



# GSB NEWSLETTER

Newsletter of the Geological Survey of Bangladesh (GSB)  
Number 1, July 2011

## NEW DIRECTOR GENERAL OF GSB

Mrs. Moonira Akhtar Chowdhury assumed to the office of the Director General of the Geological Survey of Bangladesh on November 3, 2010. She started her carrier in GSB in 1979. She obtained BSc (H) and MSc degrees in Geology from the University of Dhaka. Later she got Post-Graduate Diploma on Exploration Geophysics from the International Institute of Aerospace Survey and Earth Sciences (ITC), The Netherlands. During her long carrier she obtained training in the USA, and studied environmental science in Canada.



## ANNUAL FIELD PROGRAM

A number of field programs were carried out during 2010-11 FY under Revenue budget of GSB. These are drilling of a hole (GDH-65) at Thakurgaon and geophysical logging at the hole for locating thermal energy source; investigation for white clay in Sribordi, Jhenaigati and Nalitabari upazilas of Sherpur district; environmental and geotechnical mapping of Sadar upazila of Gazipur; urban-engineering geological mapping of Keraniganj and Savar upazilas of Dhaka district; geo-environmental change detection in and around Bheramara upazila of Kushtia district; geological and geomorphological mapping in Moheshkhali upazila of Cox's Bazar district; determination of level of contaminants from textile industries in DEPZ area of Savar, Dhaka, and collection of samples from Nhila anticline of Cox's Bazar for study of microfossils.

### ***Drilling for Geothermal Energy Source***

A drill hole (GDH-65) was made at Thakurgaon with the objective of locating a geothermal energy source. The drilling was completed at a depth of 561m (1841 feet). The maximum temperature recorded in the hole was 44.75°C at a depth of 480m (1575 feet).

## OTHER GEOSCIENTIFIC PROGRAMMES

Two geoscientific programmes under the Revenue budget have been taken.

**Programme 1:** "Integrated Geological Mapping of the Chalanbil Area to Unveil the Quaternary Records and Climatic Changes (July 2010-June, 2013)". Cost of the programme is 335.80 Lac Taka.

Main objectives of the programme are to unveil evolutionary history, reconstruct Paleoclimatic history, construct Quaternary stratigraphy of this region, identification of hazardous elements, neotectonic study, hydrogeological study, land use planning and to identify economic mineral deposits (if any) etc.

Silicified bones of Pleistocene (?) mammals have been discovered in the sediments during the geological field works.

**Programme 2:** "Geoscientific Activities for Mineral Investigation-2<sup>nd</sup> Phase (July, 2011-June, 2014)". Project cost is 596.50 Lac Taka.

Main objectives of the programme are to conduct exploration activities for mineral and energy resources in the country.

## PROJECTS

At present 2 projects are being implemented-i) Japan Debt Cancellation Fund (JDCF), ii) technical assistance project funded by the Government of Norway. Implementation of an investment project was completed in June 2011.

### **JDCF Project**

"Strengthening the Research and Exploration Capabilities of the Geological Survey of Bangladesh (STREC Project) (January, 2010-June, 2012)". The project cost is 3823.00 Lac Taka.

Main objectives of the project are to strengthen the exploration capabilities of GSB by upgrading the existing analytical and research facilities to international level, to enhance detection level of valuable/crucial minerals and elements, training of 91 personnel in home and abroad.

During 2010-11 FY year gravity and magnetic surveys for mineral resources in Naogaon area, geochemical investigation for groundwater quality in Joypurhat-Naogaon area, urban geology for waste and environmental study in Dhaka Metropolitan and Savar areas, geological mapping in Sandwip, geological survey for Pleistocene red clay areas in Bogra, Rajshahi, Dhaka and Habiganj areas, and study on the erosion problem of the Jamuna River near Sirajganj have been carried out under this project.

#### **GSB acquires ICP-OES**

An Inductive Couple Plasma Optical Emission Spectrophotometer (ICP-OES) Varian 710 machine has been procured under STREC project which has enriched the research capability of GSB.

#### **Technical Assistance Project**

“Enhance institutional support and capacity building of Geological Survey of Bangladesh for mitigation of geohazards in Bangladesh (September, 2009-June, 2012)”. The project is being implemented with technical assistance from Norwegian Geo-technical Institute (NGI) and funding from the Government of Norway. The project cost is 440.00 Lac Taka.

Main objectives of the project are to reduce the risks from natural hazards, with emphasis on slope instabilities and seismic hazards, in Bangladesh by increasing the capacity of GSB through collaborative joint institutional co-operation projects to provide training to GSB personnel and to promote participatory approach to facilitate collaboration and coordination between different governmental organizations and international agencies.

#### **Investment Project**

“Geological Exploration for the Identification of Mineral Resources and the Areas Vulnerable to Natural Hazards in the Coastal parts of Bangladesh (July, 2006-June, 2011)” project was completed in June, 2011. The project was funded entirely by the Government of Bangladesh as grant. The project cost was 1598 Lac Taka and cumulative expenditure is 1570.60 Lac Taka.

