

BANGLADESH COUNTRY EXPERIENCE IN INTEGRATING STATISTICAL AND GEOSPATIAL INFORMATION USING GEOGRAPHY: Building on past tradition, recent achievements and looking forward to future possibilities

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Introducing Bangladesh

Bangladesh is a country in South Asia with a Population of 149.7 Million (Census 2011) and an area of 147,570 square kilometer. Bangladesh is bordered by India in West & North, India and Myanmar in the East and Bay of Bengal in the South.

National Flag of Bangladesh





Map of Bangladesh



National mausoleum of Bangladesh dedicated to the memory of Martyrs of Independence war in 1971

Office Building of Statistics and Informatics Division (SID) and Bangladesh Bureau of Statistics (BBS)



Beautiful Bangladesh-.mp4

Bangladesh in the Global Arena

- As an active member of the United Nations, Bangladesh remains constructively engaged in many international and regional forums, particularly in UN (UNSC, UNSD, UNGGIM, ESCAP, UNSIAP), OIC(SESRIC), SAARC etc.
- Bangladesh regularly joins in the United Nations Statistical Commission (UNSC) meetings and remains active in implementing the decisions of the UNSC meetings.

Integration of Statistics with Geospatial Information System: Global Perspective

- The United Nations Statistical Commission and United Nations Committee of Experts on Global Geospatial Information Management (UN-GGIM) have recognized the need to meet the challenges of managing and effectively integrating geospatial and statistical information nationally and globally.

Integration of Statistics with Geospatial Information System: Global Perspective (Contd.)

- Bangladesh took keen interests on the developments of 2013 when both UNSC and UNGGIM “acknowledged the critical importance of integrating geospatial information with statistics and socio-economic data and the development of a geospatial-statistical framework, especially in the context of the on-going debate on the post-2015 development agenda”.

Integration of Statistics with Geospatial Information System: Global Perspective (Contd.)

- Bangladesh is very much supportive of the Expert Group which has been tasked with developing and advancing the implementation of a global statistical-geospatial framework as a standard for the integration of statistical and geospatial information.
- We deeply appreciate Govt. of PR China (NASG), UNSD and UNGGIM for initiating the consultative process and feel that the current Asia Pacific Workshop is a step in the right direction.

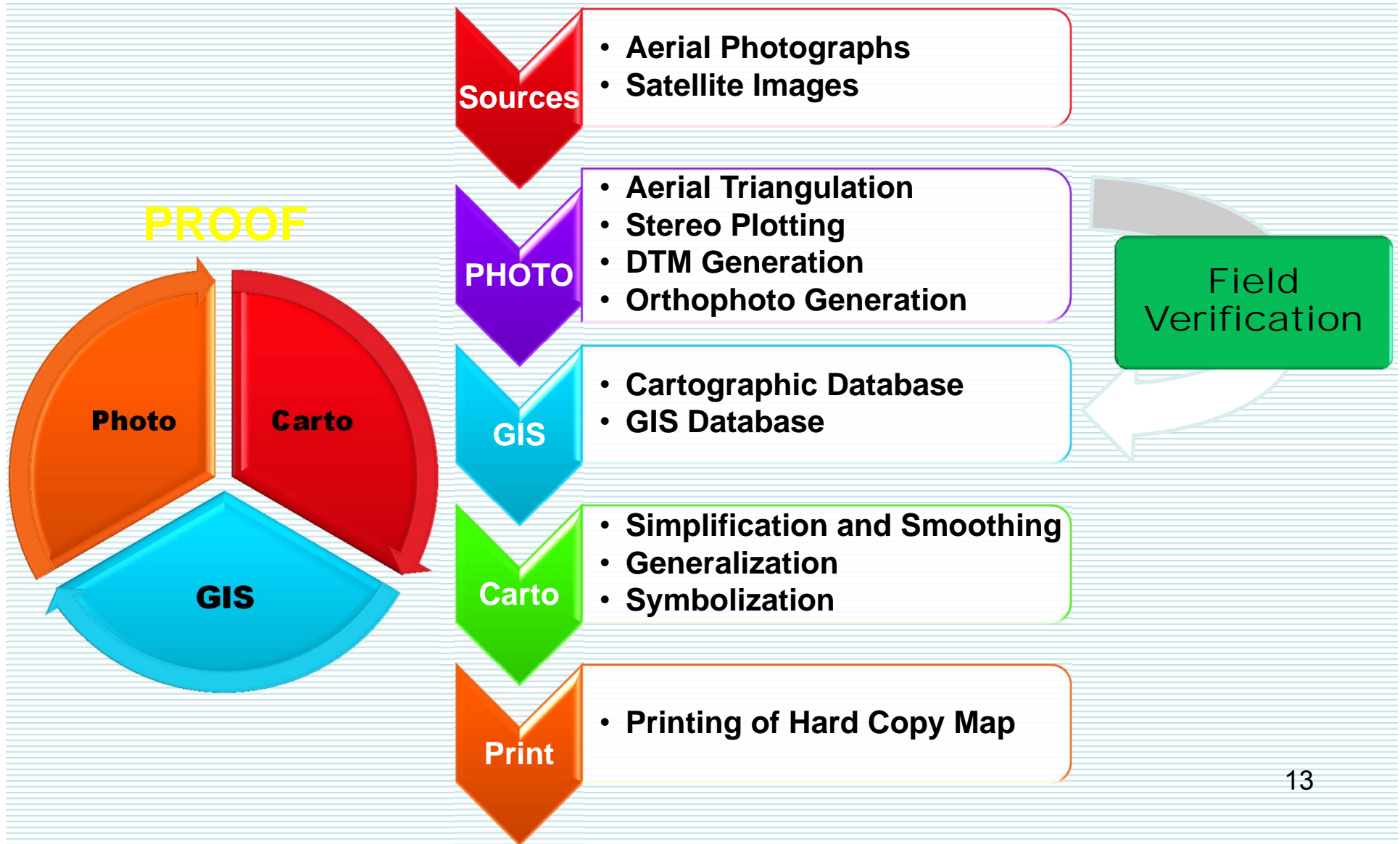
Integration of Statistics and Geospatial Information: Bangladesh Perspective

