



❖ CSSTEAP Newsletter ❖

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TEN YEAR COMMEMORATION FUNCTION OF CSSTEAP

A commemoration function to mark the completion of success in training for ten years (1995 to 2005) of CSSTEAP was held on November 8, 2005 at National Agricultural Science Centre (NASC) Complex at New Delhi. The aim of this function was to highlight the achievements of CSSTEAP and enhance the visibility of CSSTEAP among countries of Asia-Pacific region, UN agencies, space agencies and space industry. The function was inaugurated by lighting of lamp by the Chief Guest Mr. Prithviraj Chavan, Hon'ble Minister of state in the Prime Minister's Office. In his welcome speech Mr. G Madhavan Nair, Chairman GB, CSSTEAP & Secretary, Dept. of Space, Govt. of India thanked all the dignitaries, officials and students from all across the world who came to participate in the function and outlined the progress made by the Centre during the past ten year towards fulfilling its objectives and the commitment by Govt. of India through Dept. of Space to the CSSTEAP. He also briefly touched on the future strategy for the centre.

Dr. Sergio Camacho, Director, UN-OOSA gave a presentation on the history of the UN initiatives in the creation of CSSTEAP in different regions of

the world and the role CSSTEAP has played in the capacity building in the use of space science and technology in the Asia-Pacific region. Director-in-charge, CSSTEAP Dr. V.K Dadiwal gave a brief presentation on the CSSTEAP activities and the achievements in the past 10 years in imparting training and education and the impact of these in raising the skills and overall development in many countries in the Asia-Pacific region and also initiatives taken by the centre to make a similar mark in area of research activities. Chief Guest of the function Hon'ble Minister of state in the Prime Minister's Office Mr. Prithviraj Chavan gave a key



Ten year commemoration function of CSSTEAP in progress



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Wishing all the readers a very happy and Prosperous 2006



Release of Souvenir by chief Guest-Mr. Prithviraj Chavan, Hon'ble Minister of state in the Prime Minister's office

note address on the occasion. He applauded the role that CSSTEAP has played in the past years and raised the level of commitment of India towards creating a better world where sharing of knowledge and improved society lives. The initiatives of UN in the activities of the CSSTEAP was appreciated.

To mark the occasion a souvenir consisting of 350 pages documenting history, progress and achievements of CSSTEAP in past 10 years, student's pilot projects and M. Tech. research summaries of all four courses, messages from dignitaries in particular President of India, Prime Minister of India, UN Secretary General, GB members, centre directors and memorable moments photographs was released by the Chief Guest. Dr. R.R. Navalgund, Director, SAC also addressed the audience on this occasion.

Past Directors of CSSTEAP Prof. B. L. Deekshatulu and Prof. Karl Harmsen and past Deputy Director of CSSTEAP and currently DD (NRSA), Dr. P. S. Roy, conducted the afternoon technical session that featured country statements, students experience and course description by Course Directors. Valuable remarks and comments by various country ambassadors and CSSTEAP Governing Board members present in the function were also invited. Ambassadors from



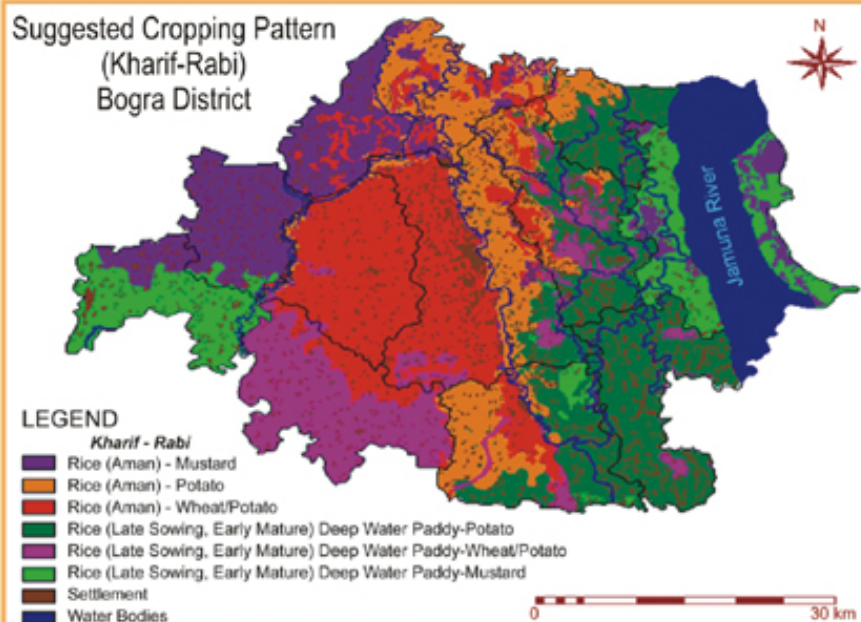
Past RS & GIS course participant from Myanmar giving feed back

