

Report on National Seminar on

GEOGRAPHIC INFORMATION SCIENCE: OPPORTUNITIES & CHALLENGES IN 21st CENTURY

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A one National Seminar on Geographic Information Science: Opportunities & Challenges in 21st Century was jointly organized by the Kumaun University, Nainital (Uttarakhand) and NIIT University, Neemrana, (Rajasthan) at the Centre of Excellence for Natural Resources Data Management System (NRDMS) in Uttarakhand, Department of Geography, Kumaun University, SSJ Campus Almora on 1st May 2012. Eighty four participants from GI Science, Computer Science and Information Technology participated in the seminar. The seminar was organized in four different sessions. A brief account of these sessions is presented below.

Inaugural Session

In the inaugural session Prof V.P.S.Arora, Vice Chancellor, Kumaun University, Nainital said that today application of GI Science is being done throughout the world in almost all the disciplines of research, in administration, planning, management, monitoring and management. Highlighting significance of GI Science Prof Arora informed that GI Science is a decision support system which gives quick information with map regarding the reality of the earth's geographic features. In agriculture, it is not only being used to define cropping pattern but also being used in identification of diseases in different crops, Prof Arora added. Underlining the need to include the GI Science in education from Primary Level, Prof. Arora informed that, the Kumaun University has started Master's Degree in GIS Science first time in the country for developing skilled human resource.

Dr. Deobam Acharya, Area Director, NIIT University, Neemrana, Rajasthan explained in detail about the origin and current status of GI Science in India. Dr. Acharya said that the Information technology shall be soon replaced by GI Science and the next decade would be the decade of GI Science. Regarding the nature and capability of GI Science Dr. Acharya said that it is a unique and multidisciplinary science which has enormous capacity to combine the earth's information under one umbrella in mobile or tablet platform. Dr. Acharya said that some of the challenges specific to Indian context are development of spatial and temporal information, management and integration of these information in the decision making processes at all the levels of governance and generate job opportunities along with providing quality education. To address these challenges, along with the existing initiatives such as NRDMS and NSDI, India has proposed to develop a system called *National GIS*, Dr. Acharya added. Regarding the future of GI Science, Dr. Acharya informed that the current implementation of e-Governance is expected to be replaced by g-Governance which will lead to manifold increase in job opportunities for graduates in GI Science and positions will be in various levels such as GIS engineer, GIS project manager, GIS developer, GI Scientists in public and private sector, etc.

Prof. J.S.Rawat, Director, Centre of Excellence for NRDMS in Uttarakhand gave an introduction about the Seminar. Prof. Rawat said that to promote GI Science in education in India, to develop strategy to meet out the challenges of GI Science and its application in g-Governance in India, and to explore synergy between Kumaun University, Nainital and NIIT University, Rajasthan, regarding GI Science Development in India are the objectives of this Seminar.

In the beginning of the Inaugural session, welcoming all the participant, Prof. H.S.Dhami, Director, ICT, Kumaun University Nainital and Director, SSJ Campus Almora gave a comparative account of GIS-21 and GIS-20 designs. Prof.Dhami said that to grasp the full extent of the difference between GIS-21 and GIS-20, we will have to consider three critical issues, i.e., change, semantics, and cognition for GIS-21 applications which were mostly absent in GIS- 20 designs.



Inaugural Session of the Seminar

Technical Session-I

The first technical session of the seminar was on Opportunities and Challenges on GI Science in 21st Century. The first speaker of the session, Dr. P.A. Pathak, NIIT University presented a detailed account of challenges and opportunities of GI Science. Outlining the current scenario, Dr. Pathak reported that for developing required spatio-temporal models in GI Science there is need: to deal with more dynamic processes to adopt cyber technology to build geo-cyber-infrastructure and consume data from various sources; to develop new models and languages (programming) for handling of large, real time datasets; to develop network of geo-sensors for detailed observations about dynamic processes; to Improve user interface of GIS tools; to use citizens as sensors and to apply GI Science for subjects such as psychology, sociology, etc. which come under human-geography.

The second speaker, Prof. J. S. Rawat presented opportunities and challenges of GI Science in Governance and Education System with particular reference to the Uttarakhand State. Highlighting significance of GI Science in Governance, Prof Rawat informed that their Centre has developed a web-based GeoPortal for one of the districts of Uttarakhand, viz., Almora and has given on job training to government personnels of different departments for capacity building in application of GI Science in Governance. Demonstrating in detailed about the Almora GeoPortal, Prof Rawat also presented a strategy to develop GeoPortal for the entire State of Uttarakhand in near future in association with Uttarakhand Council of Science and Technology (UCOST) Dehradun and different government line departments.