- A multi-stakeholders approach is in place where the two national organizations namely
 - Survey of Bangladesh (SOB), the national mapping organization (NMO) under the Ministry of Defence and
 - Bangladesh Bureau of Statistics (BBS), the National Statistical Organization (NSO) of the Statistics and Informatics Division, Ministry of Planning
- are closely working to integrate statistics with geospatial information.
- The core activities of this two national organizations are presented below:

Survey of Bangladesh: the National Mapping Organization (NMO)

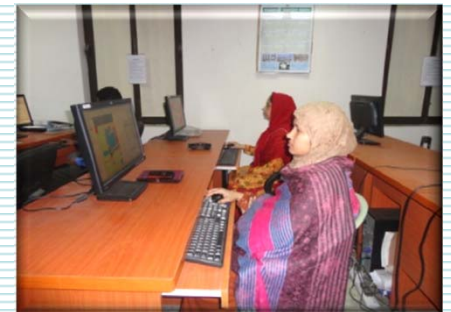
- The Survey of Bangladesh , had been facilitating the works of all government and non-government stakeholders in particular Armed Forces , SPARRSO and BBS - the NSO
- Producing Different Series of Topographical and Thematic maps and GIS Database
- Carrying out International Boundary Surveys between Bangladesh-India (Mizoram Sector) and Bangladesh-Myanmar
- Establishing and Maintaining Geodetic Control Network
- Playing Custodian roles on Aerial Photographs/ Images of Bangladesh

Survey & Mapping activities



DIGITAL MAPPING UNIT (DMU)

- Photogrammetric Section
- GIS Section
- Cartographic Section
- Server Section



GEODETIC ACTIVITIES

GROUND CONTROL POINTS (GCP)

Horizontal Control Points (X,Y)

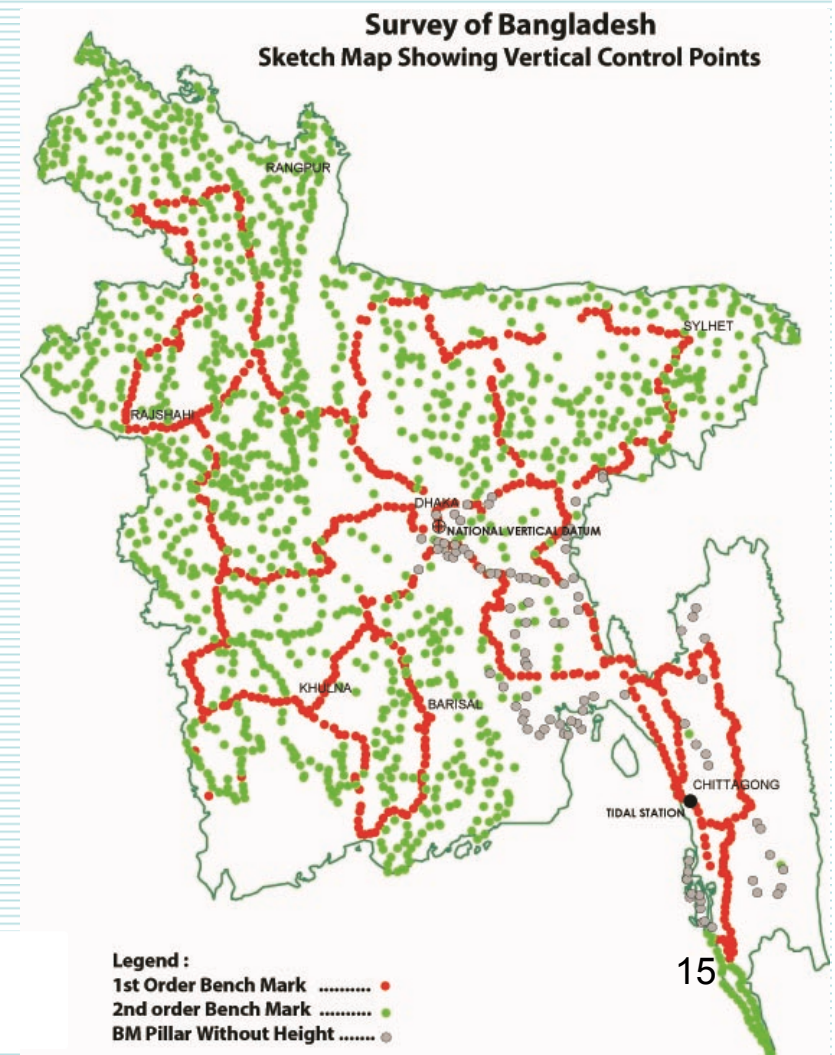
- 1st Order Horizontal GCP: 267
- 2nd Order Horizontal GCP : 756