Indonesia, Kazakhstan, Nauru, Nepal, Sri Lanka gave their brief comments and expressed their sincere gratitude and commitment to strengthen the centre. These training programmes has benefited and have led to collaborative ventures for sustainable regional development. Selected past CSSTEAP course participants who had been specially invited for this function shared their experiences and the effectiveness of centre in utilization of knowledge and skills gained at the centre in their current activities. Past students of several P.G. courses of CSSTEAP such as one from Bangladesh (SATMET), one from Nepal (SATCOM) and two from Myanmar & Uzbekistan (RS & GIS) felt that the course is well structured and content is of high standard and the practical professional experiences gained through pilot project work and M. Tech research are highly useful in their professional work. A brief presentation on the course structure and the achievements of past 10 years were given by respective course Directors viz. Dr. S. K. Saha, IIRS, Dehradun (RS & GIS); Dr. R. K. Gupta, SAC, Ahmedabad (SATCOM); Dr. B. M. Rao, SAC, Ahmedabad (SATMET) and Dr. H. S. S. Sinha, PRL, Ahmedabad (Space Science). The full day function was concluded by vote of thanks by Prof. J. N. Goswami, Director, PRL, Ahmedabad. In the evening a get together dinner was hosted by

FLOOD HAZARD ZONATION AND OPTIMAL CROPPING PATTERN PLANNING FOR A FLOOD PRONE AREA USING SATELLITE REMOTE SENSING AND GIS AIDED MULTI CRITERIA EVALUATION (MCE) APPROACH

Mr. Md. Rejaur Rahman, Bangladesh

A research study using GIS aided multi-criteria evaluation (MCE) approach in flood hazard zonation and land suitability analysis for crops to suggest suitable cropping pattern for a flood prone area i.e. Bogra district, Rajshahi Division of Bangladesh is described in this article. The main objective of this study was to develop a flood hazard zone map for the study area with selected eight criteria viz. water level rise flood zone, flood frequency (calculated), flood return period, probability of flood occurrence, flood depth, observed flood frequency, population density and rainfall thiesen along with MCE technique. Another objective was to find out the land suitability for crops for the flood and after flood season crops using FAO suitability classification framework with MCE approach. For land suitability analysis, Rice (Aman), Mustard, Potato and Wheat crop, which were dominant / prominent in the study area, were selected for this study. To suggest optimal cropping pattern to combat adverse effects of flood using GIS integrated analysis of flood and after flood seasons land suitability for crops, was also an attempt of this study. For this study IRSP6: LISS III and LANDSAT TM satellite data were used and analysed. To classify the satellite data, object-oriented digital classification procedure was performed. For the generation of necessary layers (Factors and Constraints) for the MCE approach, remote sensing and GIS integrated techniques and models were applied. To standardize the all factors for the MCE, AHP method was used in all the level in this study. Finally to perform the multi-criteria evaluation (MCE) for flood hazard zonation and land suitability analysis for crops, MCE module of IDRISI and SMCE module of ILWIS software was used in this study respectively. The FAO (1976) has given a framework for land suitability analysis for



