



GSB NEWSLETTER

NEWSLETTER OF THE GEOLOGICAL SURVEY OF BANGLADESH

GSB in Nation Building Activities

The Geological Survey of Bangladesh (GSB) has been entrusted with the responsibilities of geological mapping, investigation and exploration of mineral resources (excepting oil and gas) and other geo-scientific research works. In addition to these activities, GSB conducts geological investigation in connection with various civil engineering constructions, water resources management, and various sorts of land use, geo-environmental studies, environmental hazards and urban geological mapping. GSB provides advisory services to the government, semi-government universities and private organizations on matters related to geology. Besides these GSB also play an active role in formulating the energy policy of the country.



The Hon'ble President of Bangladesh accompanied by Finance Minister, Energy Adviser and State Minister visiting GSB Stall During Power and Energy Week 2015.



Hon'ble State Minister Mr. Nasrul Hamid, MP accompanied by Principal Secretary Handing over Best Government Stall Award to The DG, GSB.



Hon'ble State Minister Mr. Nasrul Hamid, MP showing discovered Limestone to the Journalist at a press conference in his office.

Power and Energy Week, 2015 and the Role of GSB

The government observed "Power and Energy Week" on December 10-12, 2015 aiming to create public awareness about power and energy conservation and their efficient use. The theme this year is "Towards the Path of Light". The Honorable President of Bangladesh Mr. Md. Abdul Hamid inaugurated the programme at the Bangabandhu International Conference Centre (BICC) in the city. The function was followed by a seminar and exhibition of power and energy related products and services. A key note paper on "Blue Economy" was presented by DG, GSB and energy related own discovered products of GSB were displayed at the GSB Stall. GSB was awarded as the best Government organization in the exhibition.

Overview of current activities under Annual Performance Agreement (APA) 2015-16

Under APA agreement the following geo-scientific outdoor field programs have been conducted. 100% scheduled programs have been completed. Besides APA several special geological mapping programs have also been completed as per request from different government agencies. Important aspects of some of the programmes are described in brief.

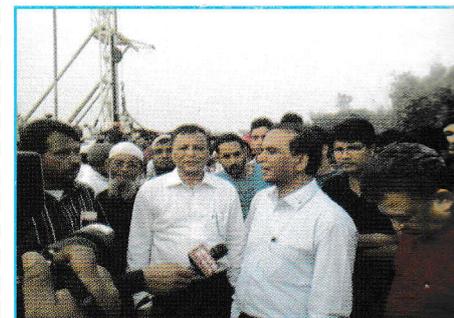
Mineral Exploration Programme

GSB has undertaken exploration programme for the investigation of industrial minerals like Coal, Hard Rock, Peat, Limestone, White Clay, Glass Sand and Metallic

Minerals in the Basement and other economic mineral deposits in the river sand.

New Limestone Deposits Discovered in Naogaon

GSB discovered Limestone in Upazila in Naogaon district this year. A 30.48 m thick good quality limestone deposit has been encountered at depth ranging from 675 m to 705.48 m, which is expected to be extended over 50 sq.km.



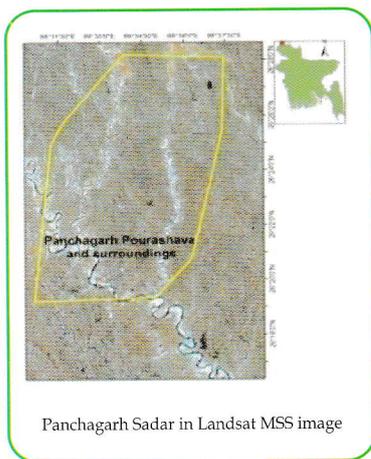
DG, GSB accompanied by other officials talking to the local News Reporter in the Launching Ceremony of GDH-70/2015 in Bilashpur, Badalgachhi, Naogaon.

Peat and White Clay Exploration

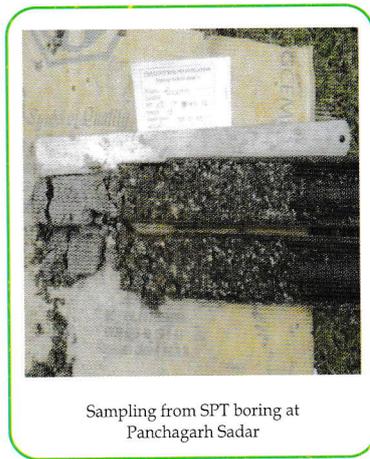
Reserve, extent and economic feasibility study of peat deposits was carried out at Derai Upazila, Sunamganj District. Total reserve estimated as 75.63 million ton. Geological investigation & feasibility study of White Clay at Aodhabeel and adjoining areas of Madhupur upazila, Tangail district conducted under Economic Geology and Resource Assessment Branch. Total reserve was found as 1250 million ton.

