

Research / Mapping Activities

Post-monsoon Flood Monitoring in the North-western Bangladesh

Dozens of villages were inundated when rain water pushed the rivers of northwestern Bangladesh over their banks in early October 2005. The Moderate Resolution Imaging Spectroradiometer (MODIS) on NASA's Terra satellite captured the image of the flooded Ghaghat and Atrai Rivers on October 12, 2005. The deep blue colour in the image indicates flood extent over the area with scattered cloud mass in bluish white. Figure 1 shows pre and post-monsoon MODIS images that can be suitably used to identify the flooded area and damage assessment.

Validation of PRECIS Regional Climate Model in Bangladesh

The validation of PRECIS (Climate Change Regional Model) in Bangladesh has been recently done using the rainfall and temperature data recorded by the observatory of Bangladesh Meteorological Department during 1961-1990. In Bangladesh the annual distribution of rainfall is usually concentrated 2% in winter (December – February), 20% in pre-monsoon (March-May), 62% in Monsoon (June – September) and 16% in post-monsoon (October – November).

The validation was done using the gridded method; the grid size was 50X50 km². In this method observed data were collected in twenty-six stations. The country was divided into four regions and the regional values of precipitation and temperature were calculated both from the

model and the observed data. Validation analysis was performed monthly, seasonally and annually starting from 1961 to 1990. It is found that there is no difference between the observed and predicted data. Consequently the PRECIS model could be used for the prediction of rainfall and temperature measurement in Bangladesh.

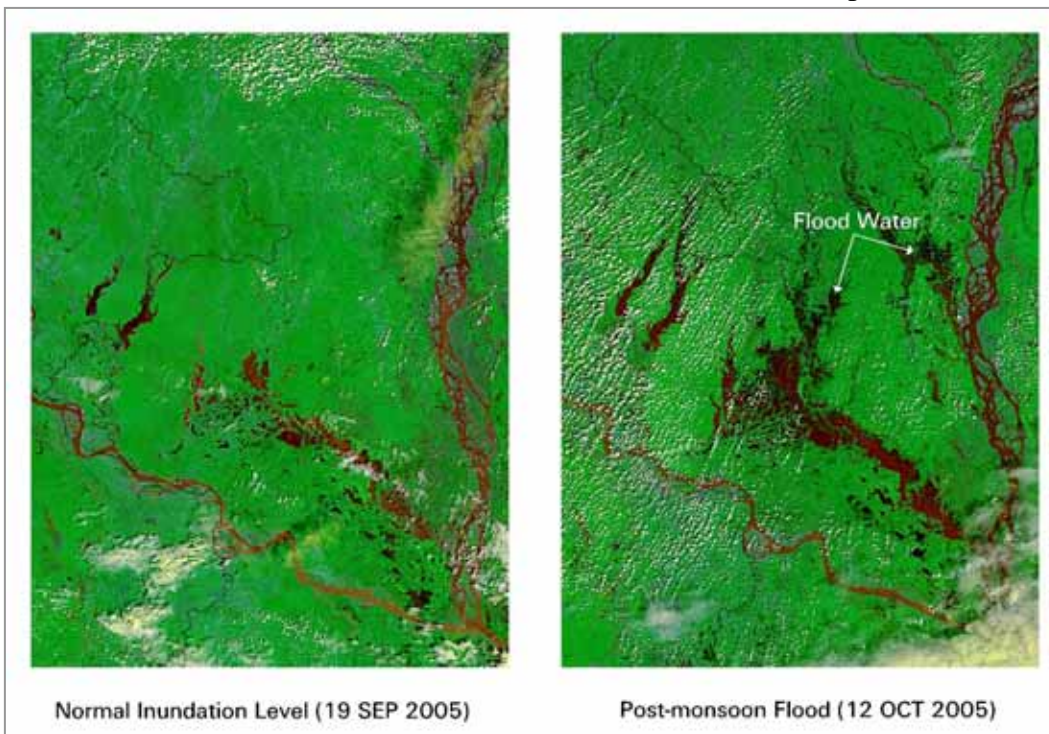


Fig. 1: Post-monsoon flood monitoring using Terra MODIS image

SPARRSO Mapped the Gas Transmission Pipeline Corridor Area for GTCL

of Bengal. According to the study a total of 453 species of birds, 42 species of mammals, 35 reptiles and 8 amphibian species of fauna are

reported in the coastal zone. 301 species of molluscs and over 50 species of commercially important crustaceans were also recorded in the coastal zone and the Bay of Bengal.

The endangered species include 5 mammals, 25 birds, 14 reptiles (one crocodile, eight turtles, four lizards and one snake) and 2 amphibians (frogs). The marine water of Bangladesh thrives 475 species of fish. At least 100 molluscs from 151 genera have also been identified in the Bay of Bengal.

In addition, 3 lobsters and 7 species of turtles and tortoises, 168 species of seaweeds, 3 sponges, 16 crabs, 3 lobsters, 10 frogs, 3 crocodiles, 24 snakes, 3 otters, 1 porcupine, 9 dolphins and 3 species of whale are also found. Among the marine and migratory species of animals, 4 fishes, 5 reptiles, 6 birds and 3 mammals are threatened.