Technical Session-II

The second technical session was on Education Programmes in GI Science. In this session Dr. Acharya presented details of Education programme NIIT University on GIS. He said that NIIT University has started education

programme since 2010 in M.Tech. in GIS with scholarships supported by ESRI inc., California,USA. Dr.Acharya said that NIIT University believes Kumaun University is a centre for excellence in GI Science education and research. With the intention of developing top quality task force in GI Science and Technology, NU has discussed its scholarship based and GIS Industry supported M.Tech GIS programme and explained the salient features of the programme to Kumaun University students. Dr.Acharya stated that NU expects Kumaun University students to apply for the 2012-2013 academic year that starts August 2012 and avail the highly prestigious merit based.

Mr. Manish Kumar of Centre of Excellence for NRDMS in Urrarakhand, GI Science Programme, Kumaun University presented a detailed account of Master's Programme in GI Science. Mr. Kumar said to develop human resource in GI Science, the Kumaun University has started two years Master's Degree Programme in GI Science. Giving a detailed account of GI Science programme Mr. Kumar informed that for completing Master Degree Programme, students have to complete 12 papers, viz., Fundamental of GI Science, Principle's of Remote Sensing, Elements of Photogrammetry, Earth's Positioning Systems, Geographic Information System, Computer Cartography, Advanced GI Science, Applications of GI Science, Business Administration For GI, Geographic Information Science: A Global Overview, Application of GI Science in Urban and Rural Planning and Web-GIS in three Semesters, and in fourth semester students have to complete a project oriented dissertation in any GIS company or Institution. Mr. Kumar also informed that after completing Master's Degree, students of GI Science are getting jobs in different Companies such as RMSI, Noida, TOM TOM, Pune, Genesys,Mumbai, RAMTECH, Noida, Riding India Pvt Ltd.,Noida, COWI, Gurgoan), INNODATA ISOGEN, Noida, PARAS, New Delhi, INSPER, Chandigarh and in Research Institutions like Punjab Remote Sensing Centre, Ludhiana, Forest Survey of India, G.B. Pant Institute of Himalayan Environment and Development,Kosi-Katarmal, Almora, Indian Meteorological Department,New Dehi, Indian Agricultural Research Institute, New Delhi, and NRDMS ,Almora.

Valedictory Session

In the valedictory Session, feedbacks from the participants were taken regarding to improve the quality of GI Science education, and to meet challenges and to adopt the opportunities of GI Science in India. After deliberations and discussions, the following recommendations emerged by concusses:

1. Both the Universities (i.e., Kumaun University and NIIT University) shall work jointly for developing awareness among people about GI Science applications at regional and national level;
2. Both the Universities shall work jointly for developing curriculum in GI Science at different levels, viz., School, College and University, i.e., UG and PG Level;
3. Both the Universities shall work jointly for developing GIS infrastructure for g-Governance at State, District and Village level in Uttarakhand and Rajasthan States, in particular and India as a whole, in general; and
4. Both the Universities shall work jointly to pursue, develop and undertake collaborative research projects with national implications in near future.

At the end of the Seminar, Prof. V.P.S.Arora, Vice Chancellor, expressed his hopes that joint ventures of Kumaun University and NIIT University shall come out with some fruitful results in near future regarding development of this newly emerging multidisciplinary subject, viz., GI Science in India, and presented the vote of thanks to all participants making this path breaking event a success.



Valedictory Session of the Seminar

Media View on the Seminar

दैनिक जागरण हल्द्वानी, 2 मई 2012

‘जीआइ साइंस’ में सूबे की लंबी छलांग

अल्मोड़ा, जागरण कार्यालय : भौगोलिक सूचना विज्ञान (जीआइएस) को विकसित करने व इस विज्ञान को अपनाने की दौड़ में उत्तराखण्ड देश के अग्रणी राज्यों की फहरिस्त में शामिल हो गया है। यही वजह है, केंद्रीय विज्ञान एवं प्रौद्योगिकी विभाग अब तक अल्मोड़ा ही नहीं बल्कि पौड़ी, नैनीताल व बागेश्वर जनपदों को प्रोत्साहित करते हुए शोध अनुदान प्रदान कर चुकी है। खास बात है, एसएसजे परिसर का जीआइएस केंद्र आपदा प्रबंधन, सड़क, मेडिकल संस्थानों समेत डेढ़ दर्जन अहम जीआइएस मॉड्यूल तैयार कर चुका है।

