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Databse Creation And Assesment Of Government Schemes

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Abstract: Multi-disciplinary program of Department of Science and Technology (DST), Govt. of India i.e. Natural Resources Database Management System (NRDMS) aims at developing an integrated database in order to facilitate decentralized planning for effective rural development. The NRDMS centres in Sri Soban Singh Jeena Campus College, Almora and BIT, Mesra, Ranchi have generated a number of thematic layers in GIS domain, which provide district, block and village level spatial information along with attribute data like census data. This database along with the Decision Support System (DSS) would help the planners in identifying the present gaps in planning process gaps and adopting a e-Governance approach towards decentralized planning. This paper attempts to develop required database and evaluate the outcomes and trends in developmental activities under several Govt schemes using NRDMS approach. The paper also reflects the constraints and e gap areas of the project.

Key words: NRDMS ,Geo-informatics, Decision Support System (DSS) and DST.

INTRODUCTION:

The goals of Good governance can be achieved by the use of new information and communication technologies and building e-society. This can help in overcoming the gap areas which the developing countries are facing in strategic and tactical areas; achieve the best practice in e-governance projects in order to avoid failure and to achieve success (Heeks, R.B., 2001). Sharing of spatial data by data providing agencies in the framework of Spatial Data Infrastructure (SDI) is an essential requirement in e-services delivery (Acharya et al 2011). E- District (viable unit) planning is now well over decade old in India and accepted by majority of states. GIS is being used as a viable tool by local level planners in decentralized planning (Report, 1988 and 1992).

To mobilize and to activate decentralized planning, Department of Science and Technology (DST), Govt. of India launched the NRDMS programme for potential users. NRDMS with goal of the programme is to develop Decision Support System (DSS). The objectives of the project are: To develop integrated database at different levels, i.e., from district to village level, to generate information and sectoral plans needed by the line departments, to provide assistance as and when required, to develop decision support system and to develop technology basket and adopt GIS based e-Governance towards decentralized Planning.

REVIEW OF LITERATURE

Many researchers have contributed on various aspects of district planning. Sundaram (1990) has stated to revitalize panchayati Raj and encourage of participation of local population in district planning and proposed an ecosystem approach in this regard. Malkia et al (2004) stated about many conceptions of e-Governance. Gadgill (1997) also stated that the several pitfalls of the centralized planning devoid of involvement of several studies have favoured district as a planning unit. The work on data integration according to their importance in decision making has also been performed at district level by Nathawat et al (2005), Rawat et al (2004a & 2004b), Ghosh et al (2001), Nathawat et al (2005) and Chattopadhyay (1982).Gaps in data/information at micro level are a crucial matter to be looked on for development of an area (Minhas, 1991). The constraints in capacity building using tools were also observed by Tiwari, (2003b) coming in the way of the wider application of GIS technology at district level. With above perusal it is assed that, the advocacy for the need of database for any planning exercise is still in infant stage with their limitation. The present paper proposes some preliminary outputs to evolve a model for district planning.

METHODOLOGY

Survey of India toposheets of districts on 1:50,000 scales were collected. The secondary data was also collected from census data of years 1991 and 2001, Digital out line map of districts, data of user departments i.e. medical, education, municipal corporation and district planning and village level information from the district administration.

For the preparation of the GIS database for the Districts -an information need assessment workshops were organized to prepare the list of the information needs of the stakeholders of the local level planning i.e. Forest, Agriculture, Horticulture, Soil Conservation, Jal Nigam, Jal Sansthan, Public Work Department, Irrigation, Tourism, Education and Electricity etc. of the districts. A list of information needs of these line departments was worked out to prepare training and non training areas. The Centres are using indigenous GIS software i.e. GRAM++ (Geo Referenced Area Management System) and Vec-Viewer.

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This system (Gram++) operates on a small and relatively low budget configuration and can be used as a viable tool by local level planners. The GRAM ++ can handle both vector and raster data. Vec- Viewer has the capacity to present the data in spatial form at any scale.

To sensitize the GIS technique among the local level planners, a District Coordination Committee was constituted with district administrators (i.e. District Magistrate, Sub-Divisional Magistrate, Chief Development Officer), and Heads of the line departments headed by the District's Magistrate and the Principal Investigator of the NRDMS Centres. A Nodal Officer was appointed to depute two trainees from respective department to generate data at the NRDMS Centre. The two to three weeks training was given to the trainers on GRAM++ in NRDMS Centres. The sensitization was done among the stakeholders of the local level planning and for systematic database creation.

