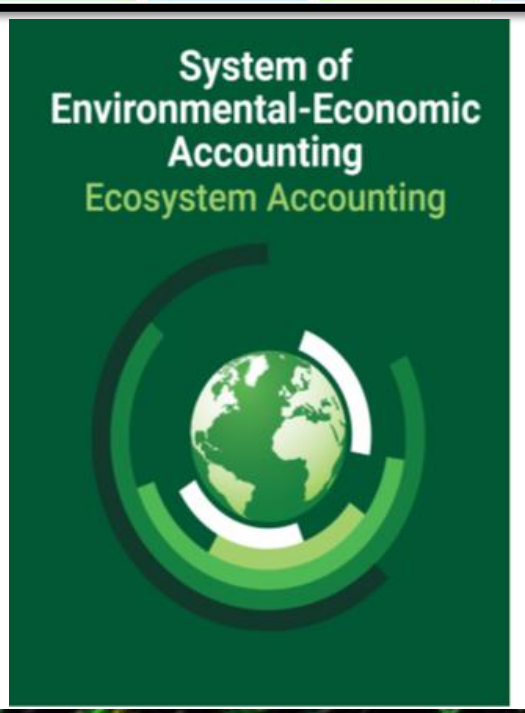
SL	Description of Strategic Plan
01	Compendium of Bangladesh Environmental Statistics (Every two/three years reference period)
02	Compilation of Resource Accounts (Land & Soil, Water, Ocean, Forest, Agriculture, Energy, Natural Gas, Eco-system Accounts) under the SEEA Central Framework
03	Bangladesh Disaster-related Statistics : Climate Change and Natural Disaster Perspectives
04	Compilation of Social Accounting Matrix (SAM)
05	Poverty-Environmental Accounts (PEA) in light of SEEA
06	Experimental Ecosystem Accounts (EEA) in light of SEEA CF
07	Household Survey of Health and Sanitation in disaster prone areas
08	Urban/Rural(Household and Industrial) Waste and Water Management Survey
09	Environmental Protection and Resource Management expenditure Accounts
10	Disaster Risk Reduction (Mitigation and Adaptation) Expenditure Account
11	Climate Change and Natural Disaster Impacts Vulnerability Index
12	Pre-crisis (Natural Disaster period) data gathering tools as a baseline information
13	Climate and Natural disaster induced Migration Statistics in Bangladesh
14	Urban/Rural (Household, Industrial and Institutional) Water Generation, Use and Management Survey
15	Developing a web based data sharing and reporting and ensuring access for stakeholders

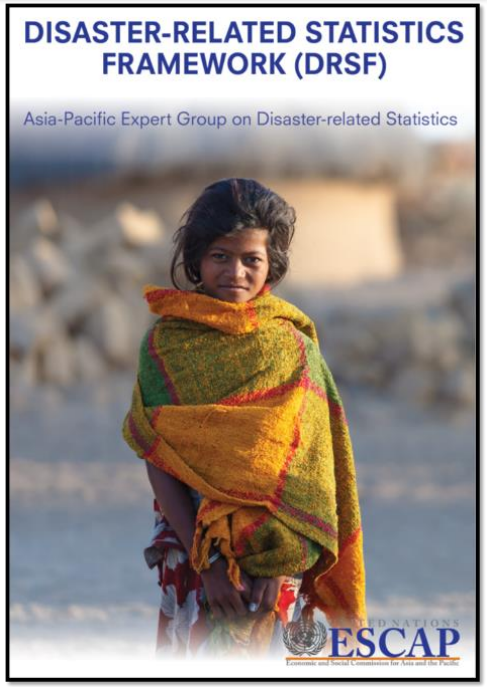
Background..



About **half of the SDGs** are directly environmental in focus or address the sustainability of natural resources", and"...**over 86 targets and 93 indicators** concern environmental sustainability, including **at least one target in each of the 17 Goals**".







