

Research / Mapping Activities**Remote Sensing and GIS in Monitoring Environmental Degradation in Barind Tract**

Drought and desertification are the two important gradually occurring geophysical phenomena causing irreversible damages to environment and ecology in different parts of the world. Unplanned human intervention to environment and over exploitation of natural resources often provoke various geo-environmental problems. Consequences are much more severe in Bangladesh having very high population density with majority of the people living under the poverty level creating various socio-economic problems accompanied by a subsequent aggravation of the existing poverty condition. As a drought-prone area, Barind Tract has drawn attention of the researchers and policy makers because of intensification of such degradation in this area. A relatively few studies has been conducted to address the issue. However, most of these studies have utilized qualitative approach in addressing the problem without involving any detail quantitative procedure for analysis. In a few articles or presentations, the prevailing condition therein has been mentioned as a case of commencement of desertification. However these comments are mostly neither supported by adequate arguments nor enriched with detail quantitative analysis or assessment. Lack of appropriate and adequate data, unavailability of proper methodology have largely restricted detail study in addressing such an important issue. In general, processes of desertification involve land degradation at a critical level with a long term manifestation of gradually decreasing land productivity and overall diminishing of vegetation greenness in a given

geographical area in addition to many other factors and symptoms.

Eventually, the present research work has been undertaken with an objective to characterize the on-going geo-environmental degradation in this area (if there is any), its present trend and quantification of the rate of modification together with a study on the geo-environmental consequences. Special focus will be made to identify different geo-environmental parameters those are affected by such degradation. The study involves extensive application and synthesis of various data types including geophysical, climatic, soil properties, hydrological together with a rich collection of remotely sensed satellite data of SPARRSO over a considerably long time period. The whole work will be supported by necessary in-situ measurements and field investigation.

Defence Secretary Visits SPARRSO***Defence Secretary visiting SPARRSO***

Mr. Kamrul Hasan, Hon'ble Secretary, Ministry of Defence, Government of the People's Republic of Bangladesh visited SPARRSO on 25 April 2007. Brig. Gen. Shah Md. Sultanuddin Iqbal, BP, ndu, psc, Chairman (Acting), SPARRSO and Joint Secretary, Ministry of Defence accompanied him on the

occasion. Hon'ble Secretary had a meeting with the senior officials of SPARRSO. Various scientific activities of SPARRSO were demonstrated before him. He was informed about the problems faced by SPARRSO in its efforts to render better services to the nation. Mr. Hasan gave some directives in this context. He also visited the laboratories and the technical facilities of SPARRSO with keen interest.

Study on the Impacts of Shrimp Farming on Rice and other Agricultural Land using Remote Sensing and GIS

Shrimp farming has become a popular and lucrative economic activity in the coastal region of Bangladesh. In the recent years, shrimp farming activities have been growing very rapidly in this country mostly by transforming precious agricultural lands into shrimp farms. Most of these expansions are not followed by a systematic and environmentally sound approach. In consequence, various geo-environmental and socio-economic issues have been evolved that has generated debates on the social and environmental soundness of such activity. Under the perspective, Bangladesh Space Research and Remote Sensing Organization (SPARRSO) has carried out a research work on "Impact of Shrimp Farming on Rice and other Agricultural Land in the South-western Coastal Region of Bangladesh using Remote Sensing and GIS Techniques". The study was funded by the Ministry of Science and Information & Communication Technology, Government of the People's Republic of Bangladesh under its special grant for the financial year 2003-2004. The objective of the research was to study the characteristics of the aerial expansion of shrimp farming followed by an analysis on the impacts of such expansion on rice and other agricultural lands. The study area is geographically located in the south-western coastal region under the Satkhira district of Bangladesh. Time series data of Landsat MSS and TM covering a period of about 31 years from 1975 to 2005 have been

used. In addition, topographic and other thematic maps were also utilized for the study. Upazila-wise digital maps were prepared and area statistics have been generated regarding shrimp farm, crop land, water body and settlement areas. The study has been supplemented by a number of GPS based field investigations that provided a cross verification and scope for correction of interpreted results as obtained from digital images. Satellite-derived digital data have been utilized to identify and monitor shrimp farming and agricultural land during different years.

Analysis of time series satellite data indicates the absence of any significant shrimp farming activity in the area during December-February 1975-77. However, an area of about 173,33 ha was found to be under shrimp farming activity in November 1990 with a subsequent expansion to 101,899 ha and 71,301 ha in November 2004 and January-March 2005 respectively in the Satkhira district. The study also indicates that shrimp farming areas have been encroaching into rice and other agricultural land. Such an encroachment and the activities therein are often provoking adverse impacts on soil particularly due to intrusion and storage of saline water for a long period of time as a requirement particularly for cultivation of Bagda shrimp.

New Chairman in SPARRSO



Md. Nazmul Huda Khan, ndc, joined as Chairman of Bangladesh Space Research and Remote Sensing Organization (SPARRSO) on 06 June 2007. He is an Additional Secretary to the Government. He obtained B.A. (Hons) and M.A. in English from the Chittagong University and Post-Graduate Diploma in Health Education from the Madurai Kamraj University, Tamilnadu, India. He joined Bangladesh Civil Service (BCS) on 01 March 1979 as a member

of Information General Cadre through Superior Post Examination, 1976. Before that he worked as a lecturer in English in private and Government colleges as a member of the Bangladesh Junior Education Service (BJES). After joining BCS, he worked as many as 18 Ministries as Information and Public Relations Executive. He was PRO to Prime Minister twice and Vice President once. He was Senior Directing Staff (SDS) Civil, National Defence College prior to his promotion to the post of Additional Secretary to the Government on 04 December 2006.