Main objectives of the project are to identify and monitor the geo-environmental issues related to global warming in the coastal zone of Bangladesh, to carry out detailed geological investigation to assess the effect and vulnerability and identify the areas vulnerable to natural hazards in relation to sea level rise due to climatic changes and gather information on proper land-use planning with special emphasis to infrastructure development and settlement in changing condition.

During 2010-11 FY, fieldworks were carried out in the Sundarban areas for estimating

sedimentation rate and Teknaf areas of Cox's Bazar for neotectonic study. A drill hole was made at Dumuria of Khulna (GDH-64) for collection of subsurface samples and information. Geophysical logging was also conducted there. Drilling ended at a depth of 264.26m (867 ft).



Procurement of modern equipments for data collection (Seismic set, Geophysical Logger, Truck-mounted Drilling Rig, magnetic susceptibility meter, GPS, digital camera, side scan sonar etc.) and analysis (Voltametric Analyzer 797VA Metrohm, Atomic Absorption Spectrophotometer DUO 55B & 240Z, Xrd machine, digital microscope etc.) enriched the research capabilities of GSB. Geological and geomorphological mapping of the entire coastal area have been completed under the project, and preparation of a geoscientific database is in progress at present. Construction of office space in the main building in Dhaka having an area of 300 square meters has also been completed.

#### **MATLAB EARTHQUAKE STUDY**

An earthquake occurred on 10 September, 2010 with a magnitude of 4.8 having the epicentre at Matlab, Chandpur. The tremor was felt almost all over the country. A 3-member team visited the epicentral and surrounding areas just after the quake to collect damage and relevant data on the earthquake. Later a report containing an intensity map was prepared and a copy was submitted to the administrative ministry.

#### **SIGNING OF GSB-EOS MoU**

Geological Survey of Bangladesh (GSB) and Earth Observatory of Singapore (EOS) of the Nanyang Technological University of Singapore signed a MoU in October, 2010 to develop research and scientific co-operation and better understanding of the neo-tectonic setup of Bangladesh. Results will enable better hazard assessment of earthquake potential in Bangladesh and surrounding regions.

Main areas of cooperation are joint field activities in Bangladesh involving relevant

technical and scientific staffs from all parties include establishment and maintenance of GPS permanent station network to study the active faults in the field (geology, geomorphology, paleo-seismology), and of other earthquake or recent movement indicators. Equal partnering will remain among the parties in the collection, processing, interpretation of data and preparation and publication of scientific works.

#### **COLLABORATIVE ACTIVITIES**

GSB always supports other government and non-government organizations, research and academic institutions to carry on scientific research works. Some of the recent activities are given below.

##### ***GSB-MoFA Collaboration***

A team of 15 scientists of GSB actively worked for United Nations Convention of the Law of the Seas (UNCLOS) under the Ministry of Foreign Affairs for 3 years. GSB was one of the 7-working group members to prepare the scientific and technical report in support of the legal document for the delimitation of the maritime boundary for submission to the United Nations.

##### ***GSB-CDMP Collaboration***

GSB worked as an associate organization with the Comprehensive Disaster Management Programme (CDMP) of the Ministry of Food and Disaster Management and prepared Geological, Geomorphological and Geotechnical Maps of Dhaka, Chittagong and Sylhet City Corporation Areas. This was an integral part of Earthquake and Tsunami preparedness programme of CDMP.

GSB is also engaged for CDMP phase-II to prepare similar maps for Dinajpur, Rangpur, Bogra, Rajshahi, Tangail, Mymensingh, Cox's Bazar and Teknaf cities/towns. Consequently collection of the data and relevant information will be used to prepare Seismic Microzoning Map of the mentioned cities.

##### ***GSB-BMD Collaboration***

Officers of GSB are actively working with the Bureau of Mineral Development (BMD) to evaluate the exploited mineral resources for determination of the royalty with the request of BMD. These works are being done throughout the year in leased areas given by BMD. A number of officers are attached to BMD for performing its regular duties.

##### ***GSB-HCU Collaboration***

Two GSB officers are working with the Hydrocarbon Unit (HCU) on deputation.

#### **ISSUANCE OF CLEARANCE CERTIFICATE**

Under "*Besharkari Abashik Prakarper Bhumi Unnayan Bidhimala-2004*" GSB issued 26 clearance certificates on geological position of the project area to the land developers working in the Detailed Area Plan (DAP) of Dhaka.