Engineering Geological Survey at Panchagarh Pourashava and surrounding area, Bangladesh

"Liquefaction susceptibility and seismic microzonation of Panchagarh Pourashava and surroundings through geomorphological, geological, and engineering geological mapping" was carried out by the Environmental Geology and Natural Hazard Assessment Branch. The main objective is to determine the liquefaction susceptibility of Panchagarh Pourashava and surrounding area if any high magnitude earthquake occurs in the region due to HFT (Himalayan Frontal Thrust) and MBT (Main Boundary Thrust) close to mapped area.



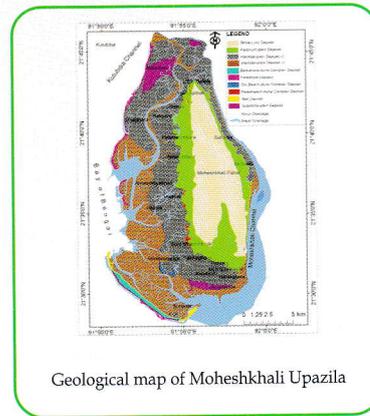
Panchagarh Sadar in Landsat MSS image



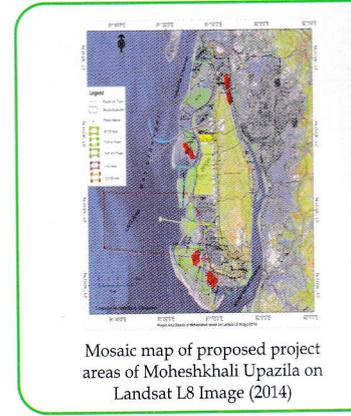
Sampling from SPT boring at Panchagarh Sadar

Field program at the Coastal Parts of Bangladesh

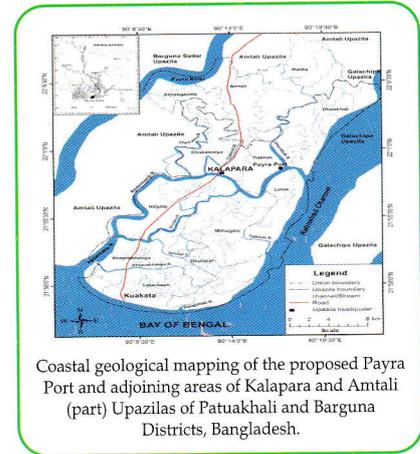
Coastal and Marine Geology branch of GSB carried out Geological investigation on the preparation of pre-development activities of the Moheshkhali Island, Bangladesh as per requirement of the Prime Minister office. This branch also conducted another mapping programme for providing geological information of the proposed Payra Port and adjoining areas of Kalapara and Amtali (part) Upazilas of Patuakhali and Barguna Districts.



Geological map of Moheshkhali Upazila



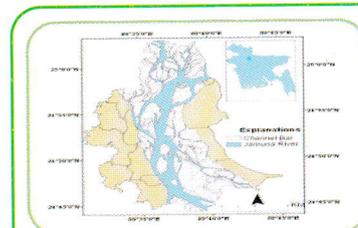
Mosaic map of proposed project areas of Moheshkhali Upazila on Landsat L8 Image (2014)



Coastal geological mapping of the proposed Payra Port and adjoining areas of Kalapara and Amtali (part) Upazilas of Patuakhali and Barguna Districts, Bangladesh.

Geomorphological Mapping at Sariakandi, Bogra

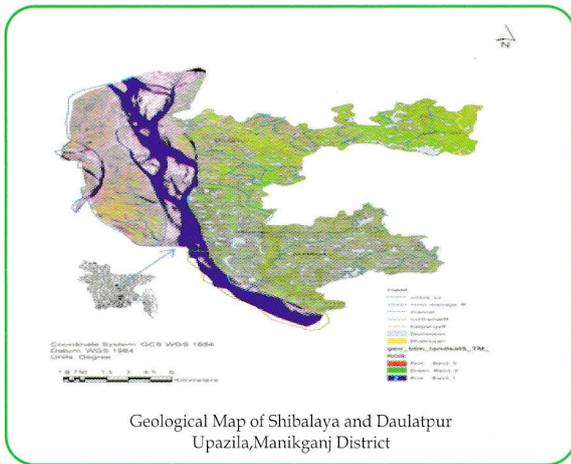
Remote Sensing and GIS branch carried out Geomorphological Mapping at the Sariakandi Upazila, Bogra District to identify the vulnerable to erosion areas along the river bank for necessary action. Multi temporal imagery analyses has been done in order to delineate the river bank erosion and river shifting of the Jamuna River at Sariakandi. Auger hole and geotechnical boreholes were done to know the lithology and subsurface soil layer.