Vertical Control Points (Z)

- 1st Order Vertical GCP : 668
- 2nd Order Vertical GCP : 1287

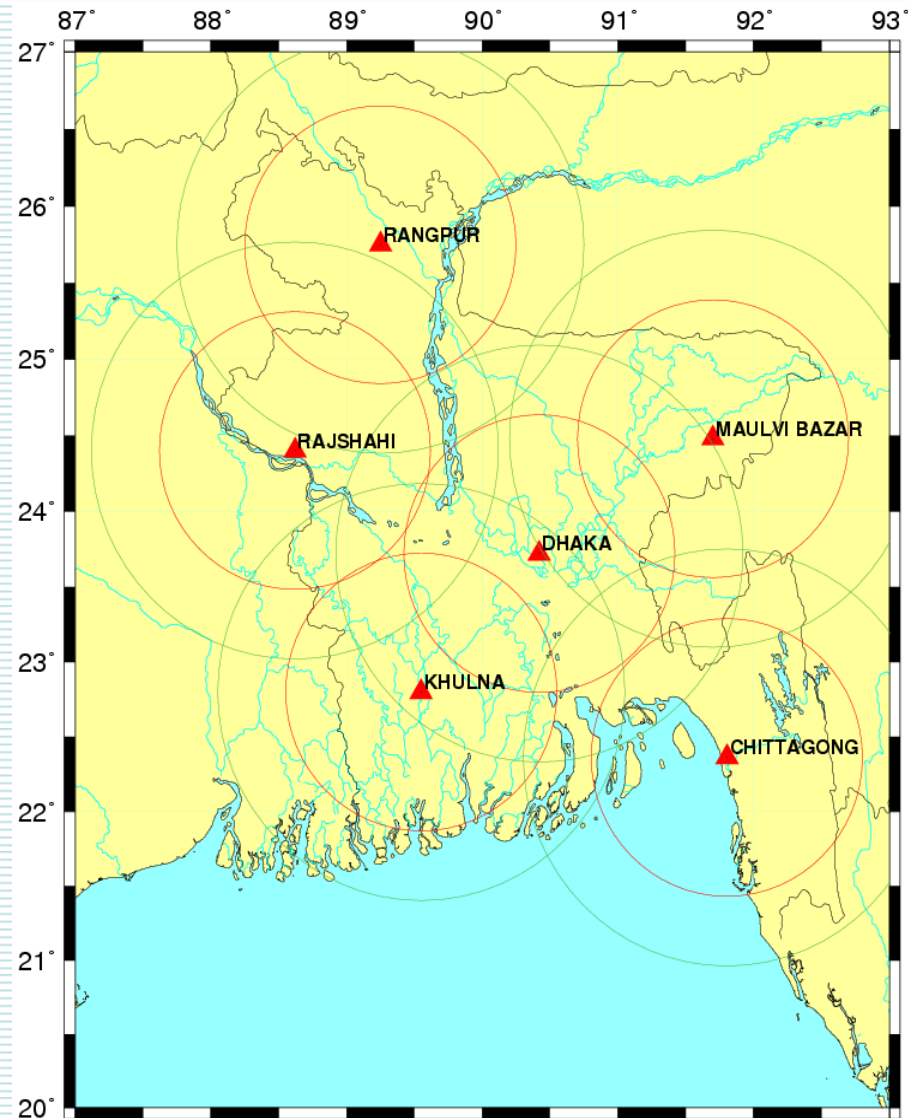
3D Control Points (X,Y,Z) : 627

Total Control Points: 2351



PERMANENT GNSS STATION

- **06 Permanent GNSS (Global Navigation Satellite System) Stations are located in Dhaka, Khulna, Rajshahi, Rangpur Chittagong & Moulvibazar**
- **Data are Collected since Dec 2011 and Supplied to Various Government, Autonomous Organizations**



Available GIS

Sl.	Scale of the maps: 5,000 and 25,000 (Being implemented)	
	Category	Summary Layers
1	Administrative Boundary	International, Division, District, Upazila along with Pillars and topographical sheet boundaries
2	Building and Structure	Building, Building Rooftops, Clustered Buildings, Buildup Area, Monuments etc.
3	Facilities	Religious, Education, Health, Governmental facilities etc.
4	Geodetic Control Points	Nationwide Vertical and Horizontal control points
5	Hydrography	River, Wetland, Island/Char-land etc.
6	Industry	Major Industrial locations along with type
7	Relief	Contour, Spot heights etc.
8	Transportation	Road, Railroad, Bridges, Ports etc.
9	Vegetation	Forest, Cultivation and non-cultivation area etc.