Environmental Statistics in Bangladesh

The main goal of the ECDS Project is to generate environment, natural resources, bio-diversity, climate change and disaster risk statistics for institutionalization of environmental statistics in Bangladesh

SPECIFIC OBJECTIVES:

1) To conduct the **climate change and natural disaster-related survey** to monitor the impacts of climate change and disastrous events;
2) To collect, compile and update data and information from secondary sources of the "**Compilation of Bangladesh Environmental Statistic** in regular basis;
3) **To conduct Environmental Protection Expenditure, Resource Management, Waste Management and Research & Development (R&D) Survey;**
4) **To develop Geospatial based BD. Environmental Web application** in integration with demographic, socio-economic and environmental statistics;
5) **To develop the Physical Flow Natural Resource Accounts** e.g., Land, Forest & Eco-system and Water align with UN System of Environmental-Economic Accounting (SEEA)" and BESF 2016-2030;
6) **To compile of the Material Foot Print** and Domestic Material Consumption Accounts;
7) To develop **the digital environmental information system** to assist in planning, implementation, evaluation and monitoring for international reporting (including VNR, Sustainable Development Goals (SDG), 8th Five Year Plan, Perspective Plan etc. and
8) To provide training for **inter-ministerial/inter-agency officials to develop their skills** in environmental statistics formulation, analysis and report writing.

Waste Management Statistics of Bangladesh

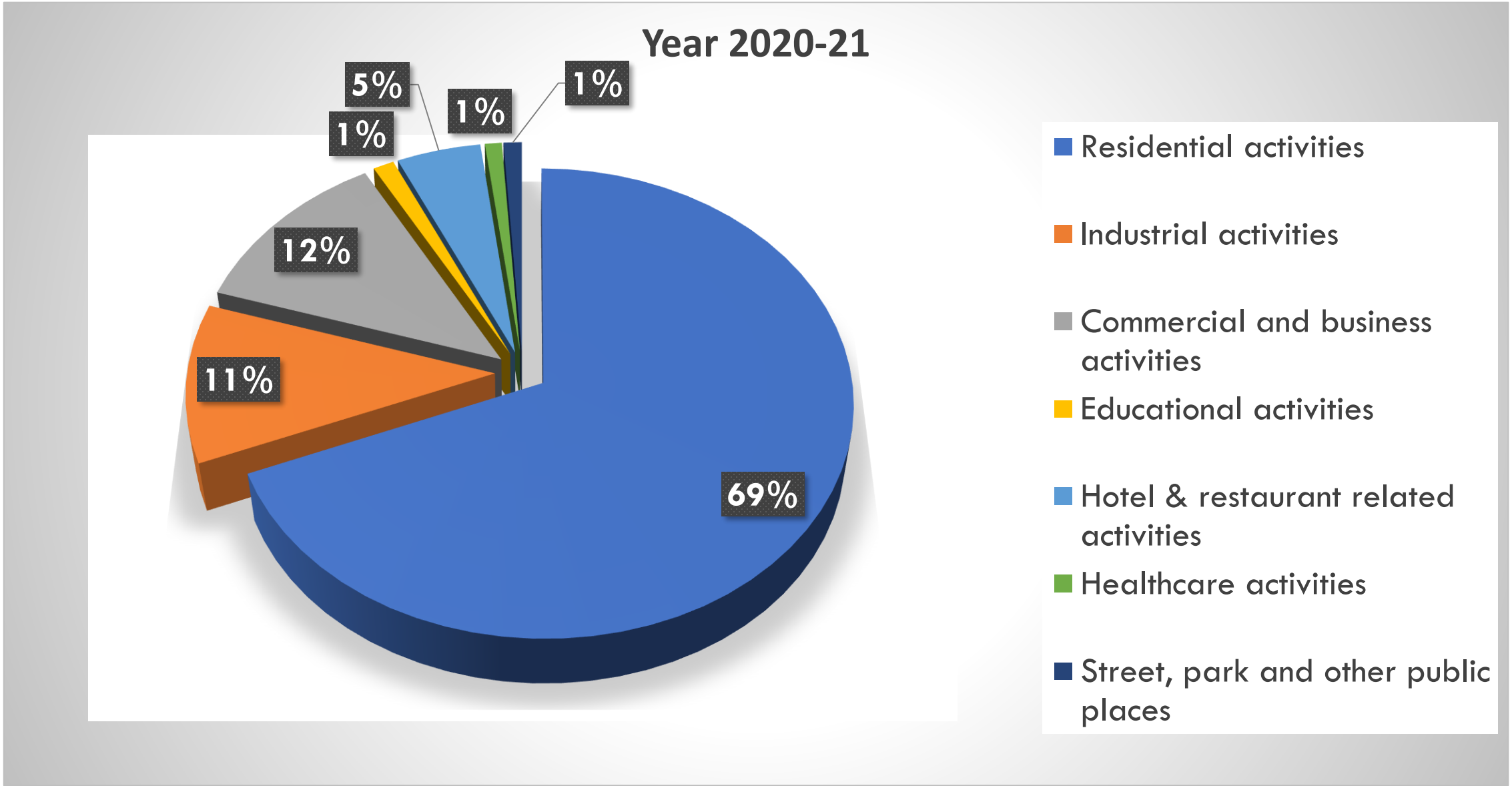
Generation of Municipal Solid Waste and Per Capita Per Day