Geo-technical boring with SPT at Sariakandi Upazila, Bogra District.

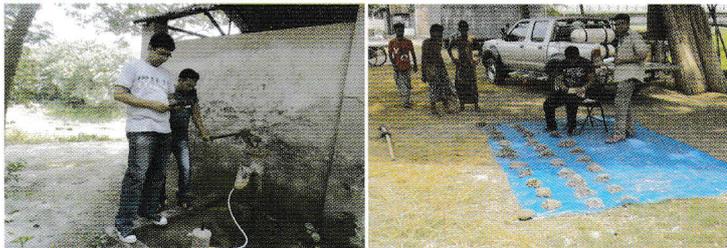
Geological Mapping of Shibalaya and Daulatpur Upazila of Manikganj District

Geological Mapping and Quaternary Geology Branch has taken initiative mapping of unconsolidated sediments throughout Bangladesh in order to unveil Quaternary history of the soft sediments and its evaluation. Part of annual geological mapping programme geological mapping of Shibalaya and Daulatpur Upazilas of Manikganj District was done at a scale 1:50,000. These maps will be used for infrastructural development in the area like Highways and Padma river Bridge-2 and related connecting roads and other structures.



Geochemical investigation at Shibchar, Madaripur

Geo-chemistry and Water Resources branch conducted geo-chemical investigation of water and sediment up to the depth of ±50 meter at Shibchar Upazila under Madaripur District. The objectives of this field program is to identify major, minor and trace elements in groundwater, its concentration, mineralogical and chemical composition of sediments, geo-environment analysis and finally to inform the local authority about the present scenario of aquifer quality for domestic purposes.



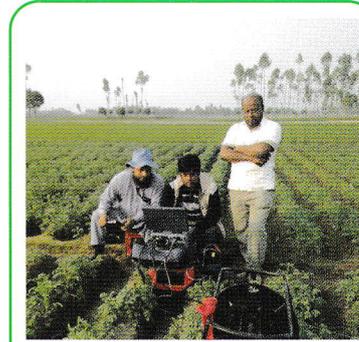
Measuring the physico-chemical parameters of water & sediments sampling.

Seismic Survey program

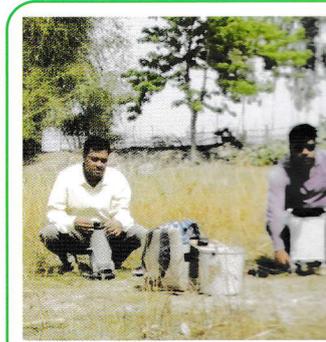
Electrical & Seismic Survey branch carried out a 30 line-kilometer seismic refraction survey programme at Badarganj and adjoining areas of Rangpur District to know the depth of Basement Complex and sedimentary basin condition.

Gravity and Magnetic Survey

Gravity and Magnetic Survey branch conducted Regional Gravity and Magnetic Survey at Kurigram-Nageshwari-Phulbari areas of Kurigram District. Data has been collected from 105 observation points at 1-2 km interval covering an area of about 160 sq km.



Seismic data acquisition at Badarganj, Rangpur



Gravity and Magnetic Survey in Kurigram

Laboratory facilities at GSB

X-RF and X-RD analyses facilities are now available at GSB. Petrology and Mineralogy branch equipped with XRF, X-RD and good number of high quality polarizing microscopes etc. An attempt has been made to prepare a data base on standard samples of rocks and minerals available in our country using X-RF and X-RD analysis. Samples are being collected from different regions of Bangladesh to achieve this goal.