STUDY AREA

The database of Almora in Uttarakhand and Ranchi in Jharkhand centres of NRDMS were studied. Almora having an area of about 3146 km2 is thickly populated has 4 Tehsils and 11 developmental blocks with 95 Nyay panchayat and 2244 villages. whereas Ranchi having an area of about 7698 km2 comprises of 20 blocks, 372 panchayats, 2057 villages and 9 census towns. According to 2001 census, the district because of the large concentration of ST population (45 per cent), all the 20 blocks come under the tribal sub-plan in the district. The spatial databases for both the centres were developed in GRAM++ (Geo Referenced Area Management System) and Arc-View GIS domain respectively. The databases were generated for District, Tehesil, Block, Nyay Panchayat and Village levels. Based on the assessment of the regional planning for identifying intra district disparities and sectoral development information needs, the relevant information has been generated in GIS domain. The available data has been converted to digital mode. A multi facet strategy was adopted to identify the data needs for performing GIS analysis.

RESULTS AND DISCUSSIONS

The NRDMS centre Ranchi has created static and dynamic database with queries and criterion based analysis (Weighted Index Method) which involves; spatial representation of non-spatial data to reflect the Intra-district disparities in economically and socially i.e. population density, SC/ST population, literacy, marginal workers, participation ratio etc. and Assessments of Village Development Index (Fig. 1).

Fig. 1
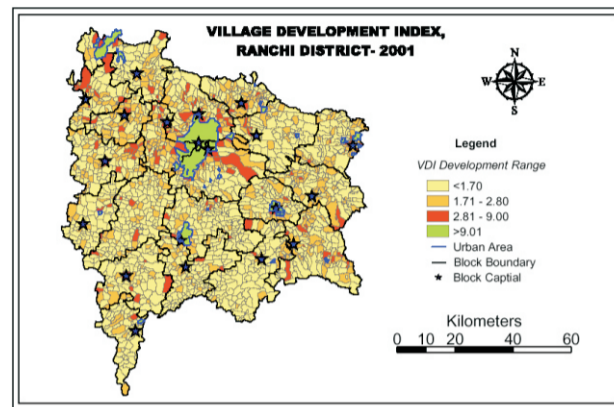
Village Development Index (VDI) using first principal component analysis and weighted sum method. Evaluation of Intra-District Disparities based on demographic indicators population density, SC/ST composition etc. & participation ratio of workers the derivation used for VDI was weighted sum method i.e.

$$I_i = W_1X_1 + W_2X_2 + W_3X_3 \text{ ----------------- (I)}$$

$$I_i = \sum_{J=1}^{n} W_j X_j$$

Where I_i = VDI for i^{th} village

W_j = Weight of the jth variables; X_j = Value of the jth variables

The steps were involved for determination of weights; determination of coefficient of correlation between variables, formation of correlation matrix, determination of Eigen values and determination of Eigen vectors corresponding to highest Eigen value. The variable were taken; 1st variable = Population Density, 2nd variable = Percentage Literacy, 3rd variable = Percentage participation of workers involved in economic activities. Marginal workers have not been included for VDI, because of low wages. as they are just round the corner of daily labour.

The integration of socio-economic data of census 2001 from district to the village level was generated. The 1991 and 2001 census data have been used for the intra district disparities. Different non-spatial parameters have also been used to derive different themes. The main trend of development occurred along major transportation network. The following parameters have been used to define the disparities specifically in the Ranchi district.

Percent Marginal Workers; at block level, the increase in marginal workers was observed. In spite of good development, the poverty has also been noticed because of the increase of marginal workers. Percentage Literacy; the pattern for the 2054 villages was observed. Population above six age is taken for calculate the population literacy. The higher numbers of literates are considered to be an impetus to development. It is used for measuring the level of socio-cultural progress of a society. Population Density; It is observed that the density of population distribution is widely varied in the district. A higher density is an indicator of a

Fig. 2

higher level of development. In urban areas, it shows high density. Percentage Participation Ratio; were taken for certain classes of workers i.e. Construction, trade and commerce, Transported and storage, manufacturing and household industries, and workers involved in other services.

