

The World Environment Day, observed on 5th June, was marked by EGIS and many other organizations by opening information dissemination stalls at the Osmani Memorial Centre, Dhaka. The EGIS theme for this year was 'Maintaining the environmental balance through the use of quality technology.'

Like that of the other organizations participating in the event, the purpose of EGIS was to take the opportunity to raise public awareness on the various threats to the environment, the importance of protecting the environment, the practical means to do so, and the current efforts addressing the issue. The occasion also provided EGIS with the opportunity to disseminate information on EGIS activities related to the water sector to a wider range of the public.

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New prediction method for the morphological changes of the Jamuna River

Based on its experience through FAP 19 and 16, EGIS is developing a River Morphology Information System (RMIS) using mainly satellite imagery and its expertise in the field of river morphology. As part of this long-term program, EGIS recently carried out a research work to improve the existing prediction method for the morphological changes of the Jamuna River. With the use of recent satellite images, this work re-derived the methods based on channel network analysis. One of the remarkable achievements of this research has been the development of a new prediction method. EGIS is probably the first to develop such a method that predicts one year ahead the morphological changes of a highly dynamic river like the Jamuna on the basis of the shape of its

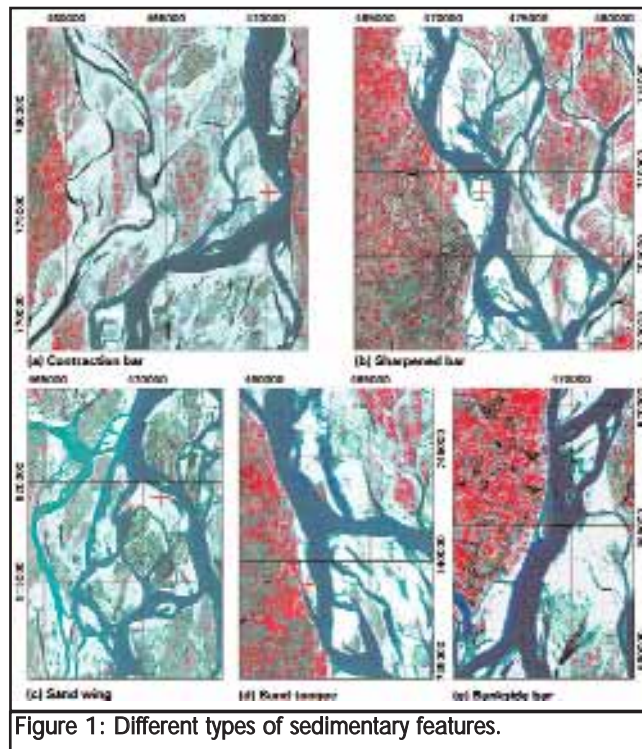


Figure 1: Different types of sedimentary features.

sedimentary features observed in the dry season satellite images. In this method, the different shapes of the sedimentary features are recognized, the presence of which have significance in predicting the different morphological aspects of the Jamuna River. These features are referred to as contraction bar, sharpened bar, sand wing, sand tongue and bankside bar (see Figure 1), most of which are characterized by pointed edges. For the improvement of the prediction, all data extracted from the images were separated based on the presence of sedimentary features. A comparative result of the prediction on the different morphological aspects based on the presence of sedimentary features is presented in Table 1.

(cont. next page...)

Editor's Note

The first issue of the EGIS newsletter elicited many comments and suggestions that have greatly helped in compiling this second issue. The comments, most of which have been possible to incorporate, have touched matters ranging from choice of news items to layout and design. The focus of this issue is more on very recent developments in EGIS' field of activities than just general information on environment and GIS as a whole. Hopefully, this issue will sustain the interest shown so far in the newsletter to help us further develop it into a rich information source on the activities of EGIS.

Workshop on Improvement of prediction methods

A workshop was held on 7 May, 2001 at the EGIS premises to disseminate findings and obtain feedback on the research output on 'improvement of prediction methods for the morphological changes in the Jamuna River'. The participants of the workshop, representing EGIS, BWDB, SWMC, WARPO and FAP 21/22, recommended validation of the improved method. They called for more emphasis on explaining the physical processes of improving the method, and recommended that more studies of this type be carried out for the other major rivers of Bangladesh.



Almost in all cases, the presence of sedimentary features is found to reduce both the scatter of data and range of uncertainty in prediction. The presence of relevant sedimentary features thus makes better prediction possible.

A part of the Jamuna River is presented in Figure 2 as an example of predicting the planform for 2002 on dry season satellite images of 2001. All the tools for predicting the morphological aspects as presented in Table 1 were applied during the prediction. It is a significant achievement to be able to predict the morphological changes of the Jamuna with such little effort as only using dry season satellite images.