Description	Measurement unit	Year		
		2018-19	2019-20	2020-21
Generation of Municipal Solid waste				
Total solid waste	**Million Metric ton**	**8.00**	**7.20**	**7.41**
Hazardous waste	Million Metric ton	0.47	0.44	0.50
	Percentage	5.85	6.12	6.71
e-Waste	Million Metric ton	0.170	0.163	0.170
	Percentage	2.11	2.27	2.29
Waste generation per capita per day				
Solid waste	**Kilogram**	**0.580**	**0.500**	**0.500**
Hazardous waste	Kilogram	0.034	0.031	0.034
	Percentage	5.86	6.20	6.80
e-Waste	Kilogram	0.012	0.011	0.011
	Percentage	2.07	2.20	2.22

Solid Waste Collected by component 2020-21

Component of waste	Solid waste collected (In Metric ton)	Percentage
Total	**5873001**	**100.00**
Food waste	1142788	19.46
Agriculture, Gardens, Forests etc.	257301	4.38
Textile	584323	9.95
Paper/ plywood / hardboard	1110908	18.92
Leather and leather related product	151354	2.58
Other organic waste	199319	3.39
Plastic	975841	16.62
Glass	306245	5.21
Rubber (synthetic)	406352	6.92
Metal and metal related product	541824	9.23
Other inorganic waste	196746	3.35

Percentage of Solid Waste Collected by Sources



Calculated SDGs Indicators

Description	Measurement unit	Year		
		2018-19	2019-20	2020-21
Indicator 12.4.2 (a): Hazardous waste generated per capita; (b) proportion of hazardous waste treated				
Hazardous waste generated in Bangladesh	Million ton	4.57	4.31	4.59
Industrial hazardous waste	Million ton	3.23	3.01	3.23
Municipal hazardous waste	Million ton	0.4684	0.4406	0.4976
Hazardous waste generated in rural areas	Million ton	0.876	0.863	0.862
(A) Hazardous generated per capita	**Kilogram**	**27.78**	**25.89**	**27.25**
Hazardous waste generated per capita per day	Kilogram	0.08	0.07	0.07
Hazardous waste treated in the country	Million ton	0.0104	0.0108	0.012
Waste recycling by Establishments	Million ton	0.0053	0.0052	0.0052
Waste recycling by Municipalities	Million ton	0.0051	0.0056	0.0068
(B) Percentage of hazardous waste treated in Bangladesh	**Percentage**	**0.23**	**0.25**	**0.26**

Calculated SDGs Indicators..

