

Research Activities

Monitoring Pre-monsoon Water Level in the Northeastern Region of Bangladesh Using Satellite Data

Northeastern region of Bangladesh is located just lower part of the highest rainfall areas in the

In the current year normal level of rainfall was recorded during the pre-monsoon season in the northeastern Bangladesh and India and no unusual waterlogging was noticed in this year (Fig. 1). In contrast, a heavy rains over an 8-day span from the 12th to 20th April 2004 brought widespread flooding to the Sylhet region in northeastern Bangladesh as the Surma and the Kushiara rivers crested above flood stage

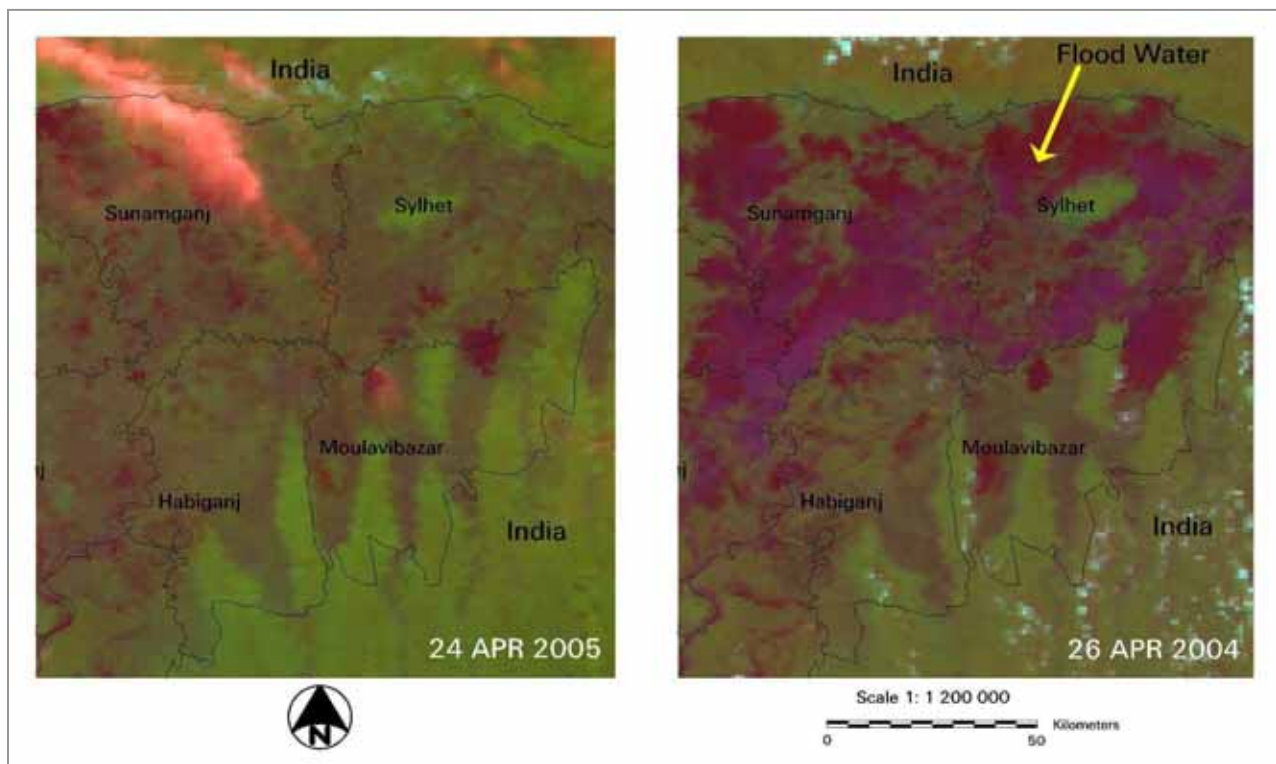


Fig. 1: NOAA AVHRR image showing the pre-monsoon water level in the northeastern Bangladesh

world. Physiographically this part is a depressed area having elevation less than 10 meters of the mean-sea level. Southern part of this area extended towards the Bay of Bengal is again elevated and thereby created a low laying pocket. As a result, whenever there is an excessive rainfall in the upper basin, flooding is a common phenomenon in this area. The objective of the current study is to monitor the pre-monsoon flooding level in that area during the recent years.

(Fig. 1). Concurrently, study of Tropical Rainfall Measuring Mission (TRMM) data shows that more than 500 mm of rain (darkest red areas) fell over the Khasi-Jaintia hills, foothills of the Himalayan Mountains, in the northeastern Indian provinces of Assam and Meghalaya (Fig. 2) during the same period of time. Such heavy rainfall this time of the year is unusual as the typical rainy season runs from June to September.