Usage of GIS Data

Field of Applications	Activities
Agriculture	Monitoring, evaluation and management etc.
Environment	Monitoring, modelling and management for land degradation; weather and climate modelling, prediction and forecasting; river and coastal erosion modelling; flood management etc.
Health	Aerial distribution of different diseases in relation to environmental factors; visualizing changes in the occurrence of a disease over time etc.
Intelligence	Monitoring, tracking, evaluation and management etc.
Forestry	Management, planning; map prepare for site specific matching etc.
Regional/local planning	Development of plans, maintenance, management; infrastructure development programme, land registration etc.
Research & education	Different solutions from personal to national level etc.
Resource	Management, planning, monitoring, recording etc.
Social studies	Demographic trends and developments analysis etc.
Transport network	Planning and management etc.
Military Use	IPB, DMP and other battle planning, terrain analysis, resources planning, deployment, management, monitoring, recording etc.
Others	Thematic mapping, topographical mapping, site and location information, services, consultancy etc.

Recent Developments; Vision 2021 and Digital Bangladesh

- The Vision 2021 of the Hon'ble Prime minister of Bangladesh was launched in the eve of general election 2008 with the focus on the following:
- Use of technology in education, health, job placement and poverty reduction.
- Underscored mind-set change (a changing attitude, positive thinking and innovative ideas) for the success of digital Bangladesh.
- The Philosophy of "Digital Bangladesh" comprises ensuring people's democracy and human rights, transparency accountability, establishing justice and ensuring delivery of government services to the citizens of Bangladesh through maximum use of technology.
- Inclusiveness: This includes all classes of people and does not discriminate people in terms of technology.

Recent Developments (contd.)

- Four elements of “Digital Bangladesh” are human resource development, people involvement, civil services and use of information technology in business.

- Geospatial data takes us further ahead to digital Bangladesh by putting digital data back into action by analysing and making timely effective and efficient decision

- In this regard the recent initiatives taken by the Government are noteworthy These are:
 - Digital Innovation Fair,
 - Access To Information (A2I) Program
 - Establishment of Union Information and Service Centre (UISC) at lowest tier of local government administration

Current Situation:

Growing demand of Geospatial Information

- In Bangladesh, huge geospatial data is available with various public and private sector organizations
- The major part of this data is being produced by public sector organizations to facilitate their mandated responsibilities
- These trend indicates that almost every year the demand for Maps and Geospatial data is growing in Bangladesh

Growing demand of Geospatial Information..

Contd.

- Prominent organizations of Bangladesh are using GIS facilities in their respective field of applications
- It is observed that a large number of communities are making GIS database at isolation.
- This is creating redundancy, inconsistency and duplication of data along with very high initial overhead costs

Mapping of Geospatial communities of Bangladesh

Security Forces	Commission/Ministry/Department		Autonomous Bodies/Others
Armed forces	BBS	DOE	IWM /CEGIS/ WARPO /Consultancy firms
Bangladesh Police	EC	DOF	Private mobile companies
Rapid Action battalion (RAB)	BANBEIS	DPHE	Urban planning (RAJUK, DCC, KDC etc.)
NSI	DLRS	LGED	Utilities services (BTCL, PWDB, WASA, TITAS etc.)
DGFI	Fire Brigade	RHD	Real Estate companies
	GSB	SPARRSO	Tourism organizations
	MOA	DGHS	Universities & research institutes
	DMB		Health care organizations
			Various NGOs

Introducing Bangladesh Bureau(BBS) of Statistics, the National Statistical Organizations (NSO) of Bangladesh.

- BBS is the only National Statistical organization (NSO) responsible for collecting, compiling and disseminating statistical data on all the sectors of the Bangladesh.
- BBS is to providing necessary statistics for preparing the various national plans and policies for the overall development of the country.

Introducing Bangladesh Bureau of Statistics(BBS), the National Statistical Organizations (NSO) of Bangladesh. (Cont.)

- According to recently enacted Statistics Act 2013, BBS is mandated to Establish a central Integrated Geographical Information System.
- BBS is now working closely with SOB and other GIS based organizations towards establishing a integrated geographical information system.
- The Cabinet adopted National Strategy for Development of Statistics (NSDS) in October 2013, provision has been made for modernizing GIS and developing a wave enabled mapping system with other statistical attributes.