Description	Measurement unit	Year		
		2018-19	2019-20	2020-21
Indicator 6.3.1: Proportion of domestic and industrial wastewater flow safely treated				
A. Total wastewater generated in Bangladesh	**Million cubic meters**	**6134.91**	**5629.51**	**5955.67**
Industrial wastewater	Million cubic meter	3279.85	2823.27	3118.37
Municipalities wastewater	Million cubic meter	1672.46	1616.51	1644.99
Rural households	Million metric ton	1182.60	1189.73	1192.31
B. Total wastewater flow treated in Bangladesh	**Million cubic meter**	**1202.92**	**993.66**	**1134.45**
Wastewater flow treated by Establishments	Million cubic meter	1217.87	1067.60	1174.46
Wastewater flow treated by Municipalities	Million cubic meter	0.30	0.30	0.31
Wastewater flow treated in rural Bangladesh	Million cubic meter	0.00	0.00	0.00
C. Proportion of wastewater flow safely treated	%	**19.61**	**17.65**	**19.05**

Calculated SDGs Indicators…

Description	Measurement unit	Year		
		2018-19	2019-20	2020-21
Indicator 12.5.1: National recycling rate, tons of matter recycled				
A. Waste generated in Bangladesh (solid waste)	**Million metric ton**	**36.09**	**35.06**	**35.15**
Establishments	Million metric ton	20.65	20.47	20.41
Municipalities	Million metric ton	8.00	7.19	7.44
Rural households	Million metric ton	7.44	7.40	7.30
B. Waste recycled in Bangladesh	**Metric ton**	**5.38**	**5.27**	**5.48**
Establishments	Million ton	5.14	5.05	5.25
Municipalities	Million ton	0.24	0.22	0.23
Rural households	Million ton	0.00	0.00	0.00
C. National recycling rate (waste recycled/ waste generated*100)	%	**14.91**	**15.03**	**15.59**

Calculated SDGs Indicators….

Description	Measurement unit	Year		
		2018-19	2019-20	2020-21
Indicator 11.6.1: Proportion of municipal solid waste collected and managed in controlled facilities out of total municipal solid waste generated				
Municipal solid waste generated	Million metric ton	8.00	7.19	7.41
Solid waste collected and managed in controlled facilities	Million metric ton	0.18	0.16	0.18
Proportion of solid waste collected in controlled facilities	%	**2.25**	**2.23**	**2.43**

Lessons Learned from generation of Waste Statistics

- Due to time constraints and adverse conditions caused by **COVID-19 Pandemic,** some deficiencies and weaknesses remained in the questionnaires constructed for data collecting.
- Answers to the questions related to a person were taken from the **proxy respondent.** That may have caused bias in the answer. Proxy respondents should be **avoided as far as possible.** However, if the respondent is unable to answer for any reason, then proxy responses can be used. and
- In many cases, due to the **weakness of the questionnaire design,** collected data could not be tabulated based on **more disaggregated level according to direction of UNSD/SDGs guideline.**

Challenges

- **Issues with waste statistics** accessibility, quality and timeliness;
- **Complex accountability, Coordination and Communication** among BBS and Other Sectoral Agencies/ Organizations;
- **Operational Gaps**
  - in the Integration in national planning process
  - in the development of institutional mechanism for implementation;
  - in technical capacities for developing new surveys;
  - in the designation of Focal Point from respective agencies/org
- **Understanding sound methodologies** of the environmental Statistics including waste statistics
- **Institutional Commitments**
- **Resource Mobilization**

Way Forward

- Waste Statistics Qquestionnaire should be adjusted for length and scope in future rounds of the survey. **Some modules could be attached to other surveys** (household data on various waste generation including waste water, sanitation, health and safety issues), climate change and environmental livelihoods modules could remain **as stand-alone**.
- There is room to improve it further with more focused and environmental health related **disaggregated data collection** related to Global Set statistics and indicators only to generate the Waste Statistics in a better way.
- Special attention needs in developing the Waste Statistics **Questionnaire with consideration of time required** by the interviewer and interviewee as well. Long questionnaire should be tiring for both sides then respond rate will be satisfied.
- **A digital interactive platform** needs to be developed in **permanent basis** for field level real time data collection along with geolocation or associated social, biophysical and geospatial parameters.

Thank You!