crops in terms of suitability classes from highly suitable to not suitable based on the crop specific soil, climatic and topographic requirements. The same framework has been incorporated in the study with addition of the MCE approach, which transfer the criteria (factors) into quantitative format, standardized the factors and evaluate the objective using specific decision rules. The results of the flood hazard zonation depicted that about 36.45% of the total area was classified under high to very high flood hazard zone and Dhunat, Adamdighi and Gabtali Thanas were the most vulnerable in respect to flood hazard risk in the study area. On the other hand, the suitability analysis depicted that in the study area the land was highly to moderately suitable (S1 to S2) for the crops. Only due to the flood hazard, in the flood season (Kharif) some areas were found marginally suitable (S3) for Rice (Aman) crop. Optimal cropping pattern for the flood and after flood season based on crops suitability and expert knowledge indicated that the Rice-Wheat/Potato, Rice (Late sowing)-Potato, Rice-Potato and Rice-Mustard combination was found the best suitable suggested cropping pattern for flood and after flood season in the study area. So,

FIFTH POST GRADUATE COURSE ON SATELLITE COMMUNICATIONS

The fifth SATCOM course of CSSTEAP, commenced on the August 1, 2005 at the New SAC Campus, Bopal, of Space Applications Centre (SAC), Ahmedabad. 12 participants from six different countries in the Asia Pacific region are participating in this course.

After going through a rigorous schedule for the last 7 weeks the participants got the first break and left to the South of India on their first technical study tour on 23rd September 2005. Participants visited ISRO Satellite Centre (ISAC), Bangalore, Master Control Facility (MCF), of ISRO in Hassan, ISRO Tracking Station (ISTRAC) at Bangalore and Mr. Abdul Nazir Sab State Institute of Development in Mysore. The Lectures on Satellite sub-systems were arranged in ISAC, Bangalore where most of the design & developments of Satellite sub systems are carried out. In all these centres the participants' were accorded cordial reception and got the flavour of the ISRO's space programmes, the work culture and hospitality. As a part of the study tour the



Participants in Lalbag garden in Bangalore

participants also visited places of tourist importance, museums and got a glimpse of our heritage and culture. The Module #2 concluded on October 7, 2005.

Though, the Satellite sub systems part of Module #2 was covered by the subject experts at ISAC, Bangalore during the study tour to South, the

aspects of Satellite Communication Systems were covered by experts from SAC. The presentations on various Satellite sub systems, well supported by the practical demonstrations at ISAC Bangalore were



Participants at the Mysore palace

highly appreciated. The participants immensely benefited by the exposure given to them by the experts at ISAC Bangalore. The participants were back in Ahmedabad for the Navratri (the traditional dance festival of Gujarat).

Module #3 & 4 which deals with Earth Station Technology and Transmission, Multiplex & Multiple Access respectively were covered during the month of October and the first week of November. Topics in these two modules were covered by the subject experts at SAC and one eminent faculty member invited was, Mr. K. G. Matapurkar, former DDG, Telecom Engineering Centre, Department of Telecommunications. Module #4 & 5 were handled by Mr. C. Lal former Course Director, SATCOM III. Module # 5 covered a wide variety of topics starting from Colour Television, Compression standards, HDTV, DAB, Multicasting and Multimedia. The participants were also shown some of the Radio and TV studio installations at Ahmedabad.

In the Module #6 in addition to the experts at SAC external experts such as Mr. L.R. Meena, Deputy



Mr. Damodar Magdum, SATCOM IV Participant of CSSTEAP with Dr. A.P.J. Abdul Kalam, President of India

Director General, IMD, Mr. K. G. Matapurkar and Mr. S. Barathy, Vice President, HCL Comnet were invited to deliver lectures.