This efforts will help to integrate statistics with geospatial information.

Activities of BBS and Some Other Organizations Related to GIS Applications.



Bangladesh Bureau of Statistics (BBS)



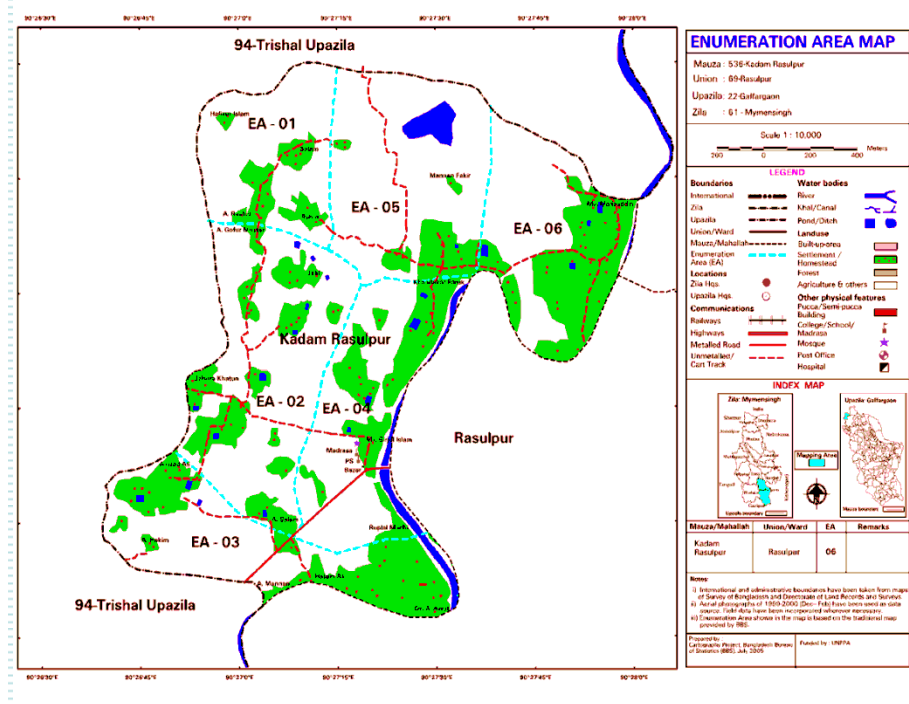
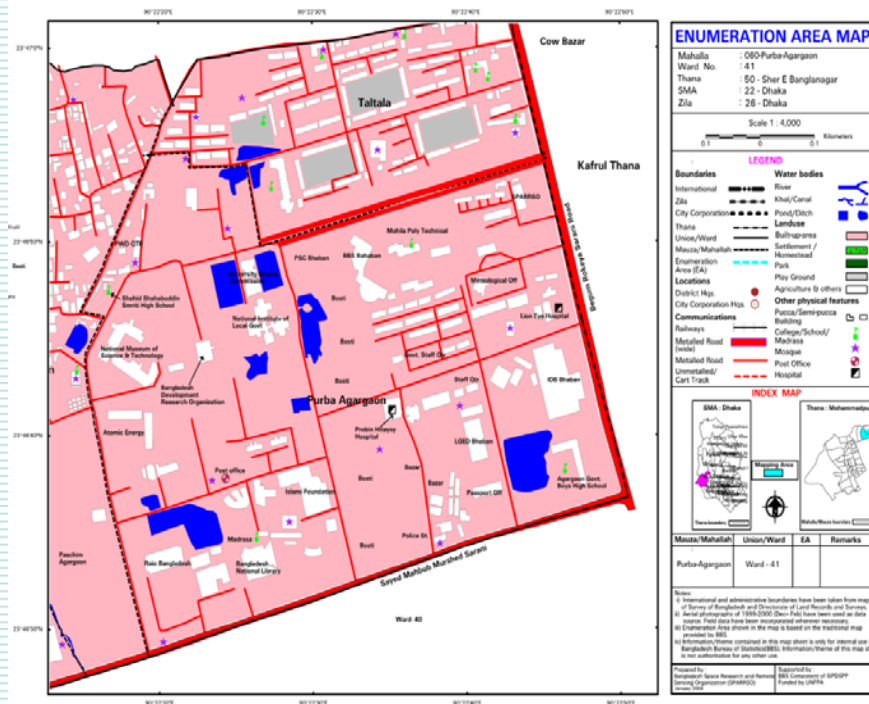
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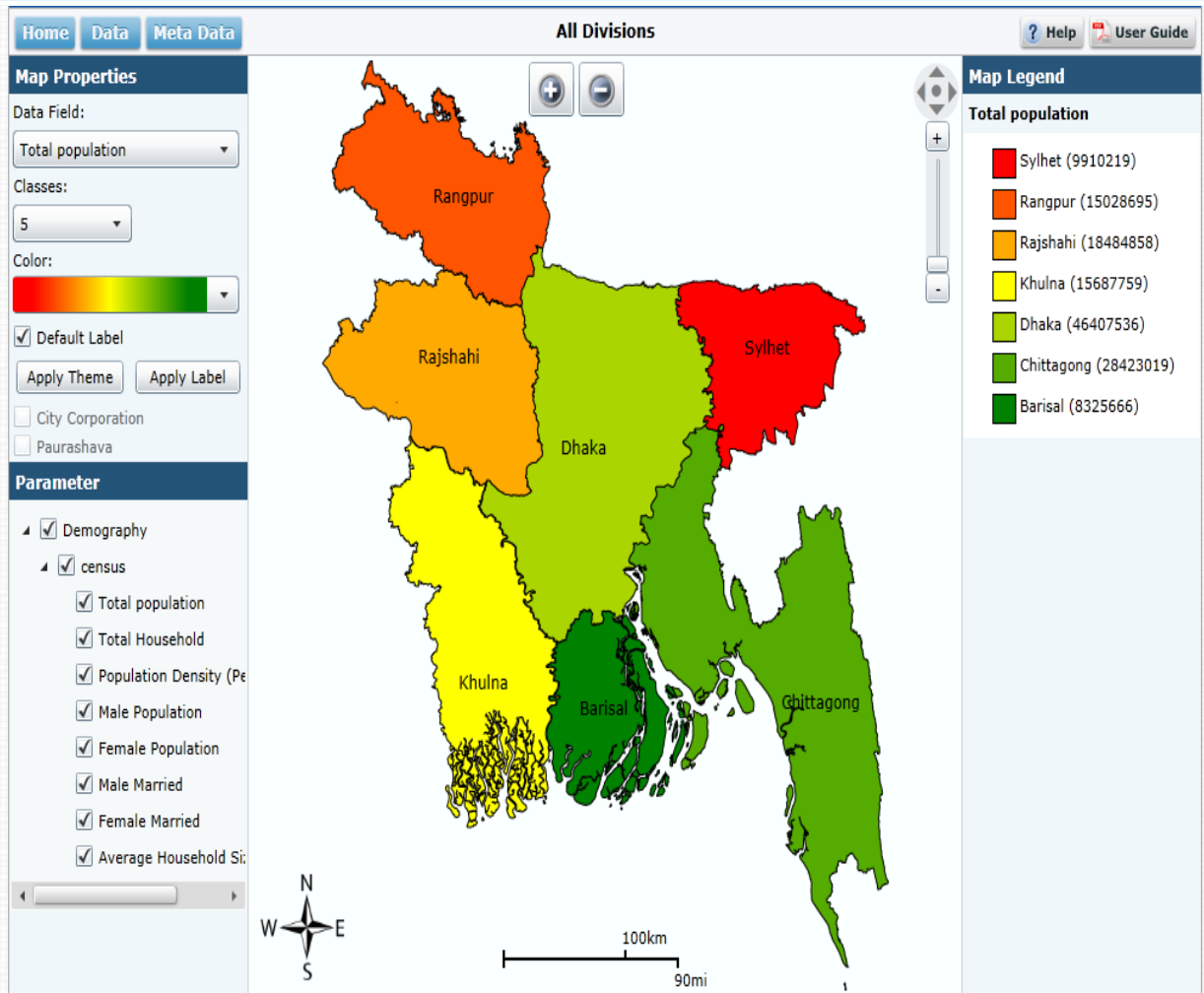
BBS is using GIS to provide Census Enumeration Area Mapping (Mauza/Mahallah).