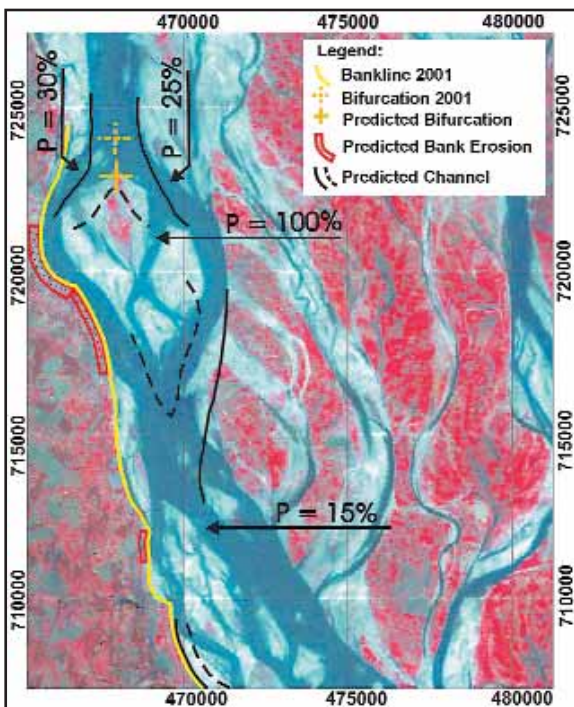


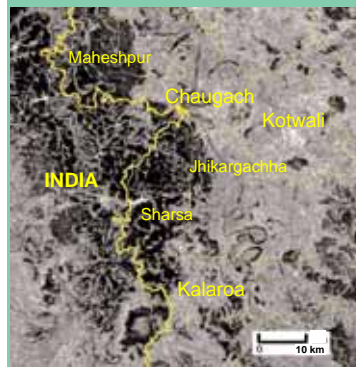
Figure 2: Morphological prediction for 2002 with regard to the Jamuna River based on 2001 image.

Table 1: Prediction of different morphological aspects in Jamuna based on the presence of sedimentary features

Presence of sedimentary features	Channel migration (m/y)		Probability of Channel Abandonment (P is probability and ϕ is deviation angle)	Bank erosion rate along curved bend (m/y)		Bank erosion rate along straight reach (m/y)		Bifurcation migration (m/y)	
	Avg. Value	Range		Avg. Value	Range	Avg. Value	Range	Avg. Value	Range
Yes	950	100 to 4000	P=0 for $\phi > 10^\circ$ P=1 for $\phi < 65^\circ$	225	70 to 450	215	90 to 490	1200	200 to 3000
No	---	---	P=0 for $\phi > 20^\circ$ P=1 for $\phi < 110^\circ$	125	0 to 450	---	---	670	-2200 to 3000

EGIS' Role in Satellite Image Data Distribution

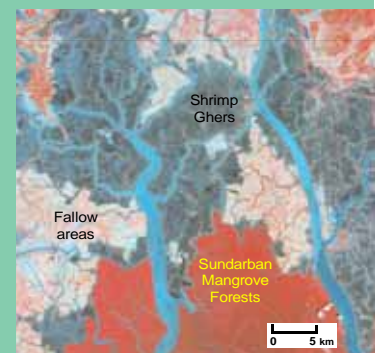
Over the last decade, EGIS has developed expertise in hardware and software for digital image processing, GIS analysis, digital spatial database building, GIS modelling, differential GPS surveys and metadatabases. EGIS strives to introduce new and improved data sources, e.g. Synthetic Aperture Radar (SAR) and high resolution optical imagery, and develop applications and outputs that are of practical use for mapping, monitoring and managing the natural resources in Bangladesh. In this connection, contacts have been developed through research and applications projects with a number of leading international agencies providing Earth Observation Satellite image data worldwide. The successful application of many satellite image data products from these sources have helped EGIS in becoming their authorized distributor in Bangladesh. EGIS supports image selection, ordering and processing e.g., image georeferencing, enhancement, image mosaic, conversion to users' required format, and hardcopy printing of image maps. It is the authorised distributor of the US-based agency Space Imaging Inc. See page 4 for IKONOS image.



RSI, Canada is one of the contact agencies of EGIS that provide Earth observation satellite data. Their product line features RADARSAT-1, the world's first radar remote sensing satellite program entirely dedicated to operational applications.

RADARSAT ScanSAR Wide image of the southwest region, acquired through dense cloud cover. The image shows open water flooding in dark gray colours during the flood of 2000.