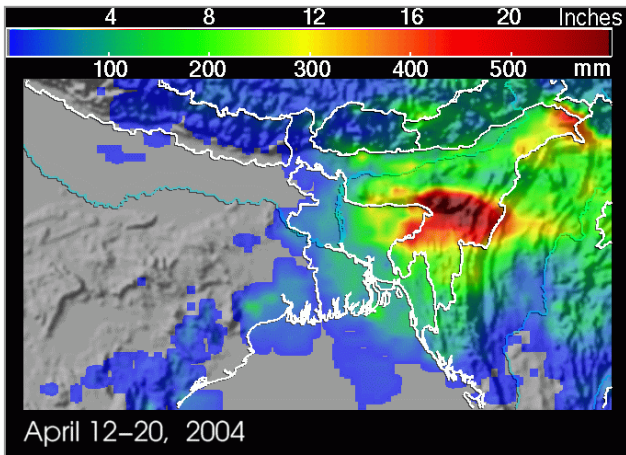


Fig. 2: Estimation of precipitation using TRMM data over North-eastern Bangladesh and India. (Courtesy: NASA Goddard Space Flight Center)

Onset of Monsoon 2005

The onset of monsoon over Bangladesh is heralded by increased cloudiness over South of Arabian Sea, South of Bay of Bengal and low level cross equatorial flow from the South Indian Ocean. Frequently, the monsoon onset is associated with the formation of a tropical vortex in the Bay of Bengal and the Arabian Sea. The large scale east-west oriented cloud band over South Arabian Sea is also a typical feature associated with monsoon onset.

In order to identify the onset of monsoon 2005, NOAA-AVHRR image (Fig. 3) was closely monitored since 28 May and found that it was delayed for about two-weeks. This is due to the persistence of high-pressure zone over northern Myanmar, strong westerly jet stream over the northern India and a weak easterly jet stream over much southward than the normal position during the beginning of June.

Due to delay of monsoon Bangladesh received about 24% less rainfall during June in compare with the normal precipitation. Temperature was also above normal position throughout the country during this month. A false colour composite combining band 1 2 4 was used for

visual interpretation. In the onset colour image cloud appears to be whitish to reddish colour depending upon the temperature.

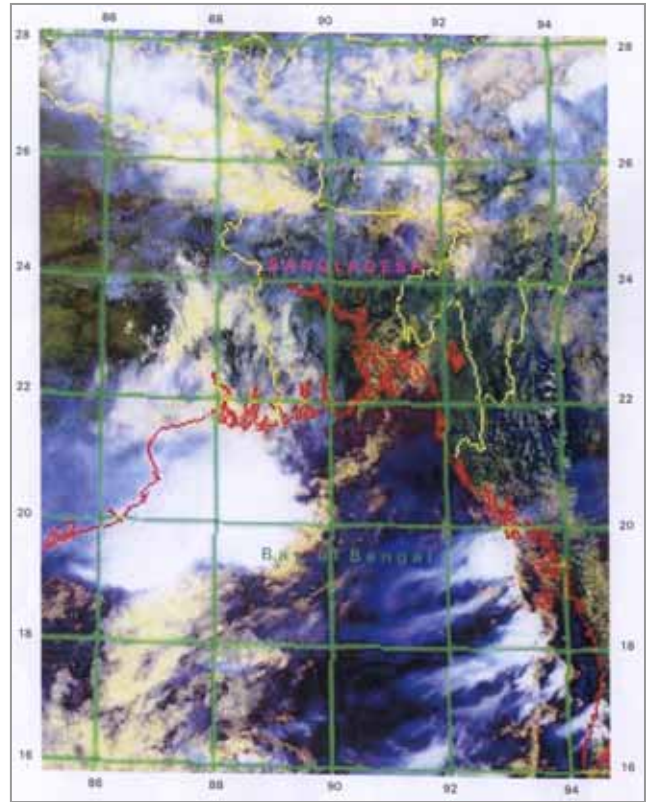


Fig. 3: Onset of monsoon cloud feature on the 20 June 2005 over Bangladesh and the surrounding areas.

Modelling Regional Climate Change

A climate change sub-project has been initiated by the Department of Environment (DoE) and Ministry of Food and Disaster Management (MFDM). The sub-project will build capacity to coordinate and integrate climate change issues among Government and its inter-mainstream by establishing a Climate Change Cell (CCC). SPARSSO is a partner institute of this sub-project.