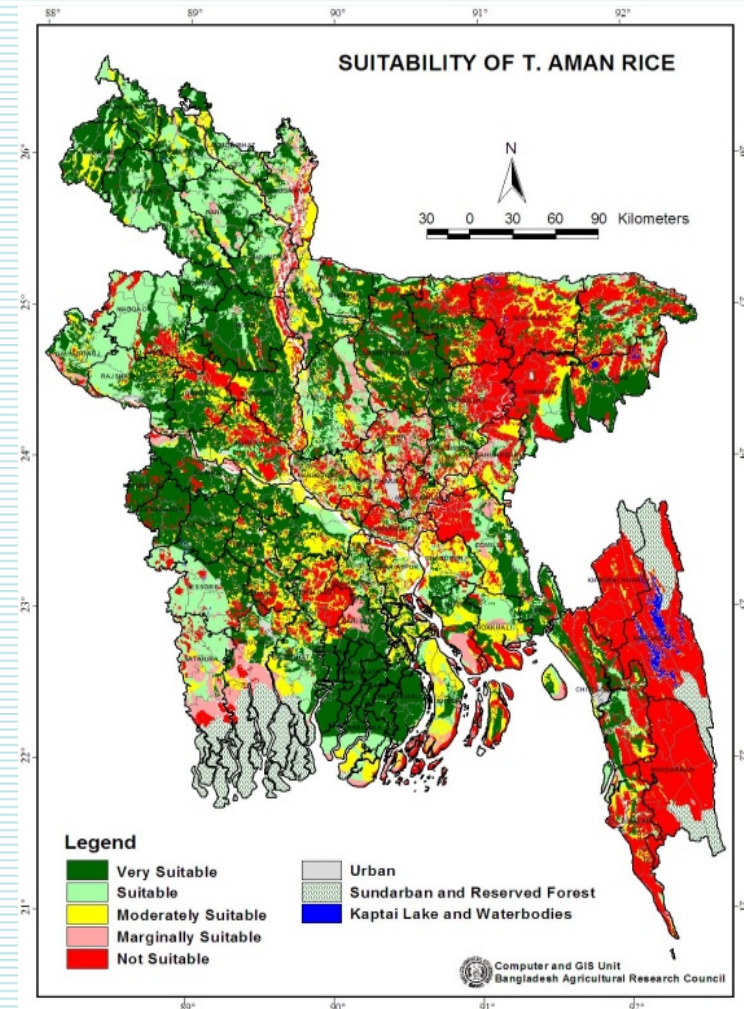
BBS prepared web based thematic maps using Population Census 2011