NRSA, India has its own ground station to acquire data from its RS satellites, e.g., IRS-1C, IRS-1D and IRS-P4 and from foreign satellites like Landsat, NOAA, ERS etc. IRS provides images used in Bangladesh for a large number of applications i.e., mapping of river networks, water bodies, settlements, infrastructure, and crops.

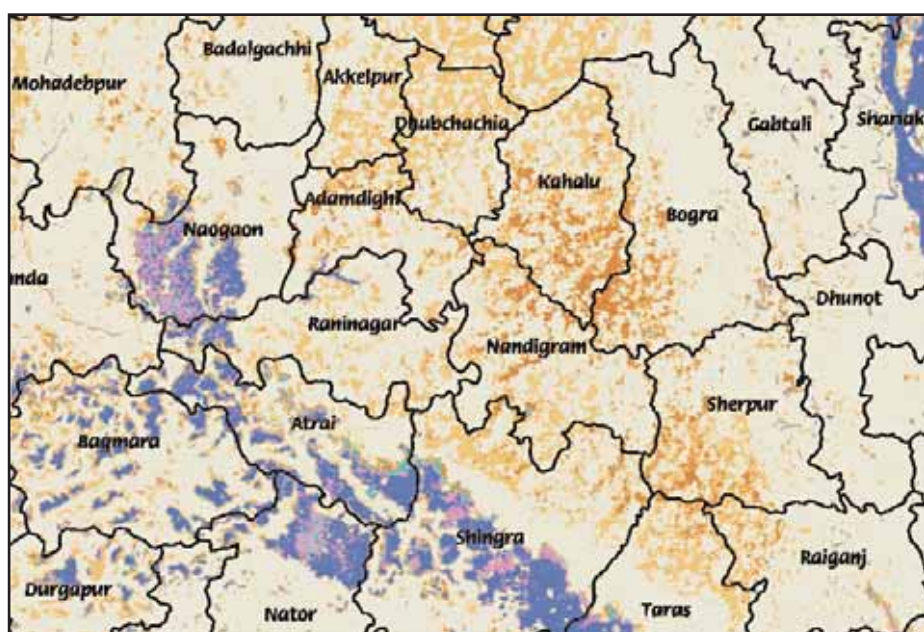


IRS LISS III image, resolution 24m x 24m, showing different types of landuse in the Khulna region, April 2001.

EGIS' Support to Flood Monitoring

Annual flooding - a serious concern: The impact of annual monsoon flooding on the environmental and socio-economic conditions and developments in Bangladesh is so significant that it is of high concern to all management agencies dealing with the different aspects of flood management and their impacts. This relates not only to agencies involved in the prediction and mitigation of floods, but also to planning agencies covering such issues as land use zoning, agricultural production and crop diversification, infrastructure development, navigation and fisheries.

EGIS' initiative: During the monsoon of 2000 EGIS launched an initiative to monitor the flood events, and to set up and test a monitoring scheme that could be used in the coming years. The pilot study relied on five RADARSAT SAR images, each covering almost the whole country and collected at different stages of the flooding sequence. It also used ground truth information, and hydro-meteorological data collected by EGIS, and FFWC/BWDB, respectively. Using these data, maps on flood extent, depth and damages were prepared from the images, which had high to moderate degree of agreement with the actual ground conditions. The damage maps were especially helpful during the unprecedented flood in the southwest region of the country in September-October, and used by government and donor agencies to assess the flood damages to crops.



LEGEND

	Open water duration of 1 - 23 days
	Open water duration of 24 - 47 days
	Open water duration of 48 - 71 days
	Open water duration of 72 - 95 days
	Open water duration of more than 95 days
	Areas without open water on all imaging dates

Figure 3: Flood (open water) duration map derived from RADARSAT SWB images of 20 July, 13 August, 6 & 30 September, and 25 October, 2000.

Implications of the initiative: The study improved the usefulness of integrating remote sensing and hydro-meteorological data to describe flood and its dynamics, i.e., source, duration and movement in the floodplains. It also demonstrated that flood monitoring serves three main purposes, which are to 1) recognize emergency situations from day to day monitoring; 2) assess potential impacts to set priorities in relief operations; and to 3) document and analyze flood events and their impacts to improve flood and floodplain management. These three purposes have different clients, require different approaches and information, and are all based on day to day observations of the developments in flood situations.