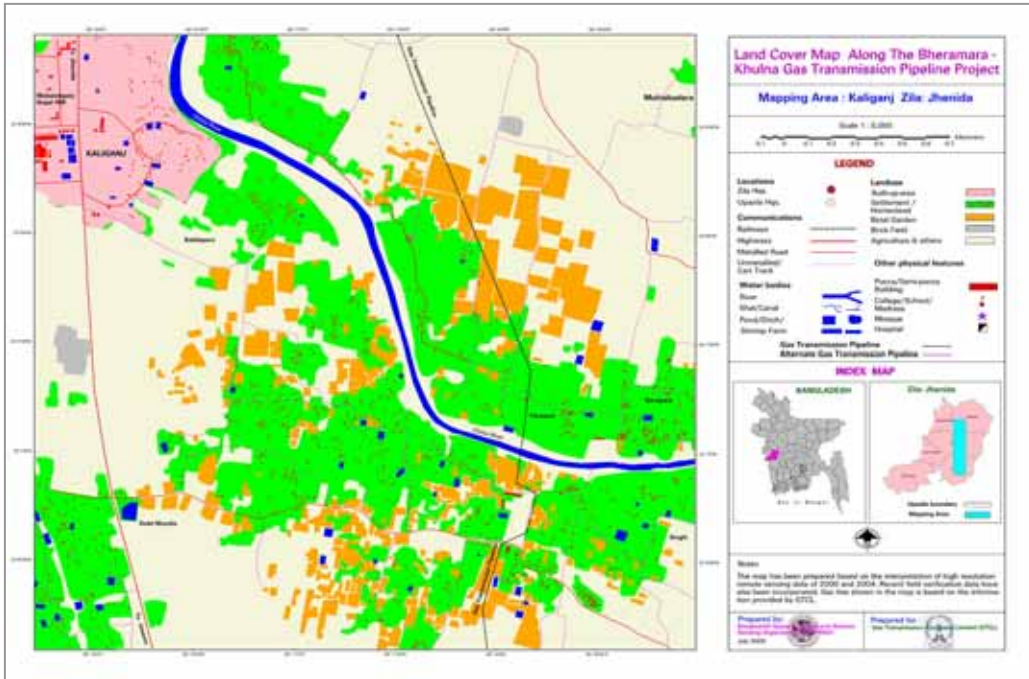


Fig.2: Land cover map of Jhenida Area (Part)

SPARRSO prepared a digital land cover/landuse map of “Bheramara – Khulna Gas Pipeline Project” area for the Gas Transmission Company Limited (GTCL), an enterprise of the Petrobangla. The mapping area covered the districts of Kushtia, Jhenida, Jessore and Khulna.

The map shows the pipeline approaching pocket area passing through the districts. The map was delivered both in hard and soft copy. The information provided in the map will act as a planning tool for successful implementation of the project with minimum cost and environmental disturbances.

Biodiversity Assessment of the Coastal and Marine Ecosystems

The study on “Coastal and Marine Biodiversity of Bangladesh (Bay of Bengal)” was undertaken by SPARRSO. It shows the status of biodiversity in the coastal region of Bangladesh and the Bay

Bangladesh Signed APSCO Convention



Fig.3: APSCO Convention Signing Ceremony

On October 28 2005, Asia-Pacific Space Cooperation Organization (APSCO) convention was signed in Beijing, China. Chinese Vice Premier Huang Ju presided over the ceremony. Bangladesh, China, Indonesia, Iran, Mongolia, Pakistan, Peru and Thailand signed the convention as member countries. Minister Zhang Yunchuan of COSTIND signed the convention on Chinese behalf. Mr. Ashfaqur Rahman, Bangladesh Ambassador to China signed the convention on behalf of Bangladesh. Mr. Aziz Hassan, Joint Secretary, Ministry of Defence was present in the Signing Ceremony in Beijing.

According to the convention, there should be at least five countries in the Asia Pacific region who ratify this convention prior to its enter into force. By then, the APSCO shall be officially established. The signing of convention is the key step to APSCO establishment, marking the substantial step of AP-MCSTA to its institutionalization process.

APSCO is a regional intergovernmental organization. The headquarter will be established in Beijing. The objective of APSCO is to

promote space science, space technology and space application among the countries and upgrading space capacity and promoting national economy development through assisting member countries in technology development, application and human resource training programs. It is to make its due contribution to the prosperity of Asia Pacific region and the peaceful use of outer space as a whole.

APSCO cooperative projects include earth observation, disaster management, environmental protection, satellite telecommunication and satellite navigation. Other areas are space science research, space science and technology education and training.

Space Cooperation among Asia Pacific nations not only conducive to reciprocal understanding and trust, but also help resolving national prominent issues through space technology and its application in resource management, disaster monitoring, telecommunication and navigations, which provide input to national economy development and social progress.