www.bbs.gov.bd



Bangladesh Agriculture Research Council (BARC)

BARC is executing a project entitled “Utilization of Agro-ecological Zones Database and Installation of GIS for Agricultural Development” initiated in 1996 to create a National Agriculture Land Information System Database in GIS environment.





LOCAL GOVERNMENT ENGINEERING DEPARTMENT

Local Government Division

Ministry of Local Government, Rural Development & Cooperatives



LGED District Portal

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Banqladesh Image



District/Upazila Map Download



Road Map Download



MAP Download Guideline:

LGED Latest News



Inaugural session of SERVIR Himalaya Youth Forum, 2014 jointly organized by ICIMOD, BSAC and LGED was held on 05/05/2014 at LGED HQ. Mr. Naba Bikram Kishore Tripura Secretary, MoCHTA was the Chief

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Free Seminar Program

- [Background](#)
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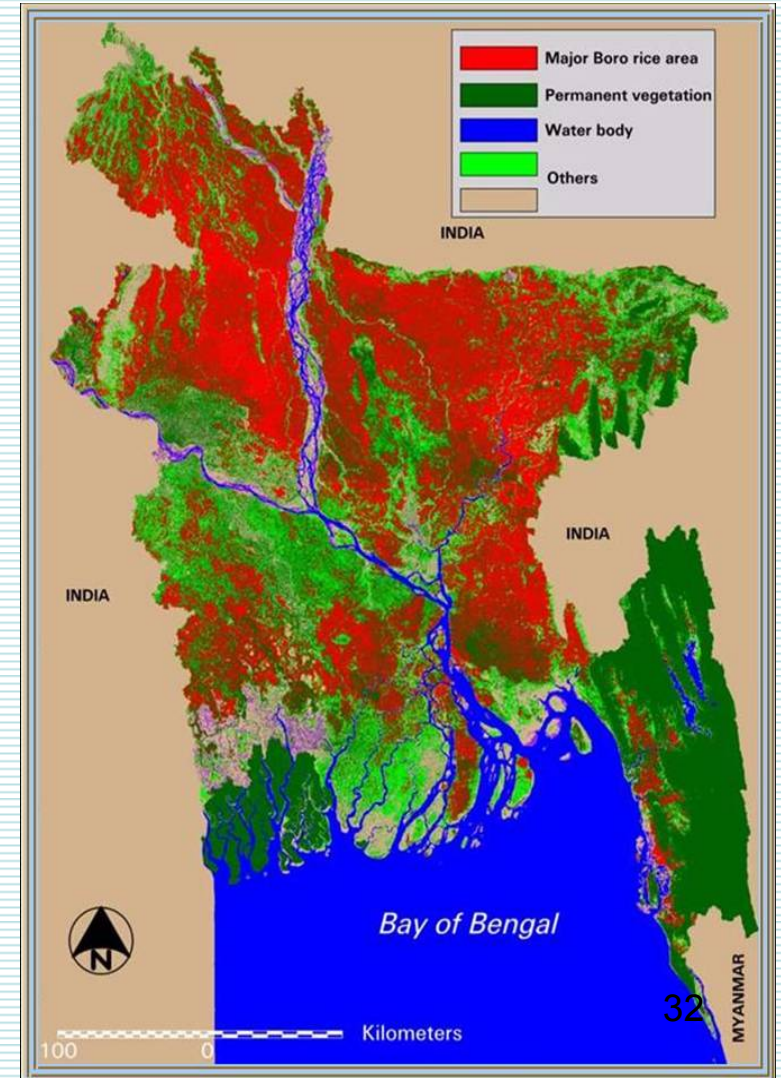
Latest Documents

- [MGSP Publication](#)
- [Report of LGED on TIP](#)

Upazila/Thana base maps, District maps and road maps of the country produced by LGED. All these maps contain various layers including administrative boundaries, physical infrastructure, educational institutions, settlement patterns, agriculture and socio-economic infrastructures.