Day to day monitoring of flood-occurrence is aimed at identifying emergency situations and support possible relief operations at the Near Real Time mode. Under this monitoring system a brief emergency report would be produced describing the distribution and severity within 3 days of occurrence of any disastrous flood. Information on flood extent derived from radar images and observed water levels would be also included in the report. Moreover, a document would be produced with an analysis on exposure and potential damage

by overlaying land use, population density and information on agricultural practices to set priorities for possible relief operations. After every monsoon period, a comprehensive documentation would be produced to archive information on flood and its impacts on the floodplains for the purpose of flood management during both disaster and normal periods. The impact/damage of floods would be assessed in terms of yield reduction, people displaced, damage to infrastructure, etc.

The application of remote sensing in flood monitoring is a tested technology and is ideal for flood monitoring purposes. To make this monitoring scheme more effective coordinated efforts are required between organizations dealing with flood management and disaster mitigation. Such joint collaborations are necessary not only to avoid duplication of work, but also to share the cost of the program. EGIS therefore, has taken the initiative to make an arrangement with FFWC, BWDB, SWMC, and DMB for such a collaboration. The joint forces are to be coordinated by the Ministry of Water Resources or the Ministry of Relief and Rehabilitation.

Consultation Sessions on GRRP: During the last week of April 2001, EGIS organized four consultation sessions at different locations within the Gorai River Restoration Project (GRRP) area to obtain feedback on its recently completed Environmental Impact Assessment (EIA) of GRRP. These sessions were also used to elicit information, opinions and suggestions relating to the Social Impact Assessment (SIA) of the GRRP that EGIS is currently conducting. The locations (Kushtia, Magura, Narail and Khulna) were so chosen as to represent, to the extent possible, the physical and socio-economic diversity of the study area. To disseminate the results so far obtained from the study among local people, a document written in bangla was distributed among the potential participants along with a letter of invitation. A few hundred people of different occupations participated in each of these consultation sessions with a high degree of enthusiasm and generated extremely useful information on the study through group discussions facilitated by an EGIS multi-disciplinary team. The discussions were held on whether the

- ♦ issues considered were correct and adequate;
- ♦ impacts of alternative options were appropriately assessed;
- ♦ selection of the preferred option was correctly done; and
- ♦ environmental and social management plan was properly formulated.

The proceedings of the consultation sessions are being compiled by EGIS. The study team is also taking steps to enrich the relevant reports on GRRP by incorporating the valuable feedback received during the sessions.

IKONOS Satellite imagery: EGIS has acquired an IKONOS image of a part of Dhaka in order to explore its use in the urban planning of the city. (See page 6 for image).

IKONOS is the first commercial high-resolution imaging satellite launched on 24th September 1999 by the US based agency, Space Imaging Inc.. IKONOS acquires images from 680 km above ground at a maximum ground resolution of 1m X 1m. The higher resolution allows identifying and mapping small objects such as, trees, automobiles, and buildings that were lost previously in the blurred and coarser satellite imagery. Now, urban planners can easily and accurately identify land used for e.g., residential, agricultural, commercial and industrial purposes. Foresters can delineate forest stand boundaries, determine and code various features of a specific tree type, and calculate the volume potential of a forest stand. Telecommunications professionals can generate accurate building footprints and height information, along with infrastructure data for planning and maintaining cellular networks.

The importance and usefulness of IKONOS images lie in the fact that scientists can use such images to look at environmentally sensitive areas and predict trends, government officials can monitor and plan enlightened land use policies, while insurance companies can measure and map property damages after natural disasters.

EIA courses offered by EGIS: EGIS provides two courses on Environmental Impact Assessment (EIA), namely the EIA Practitioners' Course and the EIA Reviewers' Course designed for professionals who perform and review EIA especially in the water sector. The course contents cover the major steps of the EIA process that include project description, baseline development, scoping and bounding, impact assessment and environmental management planning. Lectures, simulations and fieldwork are integral parts of the course. Though designed for water sector projects, the courses are equally beneficial for the practitioners and reviewers of other sectors. In the 17-day Practitioners' Course, the participants are required to perform EIA in the field of a water sector project, and to produce a report in the end. The course devotes about 40% of the total time in lectures and class exercises, 30% in field work, 25% in report preparation and writing, and 5% in formal sessions. The EIA Reviewers' Course is a ten-day course designed for professionals who review and assess EIA documents using the water sector guidelines. About 60% of the course time is spent on practical exercises and fieldwork and 40% on lectures using the Bangladesh experience. In the last two days of the course, participants are required to review an EIA report on a proposed project. Manuals with all course materials, stationeries, lunch and tea are provided. Enrollment is limited to fifteen persons per course and the fee is Tk. 8,000 per person.