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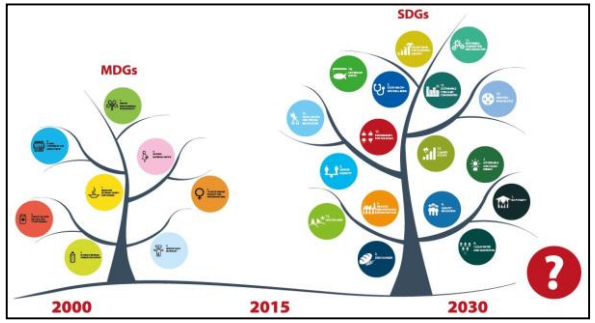
Background of Bangladesh

Bangladesh is one of the world's most disaster and climate vulnerable countries, at the same time most resilient countries, due to the frequent, regular, and devastating disasters, subject to a wide variety of climatic variability, including irregular rainfall, cyclones, storm surges, SLR, salinity, floods, and droughts

Banglades h has only 7% area of the total GBM basins which has more than 405 rivers, including 57 trans-boundary rivers

Impacts of climate change, such as drought, floods, extreme weather events like cyclone and food and water insecurity, affect women and men differently while making the poorest more vulnerable **(Signatory of SDGs, Paris Agreement & SFDRR)**

Gender are therefore disproportion ately affected, at the same time they play a crucial role in climate change adaptation and mitigation actions



In order to bring about a **paradigm shift towards climate resilient development pathways,** globally and at national level, all climate change mitigation and adaptation actions need to equally pursue broader environmental, social, economic, and political benefits in a gender-responsive manner.

Background of Municipal Waste Statistics

- ✓ **In Bangladesh, Municipalities (City Corporations and Paurashavas)** are entrusted with the primary responsibility for managing waste and keeping the cities clean and environmentally in good shape. **Due to inadequate technically well-trained human resources,** almost all Municipalities are facing significant difficulties in waste management.
- ✓ **In this first study ever conducted by BBS, the overall waste management** system including municipal and how well waste is collected and managed in our country were reviewed.
- ✓ **This study provided a wide range of data and information** that will, to a great extent, improve our knowledge and understanding of the current scenario of waste management in our country.
- ✓ BBS planned to collect data from **the Municipalities** regarding the composition of the waste, mode and frequency of waste collection, treatment, disposal, recycling, and the per capita generation of waste. Besides, this sudy also aimed to develop the waste-related SDGs indicators.

Objectives of the Municipal Waste Statistics

The broad objective of this study was to assess the existing overall waste management scenario and the waste collection efficiency of the Municipalities (City Corporations and Paurashavas) in Bangladesh.

The specific objectives

1) To measure the size, cost of employment, current and capital expenditures of the municipalities;
2) To measure the amount of waste generated based on waste type, source, and composition;
3) To measure the quantity of solid waste managed through controlled facilities;
4) To assess the quantity of solid waste recycled and reused;
5) To calculate the quantity of wastewater produced and treated;
6) To measure the hazardous waste produced, treated, and recycled;
7) To conduct a landfill operation analysis;
8) To conduct a transfer station operation analysis;
9) To conduct a compost plant operation analysis;
10) To assess the scenario of final disposal of collected waste; and finally
11)To calculate the waste-related SDG indicators

Coverage of Municipal Waste Statistics

- ✓ All Municipalities (City Corporations and Paurasavas) currently functioning in the country were investigated for data collection. Under this detailed study's data collected from 12 City Corporation and 330 Municipalities. (Full Count);
- ✓ The total area of 12 City Corporations were recorded to be 1437 square kilometer, yielding an average area of 119.75 square kilometer;
- ✓ The total area of A, B, and C category Paurashavas was seen to be 3430, 1349, and 608 square kilometers, respectively. This resulted in an average area of 17.77, 14.20, and 15.20 square kilometers, respectively;
- ✓ The total population of the 12 City Corporations was recorded at 20.58 million, with an average population density of 14322 people per square kilometer; and
- ✓ The population of the 328 Paurashavas stood at 19.92 million, with an average population density per square kilometer of 3698.

Background of EPERW Statistics

The most important goal of environmental protection expenditure, resource and waste management (EPERW) is to ensure that humans and ecosystems are protected because humans cannot survive without a healthy environment. Clean air, water, food, and fiber are all provided by ecosystems, which are the foundation of life on the earth.