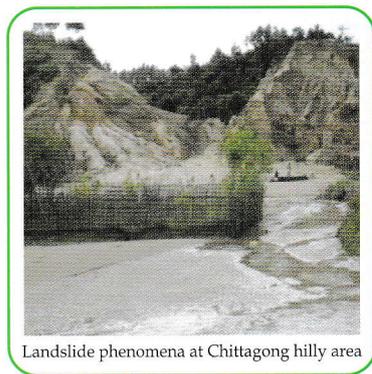
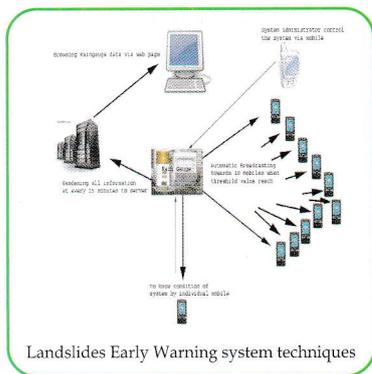


Mottling of Madhupur Clay at Shripur area, Gazipur

Special program Landslide risk reduction

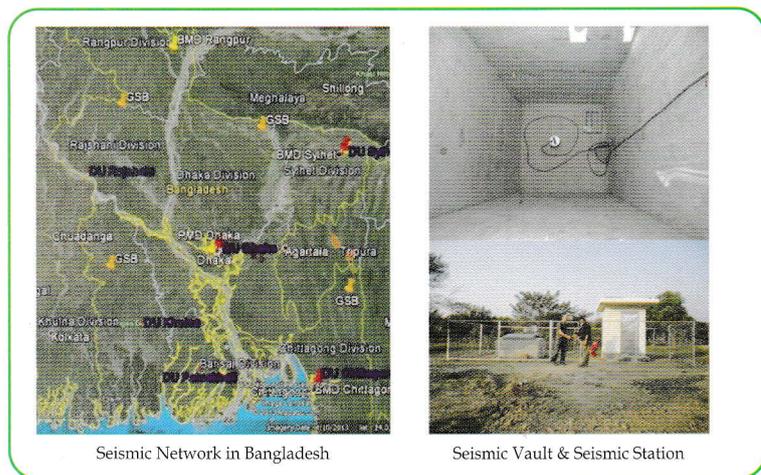
GSB has already established 4 automatic Landslide Early Warning System (LEWS) under GSB-NGI cooperation project. These stations are at Chittagong, Cox's Bazar and Teknaf areas those are susceptible to landslides. Landslides frequently occurred in these areas due to heavy downpour of huge amount of rainwater triggering landslides. These stations record precipitation at every

15. minutes after crossing the threshold values send data to online system concurrently send SMS to 10 imergency organizations designed to facilitate rapid evacuation from landslide prone areas.



Earthquake Risk Reduction

4. Seismic Stations have been established in Jessore, Joypurhat, Netrokona and Khagrachari districts with assistance from the Norwegian Government. These stations provide data on earthquake identification and monitoring will help for research work through which safer urbanization can be built.



Working for BEZA

Coastal and Marine Geology branch performed mapping work at Moheshkhali and Teknaf Upazilas of Cox's Bazar district for land development as per request from Bangladesh Economic Zone Authority (BEZA).

Working with Bangladesh Navy

GSB and Bangladesh Navy jointly surveyed at Kutubdia and adjoining sea areas for collecting bottom sediment and water chemistry of the sea. A MoU will be signed shortly between GSB and Bangladesh Navy for Marine Survey.

Field Program at Bandarban

Coastal and Marine Geology branch of GSB joint organized with the Geography Department of Dhaka University for the Geological Investigation of Boga and Pukurpara Lake in Bandarban district, Bangladesh to determine the origin of the lake.



PS logging at Dhaka, Gazipur and Narayanganj

The Urban and Engineering Geological branch of GSB collected data and information through PS Logging at different parts of Dhaka, Gazipur and Narayanganj area under the "Geo-Information for Urban Development in Bangladesh (GUD) project.



Field program at Phulbari, Dinajpur

Geological mapping and Quaternary geology branch conducted a special fieldwork at Phulbari, Dinajpur per the demand from the Administrative Ministry to understand the overall geological condition of adjoining areas of Phulbari Coal Field which is considered as one of the most prospective coal field in the country. Through this investigation, the aspect of coal field development, the infrastructural, industrial and environmental challenges and constraints could be identified and properly addressed.

Technical Assistance Project (TAP)

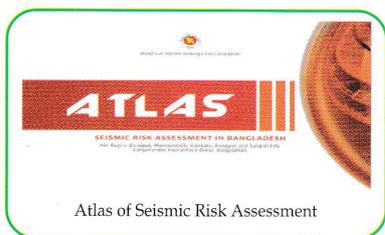
GSB cooperation with Federal Institute for Geosciences and Natural Resources (BGR) implemented technical assistance project titled "Geo-information for Urban Development, Bangladesh (GUD)". The project goal is to strengthen the urban planning and development incorporating geo-information for safe and resilient urban areas in the Greater Dhaka City. Three stake holders namely Dhaka South City Corporation (DSCC), Gazipur City Corporation (GCC) and Local Government Engineering Department (LGED) are agreed to perform a Memorandum of Understanding (MOU) for future cooperation and geo-special data sharing with GSB.