Table 2: Training Course Schedule for 2001 (July - December)

EGIS Training Courses in 2001	Duration (In days)	Period
Water Resources Planning and Management		
Integrated Water Resources Management (IWRM) course	10	August/September
Environmental Impact Assessment (EIA) Practitioners' course	17	September/October
Environmental Impact Assessment (EIA) Reviewers' course	10	November/December
Environmental Awareness program	1	July, August, September, November
Spatial Analysis and Database Training		
Arc/View	4	July, September, November
Arc/View Spatial analyst	5	August
ArcInfo with VBA	10	October/November
Fish-GIS course	7	July, December
Seminars and workshops		
GIS related workshop	2	July
EIA related workshop	2	July

Activity Update

Land type: The draft final report on "Application of modern tools in updating inundation land types in Bangladesh" is under preparation. Although the project came to an end in March 2001 as far as collaboration with BARC is concerned, the study results need to be field verified in the next monsoon season. It is also necessary to update the Digital Elevation Model (DEM) which is crucial for updating inundation land types in Bangladesh.

EIA of GRRP: The draft final report on the EIA of the Gorai River Restoration Project (GRRP) was issued in March 2001. Application has been sent to the Department of Environment (DOE) for the environmental clearance of the project.

Flood monitoring: Launched during the monsoon of 2000 and extended to another year, the pilot study analyzed and demonstrated the feasibility of an integrated flood monitoring program implementable on a routine basis. So far, only a first attempt has been made to integrate remote sensing and hydrological field information. In addition to improving the hydro-meteorological and remote sensing analyses and understanding of their interrelation, an expansion of the existing flood monitoring system is being initiated through the acquisition of radar satellite images. The monitoring program pays attention to riverbank erosion, impacts of floods and erosion, and institutional issues for the further organization of a routine monitoring system. The project report has been published.

GCP (Ground Control Points) Data bank: The aim of this R&D project was to propose a methodology to develop a data bank containing ground control point data for geo-referencing recent and future high-resolution satellite imagery. The design of a hard copy data archiving system and analysis of the collected field data have been already completed. Preparatory work on a data archive using ground control points collected during fieldwork is currently underway. The technical note on the project has been rescheduled to be published in July.

Mauza database: EGIS is in the process of building a seamless mauza boundary for Bangladesh, the source data for which are the thana maps of the scale 1: 63360 of DLRS. The 1991 BBS statistics will be incorporated into this spatial database. In collaboration with BARC, EGIS has already collected data on 300 thanas compiled by BARC. The rest will be compiled by EGIS following which the whole dataset will be given over to BARC for further use. Most of the individual thanas already have a database based on BBS statistics. EGIS has also developed a methodology to edge-match the thanas, the procedure for which will be soon started.

CEGIS Metadata: The main objective of this project was to develop in-house expertise on metadata creation to enable the user to determine the content, quality and accuracy of spatial database. Two EGIS projects have been selected, the Pond Inventory: Tangail (a remote sensing project) and the Pilot for the Arsenic Emergency Program - AEP (a GIS activity). The GeoKey 3.0 software has been selected as the metadata tool considering its user friendliness and functionality.

Jamuna Bridge Area Mapping: This project involves the acquisition of one image (either Landsat 5/7 TM/ETM+ or IRS1C/1D LISS III) for the mapping of the Jamuna Bridge area starting from November 1998 up to March 2003. This is the fourth year of the project.

Remote Sensing Support for PDO-ICZM & MES: This project has been designed to provide remote sensing support to PDO-ICZM & MES II (Program Development Office - Integrated Coastal Zone Management & Meghna Estuary Study) for the year 2000-2001. It involves the acquisition of six Landsat 5/7 TM/ETM+ image scenes for mapping the entire Meghna Estuary and the Sundarbans area and delineating the recent coastal boundary by classifying the acquired images. Image selection, acquisition and basic image processing tasks have been recently completed. The activities on the image mosaic task, mapping and classification are currently underway.

Training: A strategic plan for the training unit is being developed for 2002-2006 to prepare for the changes in the project's institutional setting under CEGIS. In brief, training during this period would be offered to professionals and officials of public sector organizations, NGOs, programs and projects, as well as those of national and international organizations including students thereof. As part of the strategy for the period, the EIA and Arc/View courses which have proven very effective and need oriented as revealed from training needs assessments, will be the major courses offered during the five-year plan period. Efforts will be made to develop and present courses in collaboration with other national and international training institutes, and in cooperation which the latter accredited trainers will be made available. Short courses would be developed, with courses on environmental policy and legislation and environmental awareness given the priority. Efforts would be made to ensure exchange and access of data between agencies and linking mechanisms between and among the clients: environment, water, fish and forest. The CEGIS library would be improved and made more accessible, and workshops and seminar meetings would be continued more intensively for professionals. The strategic plan would be to also seek support for fellowships from the Government of the Netherlands for public sector participants. Cooperation from other organizations and donors would be developed in the course of the operation of the training unit as package projects.