Providing REgional Climates for Impacts Studies (PRECIS) is a regional climate change modeling system developed by the Hadley Center, United Kingdom. The model can be easily applied at the local and regional prediction

of the climate changes. With a view to smooth implementation of the project, SPARRSO has installed the model in its laboratory. The aims of this programme are:

- to predict climate change in Bangladesh using PRECIS climate modelling system,
- to publish and disseminate the climate change information to the society in order to create awareness,
- to disseminate the knowledge and awareness on climate change and its mitigation strategy among the officials of different Ministries and Sectors of the People's Republic of Bangladesh, and
- to publicize the data and information from the climate change model for public and various relevant organizations.

SPARRSO News

Delegation from the Secretariat of AP-MCSTA Visited SPARRSO



On April 20th, 2005 the delegation from the Secretariat of AP-MCSTA headed by Mr. Wang Keran, the Deputy Secretary General of the Secretariat of AP-MCSTA, visited the Ground Station of the Bangladesh Space Research and Remote Sensing Organization (SPARRSO) in

Savar, Bangladesh, accompanied by Mr. Abdul Halim Howlader, Chairman (In-charge), SPARRSO (right) and Mr. A.Z.Md. Zahedul Islam, Senior Scientific Officer, SPARRSO (left).

Obituary

A condolence meeting was held at SPARRSO auditorium on 25th June 2005 to mourn the untimely death of Mr. Abdul Hoque, Driver of SPARRSO. Mr. Abdul Hoque passed away on 12th June 2005. He joined SPARRSO in 09th December 1986. He left behind two sons and a daughter, the widow and a host of friends and colleagues. The meeting expressed deep shock at the death of a very sincere, amiable and honest employee of SPARRSO. The meeting also extended a message of condolence to the bereaved family and prayed for the eternal peace of the departed soul.



Photograph of Late Abdul Hoque

Visitor(s) to SPARRSO

Fighter Controller Training Unit (FCTU), Bangladesh Air Force, Dhaka Cantonment, Dhaka to acquire practical knowledge about SPARRSO and its activities for national development - 1 (one) Instructor and 6 (six) Trainee Officers on 27 April 2005.

Security Intelligence School, Bangladesh Air Force, Dhaka Cantonment, Dhaka to acquire

practical knowledge on use of satellite image for map preparation - 22 (twenty two) officers on 05 June 2005.

Department of Soil Science, Bangladesh Agricultural University, Mymensingh to get knowledge on application of remote sensing in soil science - one (1) Teacher and 15 (fifteen) students on 7 June 2005.

Seminars at SPARRSO

Dr. Mahmudur Rahman, Scientific Officer, SPARRSO presented a Seminar on “Estimating Carbon Pool and Carbon Release Due to Tropical Deforestation Using High-resolution Satellite Data” at SPARRSO auditorium on the 2nd June 2005. This research work was done at Dresden University of Technology, Germany under a Ph.D. program. Chairman of SPARRSO inaugurated the Seminar and chaired the session. Scientists, Engineers and other officials were present in the seminar.

Dr. Fazlay S. Faruque, GIS Manager, University of Mississippi Medical Center, presented a Seminar on “Application of GIS in Public Health” at SPARRSO Committee Room on the 13th June 2005. Chairman of SPARRSO presided over the function. Scientists, Engineers and other officials were present in the occasion.

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Participation in training/ seminar/ conference

Mr. Shafiuddin Sarkar, PSO, participated in the Seminar on "Weather Forecasting for Operation Meteorology" from 15 April - 5 May 2005, Seoul, Korea.

Mr. Md. Atiar Rahman, PSO, participated in the seminar on "Product and Demonstration of TOPCON Surveying Instruments, GPS & Software" - Organized by TOPCON South Asia Pte. Ltd. Singapore & ENTECH Logistics Ltd., Hotel Razmoni, Dhaka on 17 April 2005, Dhaka.

Mr. Mesbah Uddin Ahmed, Hon'ble Secretary, Ministry of Defence and Mr. Abdul Halim Howlader, Chairman (In-charge) of SPARRSO participated in the first Expert Group Meeting on Future Plan (EGMFP-I) Space Activities and Development relating to the Asia-Pacific Space Cooperation Organization (APSCO) from 26 - 28 April 2005, Bangkok, Thailand.

Md. Fazlul Haque, SSO and Md. Abdus Salam, SO, participated in the training workshop on “Bangladesh Country Almanac (BCA): A User Friendly GIS Tools for Agricultural and Natural Resource Management” from 18 to 19 May 2005 at BARC, Farm gate, Dhaka, Bangladesh.

SPARRSO Internal Publication Committee:

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The SPARRSO Newsletter is published quarterly. We welcome comments, questions and suggestions from our valued readers.