#### **SEMINAR / WORKSHOP**

- i. A seminar entitled "Tectonics of the Indian Plate from GPS based Space Geodetic Studies" was organized by GSB on October 22, 2010. Dr. Paramesh Banerjee from Earth Observatory of Singapore, Nanyang Technological University of Singapore delivered the lecture.
- ii. GSB, Norwegian Geo-technical Institute (NGI) and ADPC (Asian Disaster Preparedness Centre) jointly organized an International Workshop on "2<sup>nd</sup> Regional Meeting of Asian Program for Regional Capacity Enhancement for Landslide Impact Mitigation (RECLAIM)" during December 1-3, 2010 in Dhaka. Fifty five participants including 20 from abroad attended the meeting. Twenty three papers on early warning system were presented at the meeting.
- iii. Dr. Anup Rej a Norwegian scientist delivered a lecture on "Timelessness in Time: A Journey Through a Designed Universe" on January 17, 2011.
- iv. A seminar on "Role of Geological Survey of Bangladesh in the Delimitation of the Maritime Boundary" was arranged at GSB auditorium on May 10, 2011. Dr. Sirajur Rahman Khan, Director of GSB delivered the lecture. Dr. Tawfiq-e-Elahi Chowdhury, Advisor to the Hon'ble Prime Minister, Brig. General (Retd.) Muhammad Enamul Huq, Hon' State Minister for Power, Energy and Mineral Resources, and Mr. Mohammad Mejbahuddin, Secretary, Energy and Mineral Resources Division were present at the seminar among others.



- v. A national seminar on "Bangladesh Coast: Geology, Hazards and Resources" was organized during May 29-30, 2011 in GSB auditorium under the auspices of the "Geological Exploration for Mineral Resources and Identification of Vulnerable Areas to Natural Hazards in the Coastal Parts of Bangladesh" project. About 120 participants, including from different academic, research and other institutions, attended the seminar. Fourteen papers were presented at the

seminar by the scientists working in the project.



#### **TRAINING PROGRAMME IN GSB**

A 3-day training programme was arranged in GSB for the newly recruited 63 staff of the department during November 1-3, 2010. Director General distributed certificates among the participants at the end of the course.



#### **LOCAL TRAINING**

Eight officers took training at National Academy for Training and Development (NAPD) on i) Project Feasibility Study, ii) Project Planning, Development and Management iii) Procurement Management, iv) Development Project, Monitoring and Evaluation, v) Leadership and Strategic Planning, vi) Financial Management, vii) Management Skills for Project Executives courses. Four officers attended training courses on i) 6<sup>th</sup> Course on Information Technology and E-governance, ii) 11<sup>th</sup> Human Resource Planning Course, iii) 12<sup>th</sup> Disaster Management Course, iv) 12<sup>th</sup> Environmental Management and Sustainable Development at Bangladesh Public Administration Training Center (BPATC). Four officers participated training courses at Regional Bangladesh Public Administration Training Center (RPATC) on i) Modern Office Management Course, ii) Seminar on Medium-term Budgetary Framework (MTBF), iii) Training Course on Rights to Information, iv) Environmental Development and Disaster Management Course. One officer took training at the Department of Woman Affairs on Statistical Data Analysis.

#### **FOREIGN VISIT/ TRAINING**

Mrs. Moonira Akhtar Chowdhury, Director General, attended a 5-day course during February, 2011 in Canada. She and Mr. R. M. Ekram Ali, Director paid a visit to Norway during June 12-18, 2011.

Mr. Md. Ali Akbar and Mr. Syed Nazrul Islam, Deputy Directors (Geology) left Dhaka for Iceland in March, 2011 to attend a 6-month course on Reservoir Engineering under Geothermal Training Programme at the United Nations University.

Mr. Md. Ershadul Haque, Deputy Director (Geophysics), Mr. Md. Wahiduzzaman, Senior Geophysical Engineer (CC), Mr. Md. Shahjahan, Deputy Director (Geophysics) and Mr. Mohammad Zahiruddin, Assistant Director (Geophysics) left for San Jose, California, USA for a training course on "Operational Training on Geophysical Products (June 20-July 04, 2011)".

Mr. K.A.H.M. Saifur Rahman, Deputy Director (Geophysics) and Mr. Selim Reza, Assistant Director (Geophysics) left for Beijing, China to attend a training course on "Elements of the Seismic Monitoring Technique for Developing Countries (June 09-29, 2011)".

#### **RECRUITMENT**

Sixty three personnel were recruited in different posts of class III and class IV categories in October, 2010 in the Revenue setup of the department. Besides these, recruitment of 48 personnel of which 41 in class I category and 7 in class II category is under process through Bangladesh Public Service Commission.

#### **PROMOTION**

Mr. Fuaduzzaman Khan and Mr. Nizam Uddin Ahmed and Mrs. Jyotsna Begum were promoted to the posts of Director (Geology), Director (Geophysics) and Assistant Chief respectively.

#### **RETIREMENT**

Mr. K.M. Abul Khair, Deputy Director (Drilling Engineering), Mrs. Salma Begum, Director (Geophysics) and Mr. Md. Mahub Hossain, Administrative Officer retired from GSB on February 24, March 9, and April 15, 2011 respectively.

#### **OBITUARY**

Mr. Md. Saiful Islam, Driver (Grade-3) died on February 20, 2011 at the age of 45 years (Innalillahi.....Rajeun). He joined the GSB on February 28, 1990.

#### **Chief Adviser**

Director General

#### **Editorial Committee**

Dr. A. K. M. Khorshed Alam, Director  
Nasima Begum, Deputy Director  
Animesh Talukder, Assistant Director