EGIS Satellite Images: A portfolio

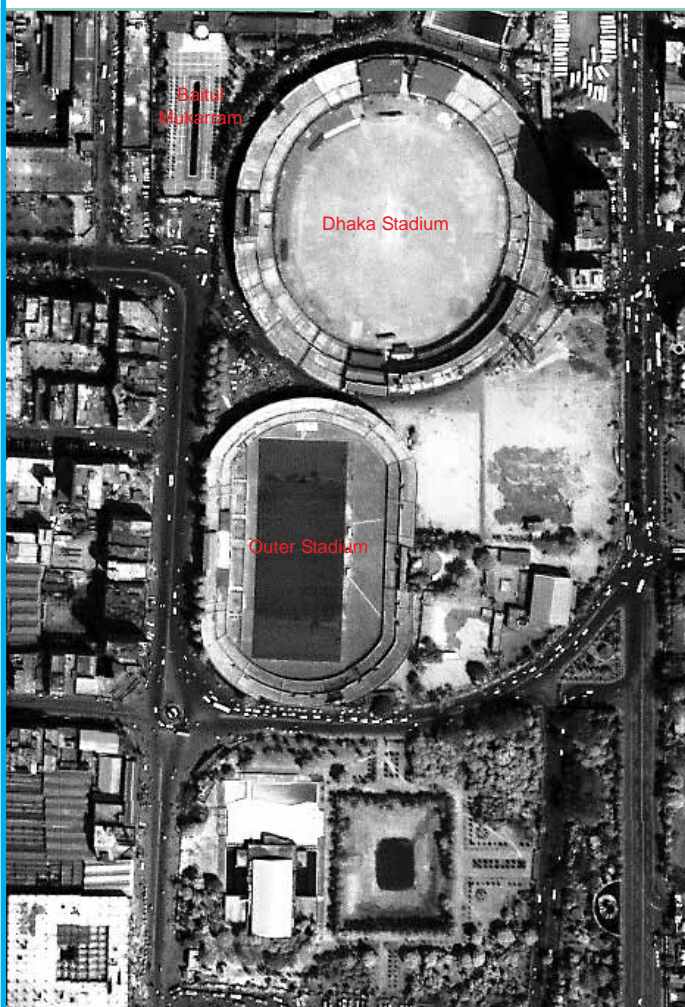


Image of Dhaka city (part) viewed from space (680 km above land). IKONOS (1 meter) image of 21 March, 2001.