Objectives

The main objective of this survey is to gather data on environmental protection expenditure, resource and waste management by the establishments (in sections A to R, as defined by ISIC Rev. 4). The specific objectives of this survey are the following:

- To assess the environment protection and resource management expenditure by types of expenditure;
- To measure the investment size to protect environment by environmental domains;
- To quantify the current expenditure to protect environment by environmental domain;
- To calculate current and capital spending for resource management;
- To collect data on activities that directly aim at prevention, reduction and elimination of pollution or any other degradation of the environment;
- To analyse the employment size and cost of employment the establishments; and
- To evaluate the technological innovations (devices and tools) that employed in environmental protection

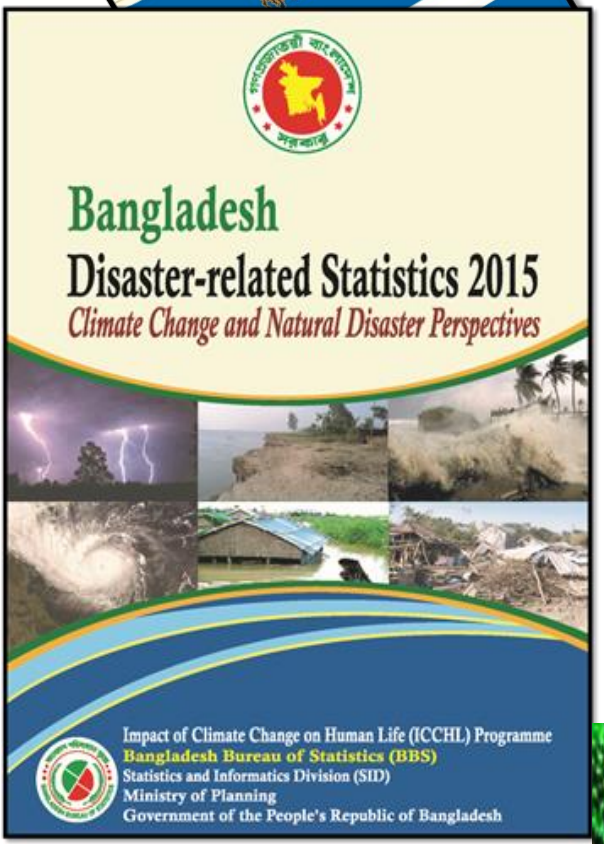
Background of EPERW Statistics

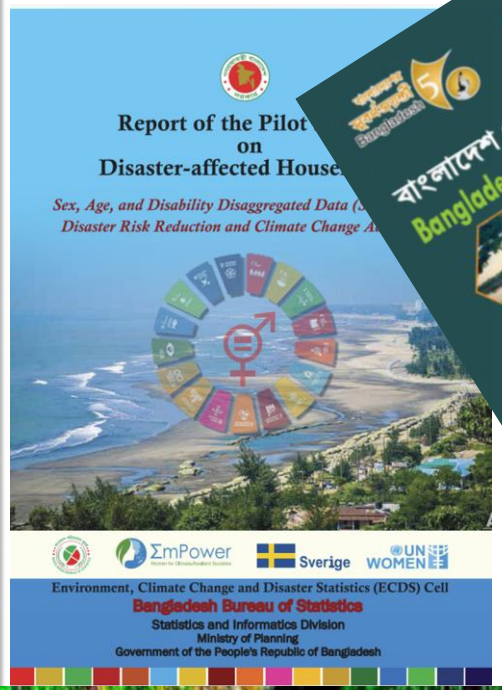
All large (250 or more employees) and medium-sized (100 to 249 employees) establishments, whose primary operations are specified of the International Standard Industrial Classification, revision 4 (ISIC.Rev.4) were included in this survey. However, for small (25–99 employees) and micro businesses (10–24 employees), a subset of the population (samples) was chosen using sampling methodology.