Open discussion held between GUD project experts and participants from different organization at DSCC.

GSB-CDMP Collaboration

GSB work with the Comprehensive Disaster Management Programme (CDMP) of the Ministry of Disaster Management and Relief (MaDMR) to understand the vulnerability and risk related to earthquake in major cities of the country and to undertake initiatives for earthquake preparedness and capacity building as required for the stake holders. An Atlas on "Seismic Risk Assessment in Bangladesh" is now available at GSB.



GSB Support to Bureau of Mineral Development (BMD)

GSB have been working for the Bureau of Mineral Development (BMD) since its inception. Through the Energy and Mineral Resources Division GSB provides all

necessary support including deploying manpower for proper functioning of BMD. Among the regular operational work one of its prime responsibilities is to evaluate the exploited mineral resources and fixing royalty. These works are being done throughout the year in leased areas.



In a meeting APA, 2016 was signed between the Energy Secretary Mr. Nazimuddin Chowdhury and the DG, Dr. Md.Nehal Uddin of GSB at the Ministry office.

On going GOB Project:

- Identification and Economic Assessment of Valuable Minerals in the River Sand of Bangladesh.

Upcoming Projects:

TPP Project: (German Aided)

- Geo-information for Urban Planning and Adaption to Climate Change, Bangladesh (GeoUPAC).

GOB Project:

- Detail exploration of limestone at Tajpur Basin, Naogaon District, Bangladesh (July, 2016 - June, 2019)
- Geo-characterization and Mineral exploration in the offshore Areas of Bangladesh (July, 2016 - June, 2021)
- Mapping for Development of Earthquake Resilient cities in Bangladesh.

Seminar / Workshop / Training Organized by GATC, GSB

Geoscience Awareness and Training Center (GATC) regularly organize Seminar/ Workshop/Training programs at Seminar Hall of GSB. List of programs are as follows.

- A training program organized by GUD project titled "Enhance Geophysical Logging and Interpretation" Dr. Ursulla H. Noell, Scientific Staff, BGR trained eight participants from GSB on January 16-21, 2016.



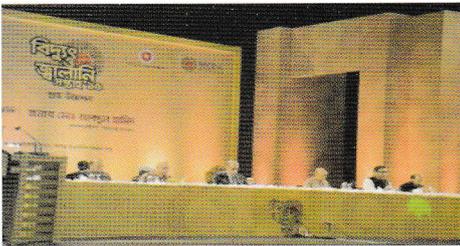
1. GSB received Best Government Organization Award during Power and Energy Week, 2015.



2. Ms. Salma, DD explaining GSB activities to the Hon'ble Minister of Housing and Public works



3. Earthquake related exhibaxibition at the HBRI



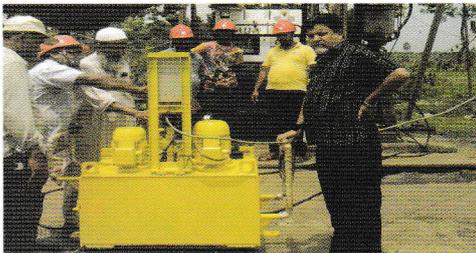
4. Hon'ble President, Finance Minister and State Mimister in the inaugural ceremony of Power and Energy Week, 2015.



5. Visitors observing GSB stall during Power and Energy Week, 2015.



6. DG, GSB presented a paper on the role of GSB in Blue Economy Prospects during Power and Energy Week, 2015.



7. Mr. Fuaduzzaman, Director and Head of Diviission 2 visiting drilling side at GDH 70/15



8. Hon'ble Energy Adviser visits newly renovated GSB Museum.



9. Overview of delegates and participants in a seminar session at GSB auditorium.



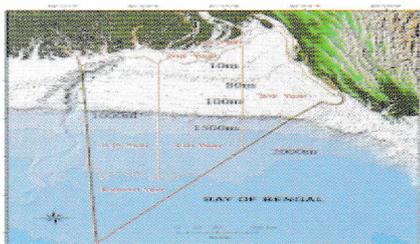
10. Field party busy in Geophysical Recording by GSB Logging truck



11. Core of Limestone deopis recently discovered at Naogaon District.



12. Peat exploration in Bhahmanbaria District.



13. Newly demarcated maritime boundar of Bangladesh.



14. Economic mineral deposits found in sand bar and chars of the main rivers of Bangladesh.



15. River sand under cross nicols.