The block wise percentage of schedule caste/ scheduled tribe population has also been calculated. The Centre has worked out with the district development commissioner (DDC) office and used the updated data for village level schemes. The data for Sampurna Gramin Rajgar Yojna SGRY), Rashtriya Sum Vikas Yojana (RSVY), initially the centre has established the scheme wise preliminary outputs. Under SGRY (Sampurna Grameen Rojgar Yojana) scheme the generation of employment of villagers is the main priority. In the first phase of the study; few blocks have been considered to find out the gap areas. Basically the scheme is divided into 20-30% for block and district development and 50% funds utilized for Panchayat level. The outputs have been delivered to the concerning department for the updating and the rectification. Results show that many villages are there which have not been covered under the schemes. The RSVY (Rashtriya Sum Vikas Yojana) scheme is introduced for the upliftment of the backward district or areas. It is noticeable that in the state there are 16 districts which come under this scheme. The outputs have shown the lacking areas (villages) which still require the implementation of the schemes.

Under Capacity building both the centre's are involved in imparting training to the line department officials for which the need assessment workshop had been conducted previously in which departments had participated and discussed on formulation of DCC and PMC, proposed identified needs and creation of nodal officers from different line departments. The data collection and database generation (query cell generation) is being done through requirement formats.

For district Almora the master database file (DBF format) has also been created for the broad divisions of the districts like; District, Tehsil, Block, Nyay Panchayat and Village level database along with generation of integrated spatial database, queries and intra-district disparities. The centre has created number of spatial layers at District, Tehsil, Block, Nyay Phanchyat and Village levels along with number of layers at district level on 1: 50,000 scales. For preparation the resource profile structured organization of the relevant datasets on an inventory is an essential prerequisite. Master Database (MDB) Files have also been created from State, division, Tehsil, block and Nayapanchayat level using MS-Access with defined fields (42 fields). The centre had taken a precious step for village level mapping (Fig.2). wherein orientation of villagers with cadastral map and toposheets, conduct of workshop and preparation of villagers' team with experts from NRDMS and district administration, ground survey by participants, preparation of base map by villagers, integration of details in GIS lab, preparation of resource map by the villagers and finally the village infrastructural map were generated.
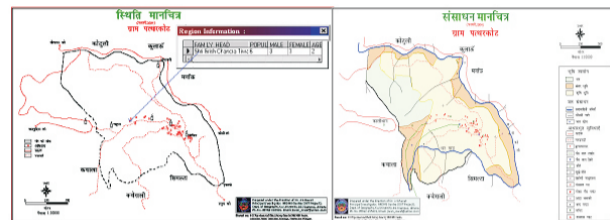
Gap Areas

In fact no organization are sharing data with others will lead to manipulations and wrong information's and error in planning implementations. The states are still at initial stage of e-Governance. Foremost requirement of using data of one source only like; census, should be mandatory for the entire department (GO should be released), with that the manipulation will reduce and data quality will increase. Data inflow and outflow is low because of communication gap with line departments. The use of common software is essentially required for smooth running and proper functioning of the e-Governance. For creating village level database and generation of digital maps, series of village level workshops for village level mapping is prerequisite. Timely data (line departments/ satellite) unavailability is hampering the progress. There are several factors and practical constraints coming in the way of making the GIS technology acceptable and adaptable to government agencies (Tiwari, 2002, 2003b).

Implications

To reach at better level of Governance, the system should be effective and result oriented. To achieve this it will require high degree of coordination and exchange of information; by taking initiative to share data base in all over the country's NRDMS center's. The need is required for zonal, regional and district Level workshops on geo-spatial database. The ambiguity related to use of software's Arc/info, Arc view and GRAMM++ for NRDMS activity should be rectified as early as possible.

Considering above facts, implementation should be done for the whole subcontinent for implementing the technology of GIS based e-governance. In fact the uniform database generation is need of an hour. The different database centres are creating data on different platforms. This is creating chaos among the scientific communities during sharing of data. Data formats should be same for all database centres to avoid any ambiguity during data sharing. There is a requirement of six (06) Zonal Training Centre's at All India basis i.e. North East, East, West, North, South and Central Zone. The thrust should be given on the basic training on the common software will be used by the user departments and the citizens. The main thrust should be on: Need Assessment, Database Generation and on Utilization of Results under DSS. Two to three days Intensive awareness training of higher officials of the regions is required. The same can be repeated and updated with the district center's of NRDMS; Three days training for the Block, Panchayat and Gram sabha level.

CONCLUSION

India is going with e- governance with infant stage and Government must make more and more use of modern technology. In short, there is no escape from more and more use of modern technology. With e-governance information's will be available at any front office to users beyond office hours and on holidays like service available to us from Indian Railways regarding availability in waiting list. Evaluation and monitoring of Government schemes through e-Governance will certainly reduce increase revenues, costs and will also increase accountability.

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