Defence Secretary Visited Savar Ground Station

Mr. Mesbah Uddin Ahmed, Hon'ble Secretary, Ministry of Defence visited Savar Ground Receiving Station of Bangladesh Space Research and Remote Sensing Organization (SPARRSO), Dhaka on the 10th December 2005. Mr. Abdul Halim Howlader, Chairman (In-charge) and other senior scientists of SPARRSO accompanied him. The Secretary hold a meeting with the chairman and senior officers of SPARRSO. He proposed a mechanism for the development of the Ground Station and its fruitful use towards greater national interest.

SPARRSO Scientist Attended a Youth Summit on Climate Change

“A Youth Summit on Climate Change and its Impact on Cities” was held from 20-25 November, 2005 in Bern, Switzerland. British Council with several other organizations, such as British Embassy at Bern, National Oceanography Centre at the University of Southampton, BBC, and NCCR Climate has organized the summit gathering. Around fifty young scientists from Bangladesh, Switzerland, UK and USA attended the summit. The objective of the summit was to discuss the impact of climate change on the cities and the probable remedial measure we should initiate and to bring a networking among the young scientists working in climate change. Dr. Mahmudur Rahman, a scientist from SPARRSO and other two Bangladeshi participants attended the summit. Intensive discussion resulted in publication of the group’s consensus in the “Berne–Manifesto”. This manifesto comprises of the outline of novel long-term contracts between governments and concerned bodies for reducing carbon emissions. Representative cities (Los Angeles, London, Berne and Chittagong) served as case studies to develop specific action plans, emphasising the areas of energy use, water supply, extreme events like flooding, heat waves, and global sea-level rise. Climate induced changes relating to these cities were presented in the unusual format of a television news in Bern, Switzerland.

Presentation

PCI Geomatica Software

Mr. Saikat Banerjee and Mr. Chirandip Chand (PCI Software Limited, India, Exclusive Master Reseller – South Asia) have visited SPARRSO on the 26th October 2005. They made a presentation on “**PCI Geomatica Toolbar V9.1.7**” and showed its capabilities through an efficiently integrated work environment that

provided the latest development in Remote Sensing and GIS technology.

ARC GIS Software

Mr. Abdul Hadi, Local Representative, ERDAS India Pvt. Ltd. visited SPARRSO on the 8th December 2005. He made a presentation on “**ARC GIS Software**” which reflected the latest development of its applicability in the field of remote sensing, photogrammetry and cartographic activities.

Participation in Training/ Seminar/ Conference

Mr. Abdul Halim Howlader, Chairman (In-Charge), SPARRSO participated in the conference on “Twelve Asia-Pacific Space Agency Forum (APSAF-12)”, held at Kitakyusyu, Japan from 11-13 October, 2005.

Mr. Md. Atiar Rahman, PSO and Mr. Md. Abul Kalam, PSO, participated in the seminars on “User Conference 2005 of Institute of Water Modeling (IWM)” held at BIAM Auditorium, Dhaka on 06 December, 2005.

Mr. Md. Abul Kalam, PSO, attended the International Seminar on “Environmental Monitoring Information Network for Water Resources (EMIN)”, at BRAC Centre Auditorium, Dhaka on 23 November, 2005.

Mr. Mozammel Haque Sarker, SE, attended 10-years Commemoration Function of CSSTE-AP on the 8th November, 2005 held at New Delhi, India.

Dr. Mahmudur Rahman, SO attended the “Young Scientists’ Summit on Climate Change and its Impact on Cities,” 20-25 November, 2005, Switzerland.

Dr. M.A. Shahid, PSO, participated in the seminar on “Water Resources Management and

Flood Control in Bangladesh”, organized by Franch-Bangladesh Association of Scholars and Trainees (FBAST), Dhaka on 25, December 2005.

**Research Publications, Reports, Popular
Articles**

Howlader, A.H. – “Exploitation of Space Benefit for Environment, Disaster Management and Socio-economic Development in Bangladesh” – Presented a paper at the Twelve Conference of Asia-Pacific Space Application Forum-12 (APSAF-12), held at Kitakyusyu, Japan from 11-13 October, 2005.

Sarkar, M.H. – “Characterization of the Growth of Rabi Crops and Boro Rice in the Context of Bangladesh Based on NOAA-AVHRR Data” – A dissertation prepared for M. Tech Degree from the Faculty of Engineering, Andhra University, India, 2005.

Rahman, M. M. - “Estimation of Carbon Pool and Carbon Release from Tropical Deforestation using High-resolution Satellite Data” – A paper presented at the Department of Geography and Environmental Sciences, Jahangirnagar University, Savar, Dhaka on the 25th December 2005.

Address for correspondence:

Convenor

Internal Publication Committee
Bangladesh Space Research and
Remote Sensing Organization (SPARRSO)
Sher-e-Bangla Nagar, Agargaon
Dhaka-1207, Bangladesh
Telephone: 880-2-914 1625, 913 1741
Fax: : 880-2- 811 3080
E-mail : admin@sparrso.gov.bd
Website : www.sparrso.gov.bd

SPARRSO Internal Publication Committee:

Mr. Md. Atiar Rahman	PSO	Convenor
Dr. Jinnahatul Islam	PSO	Member
Mrs. Mehrunnessa	PSO	Member
Dr. Mahmudur Rahman	SO	Member

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