Mr. Khan has undertaken a number of professional training courses both at home and abroad. Some of these are: Foundation Training Course at Civil Officers' Training Academy (COTA), Advanced Course on Administration and Development (ACAD), Senior Staff Course (SSC) and course on Policy, Planning and Management (PPM) from Bangladesh Public Administration Training Center (BPATC) and National Defence Course (NDC) from National Defence College, Mirpur, Dhaka. He has also undertaken a two month Computer Course at Computer Management Corporation (CMC), New Delhi, India.

Mr. Khan has been a regular writer on socio-economic and literary issues in the print media. He was the Chief Editor of National Defence College yearly monogram Journal "NDC JOURNAL 2005 & 2006".

He has participated many international conferences, seminars, workshops both at home and abroad. He visited a number of countries such as Australia, Belgium, China, Dubai, England, France, Germany, India, Malaysia, Myanmar, Senegal, Singapore, Sri Lanka, South Korea, Thailand, Vietnam. He is married and has a son and a daughter.

New Members in SPARRSO



Mr. Shamsuddin Ahmed joined SPARRSO as Member

on 07 June 2007. He has his M.Sc. in Physics from Jahangirnagar University, Savar, Dhaka. He is a Joint Secretary to the Government. He joined Bangladesh Civil Service (Administration) cadre in June 1983.



Mr. Md. Abdus Samad, Joint Secretary to the Government joined SPARRSO as a Member on 07 June 2007. Before joining here he worked in the Ministry of Commerce as Deputy Secretary from 18 March 2004 to 03 July 2006. He is a member of BCS (Administration) cadre and joined on 19 June 1983. In his service life he completed a number important trainings like Foundation Survey Settlement, ACAD, SSC, MATT etc. He is married and has two daughters.

SPARRSO's 9th Board Meeting



SPARRSO Board Meeting under the Chairmanship of Md. Nazmul Huda Khan,ndc

SPARRSO's 9th Board Meeting was held in the Committee Room of SPARRSO on 20 June 2007 under the chairmanship of Md. Nazmul Huda Khan, ndc, Chairman of Bangladesh Space Research and Remote Sensing Organization (SPARRSO). The meeting was attended by all the members of SPARRSO. It was the first time in the history of SPARRSO when a full pledged Board Meeting was held in

presence of all the members. In the meeting threadbare discussions of all the aspect related to research and development activities of SPARRSO took place. Some guide-lines have been directed to gear up the activities of the organization with a view to meet the demand of present as well as future need of the country. The meeting expressed great satisfaction over the approval of the pay scale of SPARRSO by the Finance Ministry. This was identified as a long standing problem in development of SPARRSO as well as for the welfare of employees. The meeting observed that to keep pace with the emerging technological development of remote sensing, SPARRSO needs to be updated through meaningful approaches which require special attention of the Government.

Participation of SPARRSO's Members at Management at the Top (MATT-2) Workshop

Mr. Shamsuddin Ahmed, Member (Joint Secretary) and Mr. Md. Abdus Samad, Member (Joint Secretary) of SPARRSO participated MATT-2 workshop from 01 July to 05 August 2007 (6 weeks) - organized by the Ministry of Establishment. The workshop was held in Bangladesh Public Administration Training Center (BPATC), Savar in Dhaka and in Singapore Civil Service College, Singapore. The main objectives of this workshop was to improve the performance of the senior level officers about administration and development. The duration of workshop in BPATC was three weeks and two weeks in Singapore. The participants including above two had to take different performance projects called Performance Improvement Project (PIP) in groups. The project title of above mentioned two members were "Introduction of Monthly Performance Assessment for Distribution Honorarium in BPATC". They have successfully completed the workshop's task. The final presentation of PIP and Certificate

Awarding Ceremony for MATT-2 Batch will be held on 29 January 2008.

SPARRSO's Engineer participated Master Program on Space Technology and Applications (MASTA)

Mozammel Haque Sarker, Senior Engineer, SPARRSO, has successfully completed the 1st phase (nine-month course work) of the Master Program on Space Technology and Applications (MASTA) at Beihang University (BUAA), Beijing, China. MASTA has been the out-come of the coordination among the institutions of Beihang University (BUAA), the Secretariat of the Asia-Pacific Multilateral Cooperation in Space Technology and Applications (AP-MCSTA) and the China National Space Administration (CNSA). Under the 2nd phase (one year) of the program, Mr. Sarker will have to carry out an approved project namely "Crop growth monitoring and yield estimation using NDVI based on MODIS data" to fulfill the requirement of MS degree.

Participation of Training / Conference / Workshop

Md. Nazmul Huda Khan, ndc, Chairman, participated in the Seminar on "Tsunami Vulnerability Assessment of Urban Growth Centres in Southeastern Coast Bangladesh" at Bangladesh Atomic Energy Commission (BAEC), Dhaka on 29 June 2007.

Dr. Mahmudur Rahman, SO, is attending to Post Doctoral Fellowship in Japan under Japan Society for the Promotion of Science (JSPS) from 01 June 2007 to 30 June 2009.

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