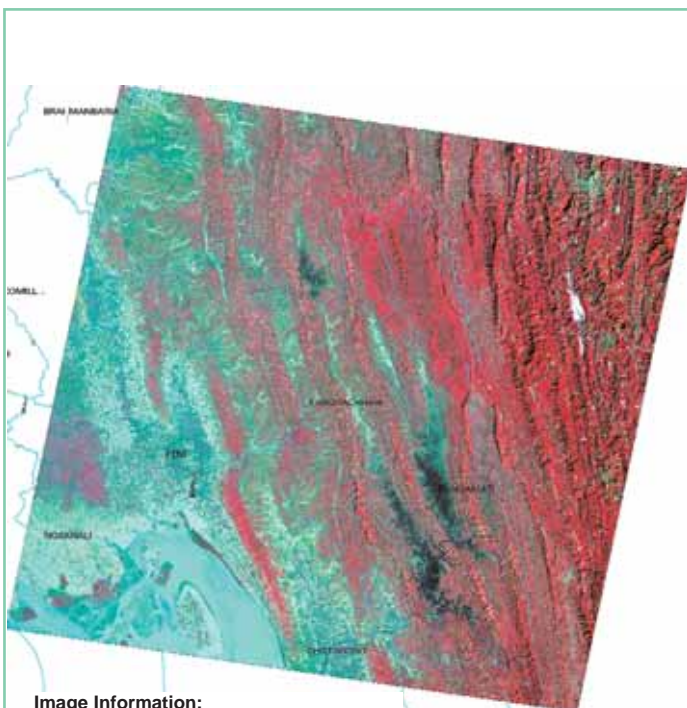


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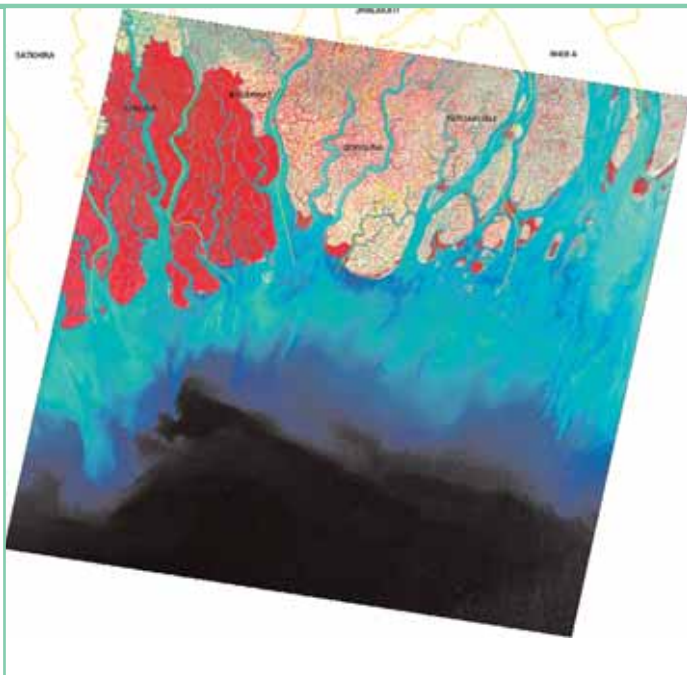


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Dealing with demand for GIS & Satellite Imagery

Rationale of EGIS Involvement: At a time when EGIS is looking ahead towards a transformation from project to institution, the scope of its sustainability stands out as one of the most important issues of interest. EGIS operates on the principle that sustainability could only be achieved if continuous investments are made, not just in the development of markets, but in an efficient and accountable organization which can provide high quality services. Over the past years, EGIS has succeeded in enriching both its human and material resources to the extent that it is able to satisfactorily meet the ever increasing demand for its services by organizations who face the need to develop skills and capacities in the use of geographic information system (GIS) and remote sensing (RS) technology.

GIS and RS technology are now recognized by policy makers and planners as efficient techniques and tools to understand base conditions, monitor development and to assess and evaluate impacts. Since the last three years, EGIS has been providing off-the-shelf support services in response to numerous requests for quick, short term and small scale support in related areas from different GoB, NGO and private sector organizations as well as researchers of different universities at home and abroad.

Nature of support: It is mainly to share experience and skills to

- ◆ Develop a GIS set-up and database;
- ◆ Process satellite imagery;
- ◆ Understand current and historical conditions, detect changes and predict future natural phenomenon using satellite imagery;
- ◆ Prepare and print maps using satellite imagery and GIS data layers, etc.

The speciality of these activities is that these are of a small scale in terms of volume, duration and financial involvement and therefore, most of these could be supported from the existing EGIS resources.

Image Archive: In the last ten years, EGIS-ISPAN has built up a valuable archive of satellite imagery and GIS data layers that have been used, collected and converted, developed and processed for projects of EGIS as well as of the Government and NGOs. The archive contains more than two hundred frames of digital images of different satellite systems and ground resolutions. These are mainly, 80x80 meter resolution Landsat MSS, 30x30 meter resolution Landsat TM and ETM, 20x20 meter resolution SPOT multi-spectral images, 6x6 meter resolution IRS Panchromatic images, 24x24 meter resolution LISS images, and radar images of different resolutions from the ERS and RADARSAT satellite systems. The archive also contains a series of images covering the major rivers, especially of the southwest area of Bangladesh from 1973 up to the present. It also has a collection of a significant number of imageries covering the coastal areas of Bangladesh. EGIS has prepared a mosaic image of the whole of Bangladesh using a 30x30 meter resolution Landsat TM image. Flood extent maps of 1998, 1999, and 2000, prepared from the images of different satellite based radar systems are also available in the archive. EGIS is also a distributor of satellite imagery of different satellite systems such as, the Indian Remote Sensing Satellite, IKONOS, RADARSAT International, etc.

Type of client and support: Over the last three years, EGIS has supported more than 20 different GoB, NGO and private sector