Space Research and Remote Sensing Organization (SPARRSO)

SPARRSO has done a lot of works such as Crop Assessment, Forest Coverage Mapping, Extent of Shrimp Culture, Potentiality Mapping, Monitoring of Ecological Changes, and Land use Mapping etc.





SOIL RESOURCE DEVELOPMENT INSTITUTE (SRDI)

Government of the People's Republic of Bangladesh



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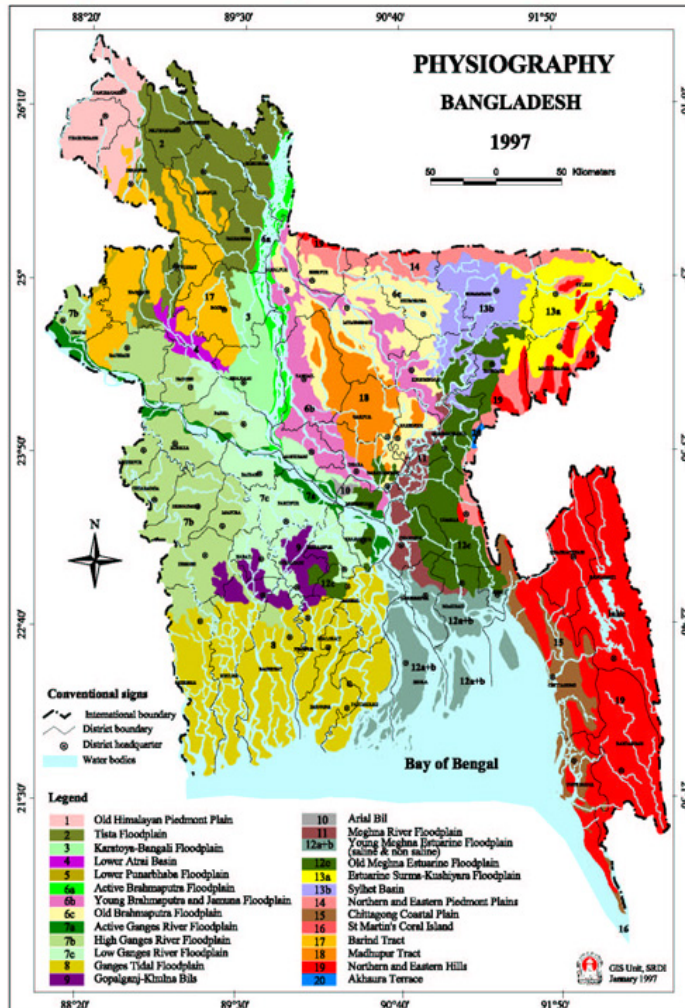
Citizen Charter

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Manpower

Gallery

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The major activities of SRDI are:

- Soil Survey of the whole country on the basis of aerial photo interpretation, field and laboratory investigation of soils;
- Interpretation of aerial photos, land sat imageries and topographic maps for soil and land use surveys.
- Preparation of various maps and reports on the above-mentioned surveys for publication.

Challenges and Constraints

- Data Standards
- Creation of a GIS Platform
- National Spatial Data Infrastructure (NSDI)
- Integration of Statistics with Geospatial Information
- Formal Legislation for Geospatial Data Usage

Opportunities

- Political Will
- Inter-ministerial coordination
(creation of SID)
- MDGs
- UNGGIM
- Post-2015 Development Agenda
(Data Revelation- GEO Coding
system)
- Asia-Pacific Workshop

Recent Initiatives of BBS

(a) A National consultation was held in Dhaka on 05-05-2014 which created a consensus that the statisticians and related stakeholders will benefit from the provision of services for integrating geospatial and statistical information

(b) The workshop on GIS based organization was held under the auspices of BBS with the following objectives :

1. To form a GIS platform to integrate statistics with geospatial information system.
2. To make sustainable development maps.

Recent Initiatives of BBS

(c) As government has expanded Statistics Division to Statistics and Informatics Division (SID) to integrate informatics with statistics under a single platform, therefore, it is an important opportunity for SID to coordinate the integration of statistics into geospatial information system.

(d) The stakeholder agreed to work together to integrate statistics with geospatial information under the leadership of SID & BBS of the Ministry of Planning.

(e) GIS was found to be a useful tool in many different areas of statistics, including

- ✓ Population Census
- ✓ Social And Demographic Statistics
- ✓ Economic Statistics
- ✓ Environment Statistics

The Way Forward

- **The Asia Pacific Workshop in Beijing will have a catalytic role towards making a regional platform to pursue the most of integration**
- **Exchange of views and sharing of lessons learnt among participating countries.**
- **Second National Consultation in Bangladesh**
- **The GGIM processes including the August 2014 session in New York and the HLF in Beijing (Oct 22-24, 2014) will be watershed events towards crystalizing the vision for integration.**