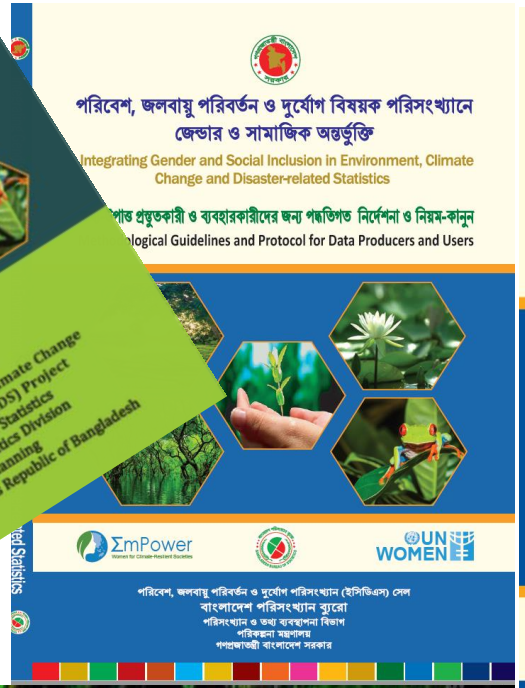
Institutions/ Organizations (Establishment)			
Types of Population	**Employment Size**	**Population Size**	**Sample Size**
Stratum I (large)	>=250	3,113	3,113
Stratum II (medium)	100-249	5,858	5,858
Stratum III (small)	25-99	28,083	1698
Stratum IV (micro)	10-24	89,707	2013
Total		**126,761**	**12,682**

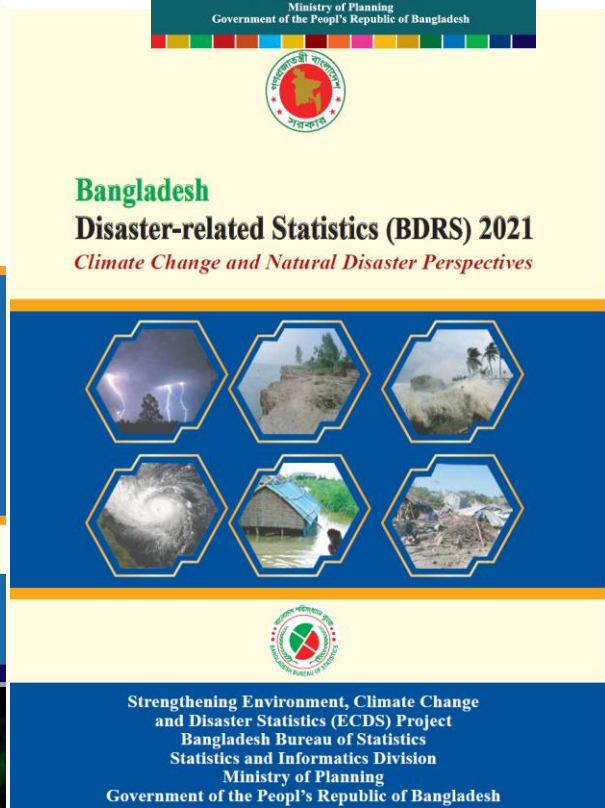
Environmental Statistics Family in Bangladesh

- Established **"Environment, Climate Change & Disaster Statistics (ECDS) Cell"**
- Formed an "**Inter-Ministerial Technical Working Committee**" for producing "Environment, Climate Change and Disaster Statistics"









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Last updated: 11th June 2023

Environment, Natural Resource, Climate and Disaster Statistics (ECDS)

- Report on Integration of GIS with Socioeconomic Demographic and Environmental data (New)
- Report on Natural Resources Accounts (NRA): Baseline Study of the Land, Forest and Ecosystems (New)
- Bangladesh Disaster-related Statistics 2021: Climate Change and Natural Disaster Perspectives (New)
- Report of the Pilot Survey on Diasaster-affected Households: SADDD for DRR and CCA
- Key Findings and Detailed Tables of the Bangladesh Disaster-related Statistics (BDRS), 2021
- Bangladesh Environment Statistics 2020
- Press Release on Bangladesh Disaster-related Statistics (BDRS) with Key Findings
- Presentation on Bangladesh Disaster-related Statistics (BDRS), 2021
- Pilot Survey on SADDD and CCA & DRR (
- Gender & Environmet Nexus_Protocal Guideline
- Bangladesh Environmental Statistics Framework (BESF) 2016-2030
- Bangladesh Disaster-related Statistics 2015: Climate Change and Natural Disaster Perspectives
- Bangladesh DIsaster-related Statistics 2015: Climate Change and Natural Disaster Perspectives (Presentation)
- Bangladesh DIsaster-related Statistics 2015: Climate Change and Natural Disaster Perspectives (Press Realease)
- Compendium of Environment Statistics of Bangladesh-2009