organizations and projects. The support comprised uses of remote sensing and GIS in diversified fields. One such example is the High-Point Rendel Ltd. to whom EGIS has provided satellite image based maps containing information on route and distance through the dry season deep-water channel of the Brahmaputra River which they have used in their studies to facilitate the towing of a 2500 ton barge mounted power station from Bahadurabad to Mymensingh. Another client, the Shell Oil Bangladesh has benefited from EGIS' support in processing satellite images and incorporating seismic grid lines in the satellite image based map for their seismic surveys. The images and processing techniques were used to delineate the mud-flat areas in the estuary. For their food security assistance program in Bangladesh, the World Food Programme (WFP) has used maps of stable and erosion prone areas of the riverine charlands, processed, analyzed and produced by EGIS from satellite images. EGIS has supported the Gorai River Contractor in monitoring the excavation work in the Gorai river off-take area by procuring and processing satellite imagery and preparing maps of different years. Similarly, FAP 21/22 is monitoring the morphological changes in the Jamuna River by using the satellite imagery procured and processed by EGIS. The Surface Water Modeling Centre is one other major beneficiary of this type of support from EGIS. They have used a significant number of images processed by EGIS for their different hydro-morphological studies, among which is the planform analysis of the Brahmaputra River for their Sherpur and Khurshid Mohal Bridge Project. The River Research Institute (RRI) has recently used maps of the Jamuna and Padma river areas prepared by EGIS from the satellite images of different years for studies related to town protection and analysis of the siltation problem in navigation routes. For the Compartmentalization Pilot Project (CPP), Tangail, the different GIS data layers on water bodies, settlement areas and other infrastructure were extracted by EGIS from its image archive.

Many other organizations and projects are using satellite imagery that have been procured and processed by EGIS to develop their GIS database. For example, CARE-Bangladesh has used processed satellite imagery to extract different GIS data layers of the rural and urban areas of Bangladesh. NRECA International Ltd., consultant for the Rural Electrification Board, has used the processed 6x6 meter resolution IRS Panchromatic images to extract information on their project area. EGIS has also supported the Bangladesh Atomic Energy Commission by providing maps and information to facilitate their activities. Moreover, EGIS has provided processed images, maps and extracted data layers to researchers from universities at home and abroad to facilitate their academic research projects. These include, the Department of Geology, Dhaka University, Department of Archaeology, Department of Geography, Jahangirnagar University, Rajshahi University, University of Stuttgart, Germany, Asian Institute of Technology (AIT), Thailand, Bangladesh University of Engineering and Technology, South Asia Research Unit of Curtin University of Technology, Australia, etc. CARITAS, and BCAS are among the NGOs receiving EGIS' support.

Continuation of support: Since EGIS continues to build its expertise in GIS and RS technology, and since the number of institutions and organizations requiring capacity development in these areas continues to increase, EGIS is likely to keep providing services to clients in the future.

World Environment Day and Bangladesh

Every year we celebrate the World Environment Day on the 5th of June. This day was marked off for the occasion by the UN General Assembly in 1972, and since then more and more people are participating with increasing interest and enthusiasm. The purpose of the day is to raise awareness on environmental issues and to encourage effective steps in protecting and preserving it. The theme for this year was 'Connect with the World Wide Web of Life.'

In this age of information technology the world wide web or internet is a revolutionary medium. Our use of this medium ranges from obtaining information on science and even celestial events, to advertisement and even banking. It is a fact that we have not been able to keep pace with the rest of the world in making sophisticated use of the technology, but our country is still not lagging so far behind. Even if at a limited scale, contact is maintained daily with the rest of the world through the internet. Information technology has a tremendous contribution in transforming the modern radio and television to its current form. News related to wildlife, natural resources, and even events taking place in remote corners of the world are immediately transmitted worldwide. Documentary films and information clips are no longer unfamiliar to the people of our country. The National Geographic and Discovery channels are the favorites of many viewers here. The step taken by the Bangladesh Television (BTV) and Ekushey TV (ETV) to dub into Bangla many foreign documentary films is helping to build awareness among the general public on the interaction and use of nature and natural resources and the maintenance of the ecological balance.



A number of local producers have created documentary films on Bangladesh which are aired by BTV and ETV. It is encouraging to note that people from all walks of life, including children and adolescents enjoy watching these shows. Perhaps that day is not far off when documentary films showing the intricate and essential interaction and interdependence between human beings, wildlife and nature would be considered as the preferred programs of entertainment. In such a situation, people would be knowledgeable enough on environmental issues to be committed towards protecting and preserving it, and be more active in arresting its degradation and destruction.

Modern information technology could be more effectively used if the country, government and voluntary organizations emphasized the importance of building awareness and the role of the individual or family in protecting the environment. 'Environment Clubs' could be set up in all schools, communities and villages based on moral, social and religious principles, thereby redirecting the attention of the country's younger generation from drugs and anti social activities to the more constructive activity of preserving our natural resources for the next generation.

At a time when we are putting great efforts to build our country, decision makers and planners must ensure that all development projects are economically viable, socially acceptable, technically feasible and environmentally sound. The spirit of celebrating the world environment day should not be restricted to just one day. We should absorb it whole-heartedly in all aspects of our lives - heeding and aiding the enforcement of the environmental laws both at home and at work.

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