दरअसल, भौगोलिक सूचना विज्ञान को शोध के जरिए विकसित करना तथा इस विषय में पाठ्यक्रम तैयार करने के मकसद से केंद्र सरकार ने जीआइ साइंस की नींव 1990 में रखी थी। जहां तक राज्य का सवाल है, इस विज्ञान को अपनाने और विकसित करने की होड़ में यह देश के चुनिंदा अग्रणी राज्यों में शामिल हो गया है। एनआरडीएमएस केंद्र के निदेशक प्रो.जेएस रावत के मुताबिक प्रदेश में जीआइ साइंस के विकास को केंद्रीय विज्ञान एवं प्रौद्योगिकी विभाग वर्ष 2000 से अब तक अल्मोड़ा, नैनीताल, पौड़ी, बागेश्वर जिले को शोध अनुदान प्रदान कर चुकी है। प्रो.रावत कहते

तरकी

- एसएसजे परिसर के केंद्र ने नौ वर्ष के सफर में 15 अहम मॉड्यूल किए तैयार
- केंद्रीय विज्ञान एवं प्रौद्योगिकी विभाग अल्मोड़ा, बागेश्वर, पौड़ी व नैनीताल को दे चुका है शोध अनुदान
- भौगोलिक सूचना विज्ञान में अग्रणी राज्यों की फहरिस्त में आया उत्तराखण्ड

हैं, जीआइएस केंद्र अल्मोड़ा ने वर्ष 03 से अब तक राज्य व जिला प्रशासकों व विभिन्न विभागीय अफसरों के साथ समन्वय स्थापित कर डेढ़ दर्जन महत्वपूर्ण मॉड्यूल तैयार कर लिए हैं।

जिला स्तरीय जीआइएस केंद्रों का मकसद विशेषज्ञ व तकनीशियनों द्वारा ग्राम पंचायतों के जरिए जिला योजनाएं बनाना है। साथ ही उनका सही क्रियान्वयन व अनुसंधान भी। केवल, महाराष्ट्र व झारखंड में तो ग्राम संसाधनों के नियोजन में इस विज्ञान का प्रयोग बड़ी तेजी से किया जा रहा है।

प्रो.जेएस रावत, भूगोल विभाग एवं निदेशक एनआरडीएमएस अल्मोड़ा

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एसएसजे परिसर के वानिकी विभाग में हुआ सेमिनार

जीआईएस तकनीक वक़्त की जरूरत

अल्मोड़ा | हमारे संवाददाता

एनआईआईटी जवलपुर विश्वविद्यालय के निदेशक डा. दिव्येन आचार्य ने कहा कि अगला दशक जीआईएस तकनीक का होगा। इसलिये युवाओं को इसका ज्ञान दिया जाना जरूरी है। उन्होंने शोध, प्रशासनिक कार्यों व विद्यार्थियों के लिए म्नाबल इन्फार्मेशन सिस्टम (जीआईएस) को आवश्यक बताया।

वह सोबन सिंह जोना परिसर के वानिकी विभाग में ‘भौगोलिक सूचना विज्ञान 21 वीं सदी में अवसर एवं चुनौतियां’ विषय पर नेचुरल रिसोर्स डेटा मैनेजमेंट सिस्टम इन उत्तराखण्ड द्वारा आयोजित सेमिनार में मुख्य अतिथि के रूप में बोल रहे थे।

आचार्य ने कहा कि जीआईएस केवल एक वैज्ञानिक खोज ही नहीं बल्कि एक जरूरत है। जिस प्रकार से सूचना प्रौद्योगिकी का विकास हो रहा है उससे साफ है कि आने वाला दशक बिना जीआईएस के उपयोग के पूरा नहीं होगा। उन्होंने इसके अध्ययन और

उपयोग को और प्रभाव्य तथा सारगर्भित बनाने की जरूरत भी जताई। डा. प्रभाद ए पाठक ने भी जीआईएस की महत्ता पर प्रकाश डालते हुए इसकी सम्पूर्ण जानकारी विद्यार्थियों को देने की बात कही। कुमाऊँ विश्वविद्यालय के कुलपति प्रो. वीवीएस अरंग ने कहा कि विश्वविद्यालय लगातार जीआईएस में शिरकत को।

पदाति को अपनाने का प्रयास कर रहा है। इस अवसर पर परिसर के निदेशक प्रो. एचएस धामी, भूगोल के विभागाध्यक्ष प्रो. जेएस रावत, प्रो. विजया रानी चौडियाल, लियाकत अली, प्रकाश जोशी, मयंक जोशी सहित अनेक शोधार्थी और सूचना प्रौद्योगिकी के छात्रों ने शिरकत की।

सेमिनार में मौजूद मुख्य अतिथि व अन्य। • हिन्दुस्तान