The International Union of Radio Science (Union Radio-Scientifique Internationale), a non-governmental and non-profit organization under the International Council for Science organizes General Assembly once in every three-year. The 28th URSI General Assembly was organized from 23 to 29 October 2005 at Vigyan Bhavan, New Delhi. To encourage young researchers from different countries, URSI selected Young Scientists from all

TENTH POST GRADUATE COURSE ON REMOTE SENSING AND GIS

The Tenth Post Graduate Course on Remote Sensing and Geographical Information System (RS & GIS) of CSSTEAP is in progress at Indian Institute of Remote Sensing (NRSA), Dehradun. The course was commenced on October 1, 2005

Total 19 participants from 13 countries of Asia Pacific Region (China- 1, India- 2, Indonesia- 2, Kazakhstan- 1, Kyrgyz Republic- 1, Mongolia- 2, Nepal- 2, Sri Lanka- 2, Thailand- 2, Uzbekistan- 1, Vietnam- 1, Iran- 1, Myanmar- 1) are attending the course. The course duration is of 9 months and divided into two Semester. Semester I consist of Module IA of 3 months and Module IB of one months duration. Semester II consist of Module II of 2 months and Module III of 3 months.

In the first week of the course, an introductory programme consisting of lectures on overview of Satellite Meteorology, Satellite Communication, Space Science and Technology and Remote Sensing & GIS applications in Natural Resources Management and Environmental Assessment followed by an introduction of Social, Cultural and historical aspect of India were organized. Participants were also familiarized about Dehradun city and surrounding by conducting one day local sight seen trip. The module IA, covering theory, practicals and tutorials on principal of Remote Sensing, GIS & GPS is completing on 31st December

2005.

The course participants also attended 10 Year Commemoration Function of CSSTEAP held at Delhi on November 8, 2005. They also visited Taj Mahal, Agra and various historic places at Delhi as part of educational tour to Delhi and Agra. Several field excursions were also arranged during this module for ground truth collection and demonstration of various ground truth instruments and these information were utilized for interpretation and analysis of satellite data.

To improve the English Communication and writing skill of the course participants, evening English classes were also organized beyond office hours. These classed were conducted by an English



Participants at Forest Research Institute (FRI), Dehradun during local field excursion

BACKGROUND OF CSSTEAP

In response to the UN General Assembly Resolution (45/72 of 11th December, 1990) endorsing the recommendations of UNISPACE-82 the United Nations Office for Outer Space Affairs (UN-OOSA) prepared a project document (A/AC.105/534) envisaging the establishment of Centres for Space Science & Technology Education in the developing countries. The Objective of the Centres is to enhance the capabilities of the member states in different areas of space science and technology that can advance their social and economic development. The first of such centres, named as Centre for Space Science & Technology Education in Asia & the Pacific (CSSTEAP) was established in India in November 1995. Department of Space, Government of India has made available appropriate facilities and expertise to the Centre through the Indian Institute of Remote Sensing (IIRS) Dehradun, Space Applications Centre (SAC) & Physical Research Laboratory (PRL) Ahmedabad. The Centre is an education and training institution that is capable of high attainments in the development and transfer of knowledge in the fields of space science & technology. The emphasis of the Centre is on in-depth education, training and application programmes, linkage to global programmes / databases; execution of pilot projects, continuing education and awareness and appraisal programmes. The Centre offers Post Graduate level and short courses in the fields of (a) Remote Sensing and Geographic Information System, (b) Satellite Communications and GPS, (c) Satellite Meteorology and Global Climate, (d) Space and Atmospheric Sciences. A set of standard curricula developed by the United Nations is adapted for the educational

Ongoing Courses

- Fifth 9 month Post Graduate course in Satellite Communications at SAC, Ahmedabad from August 1, 2005.
- Tenth 9 month Post Graduate course in RS & GIS at IIRS, Dehradun from October 1, 2005.

Forthcoming Courses

- International Training course on RS & GIS applications in Urban Studies at IIRS, Dehradun during August 14-Sep 15, 2006.
- Fifth 9 month Post Graduate course in Satellite Meteorology & Global climate at SAC, Ahmedabad from August 1, 2006.
- Fifth 9 month Post Graduate course in Space & Atmospheric Science at PRL, Ahmedabad from August 1, 2006.
- Eleventh 9 month Post Graduate course in RS & GIS at IIRS, Dehradun

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CSSTEAP welcomes the views and opinions of the readers of Newsletter. Short Communications on space science and technology education which may be relevant to Asia Pacific Region are also

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