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Secretary, Statistics and Informatics Division

DR. SHAHNAZ AREFIN, NDC

Details

Director General, Bangladesh Bureau of Statistics

Environment. Climate Change & Disaster-related Statistics

1. Environmental Protection Expenditure, Resource and Waste Management Statistics 2022
2. Municipal Waste Management Statistics 2022
3. Report on Integration of GIS with Socioeconomic Demographic and Environmental data
4. Report on Natural Resources Accounts (NRA): Baseline Study of the Land, Forest and Ecosystems
5. Report on Bangladesh Disaster-related Statistics (BDRS) 2021
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13. Disaster Prone areas Atlas of Bangladesh
14. Bangladesh Disaster-related Statistics 2015: Climate Change and Natural Disaster Perspectives
15. Compendium of Environment Statistics of Bangladesh-2009
16. To Click for getting above publication and information:

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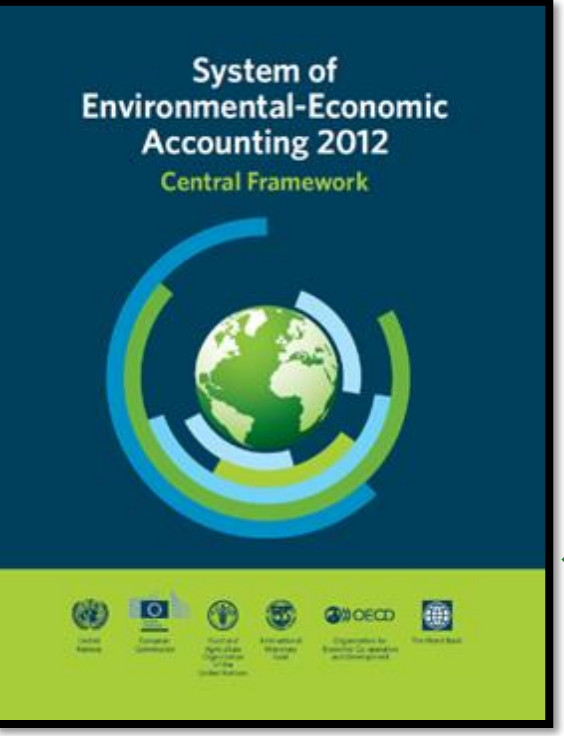
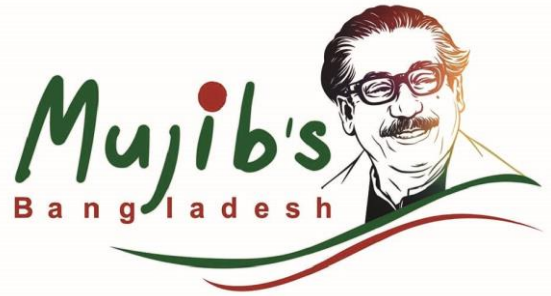
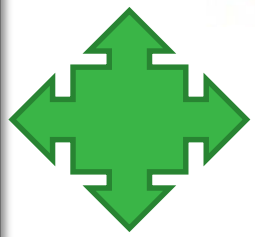
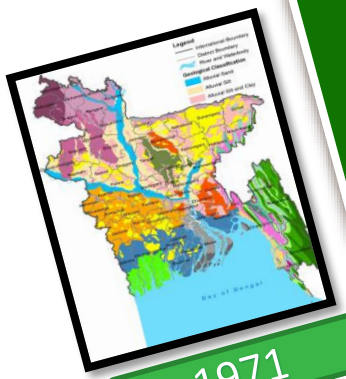






2016-30



1971

MDG
2000-15

2010-21

2018

2021-25

LDC
Graduation
2026

2021-41

2100

SEEA

Developed and
Prosperous
Bangladesh

Natural Resource
Accounts under SEEA