

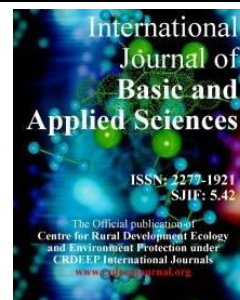
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Full Length Research Paper

Village Information System (VIS): A Step towards Rural Development in the Indian Himalayan Region

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ABSTRACT

India is a country of villages, as most of the population reside in villages. So the development of villages becomes an important and integral part for the efficient development of the country. Village Information System (VIS) is a gateway towards it. Village Information System (VIS) is a web based information system, in which management of village related information takes place in a technological environment. The objective of this application is to enable global availability of rural information in a single platform, which provides a mechanism for speedily retrieval of village information in a systematic manner in digital form to various stakeholders and consequently helps in multi-dimensional development of the villages. Adobe Dreamweaver is used as a front-end tool to design a graphical user interface, using html and CSS for web development. Interconnectivity takes place using Java as programming language. Oracle 10g is used as a back-end for design and development of database and SQL is being used for query execution for efficient retrieval and updation of database. The cluster of four villages of Someshwar Tehsil of Almora district of Uttarakhand state has been taken up as a pilot study for this Village Information System (VIS).

Introduction

As Mahatma Gandhi said "The future of India lies in its villages" and according to the Census 2011, 68.84% of the Indian population resides in villages/rural areas, indicating India is the country of villages. So, the development of villages plays a very important role in the efficiently integral part in the development of the country. Rural Development has been receiving increasing attention of the governments across the world. As a result various government and private organizations are working for the development of the villages. In a similar manner, Village Information System (VIS) is an approach towards the development of villages/rural areas. The data related to villages is still stored manually in file systems, which makes it difficult to update frequently. As a result, the unavailability of updated, authentic and complete information about villages creates hindrances in the development process. This makes planners and policymaker feel handicapped to make steps forward towards development. So to overcome this drawback of the system, Village Information System (VIS) is being developed. In this application data is made available digitally for everyone.

Need and Scope

Village Information System (VIS) is the management of village related information in the technological environment. VIS is an online web based information system. As a tool for decision support system the rural planners, district administration and policy makers are being helped on the one side, for planning of various government schemes for the development of villages as per the details of the village. In addition to planning, it also helps in quick decision making as all the data relevant to villages is available on single platform (VIS). So the data can be accessed in fractions of seconds as per requirement of user. On the other side, Village Information System helps villagers and stakeholders by providing details and updating them with detailed information of every government related schemes. As a result being familiar with the detailed information, villagers could find out their eligibility for the schemes and decide the best possible schemes for adoption and get benefits out of these schemes. This online web application enables global availability of rural information in a single place, which makes the retrieval of information speedy and systematic manner in digital form to

various stakeholders and consequently helps in multi-dimensional development of the villages.

Broad Objectives

Village Information System aims to provide the information system in the form of an online web portal to the villagers or citizens of rural areas for simplified, efficient, quick, effective, user friendly, anytime-anywhere, transparent services according to their needs & make them familiarize with the various government schemes. The broad objectives of this R&D activity are as follows:

- To develop a Village Information System (VIS) to support in decision making for villages.
- To generate database to provide relevant information for villages.
- To build capacity of stake-holders on VIS.

Study Area

The study area for this R&D activity consists of 4 villages of Someshwar Tehsil of Almora District in Uttarakhand State in India. These villages are Sakar, Darimkhola, Gwalakote and Jyula and located in the Kosi river basin on road head (Fig.1). The GPS coordinates; population and literacy status of these villages is shown in Table-1.

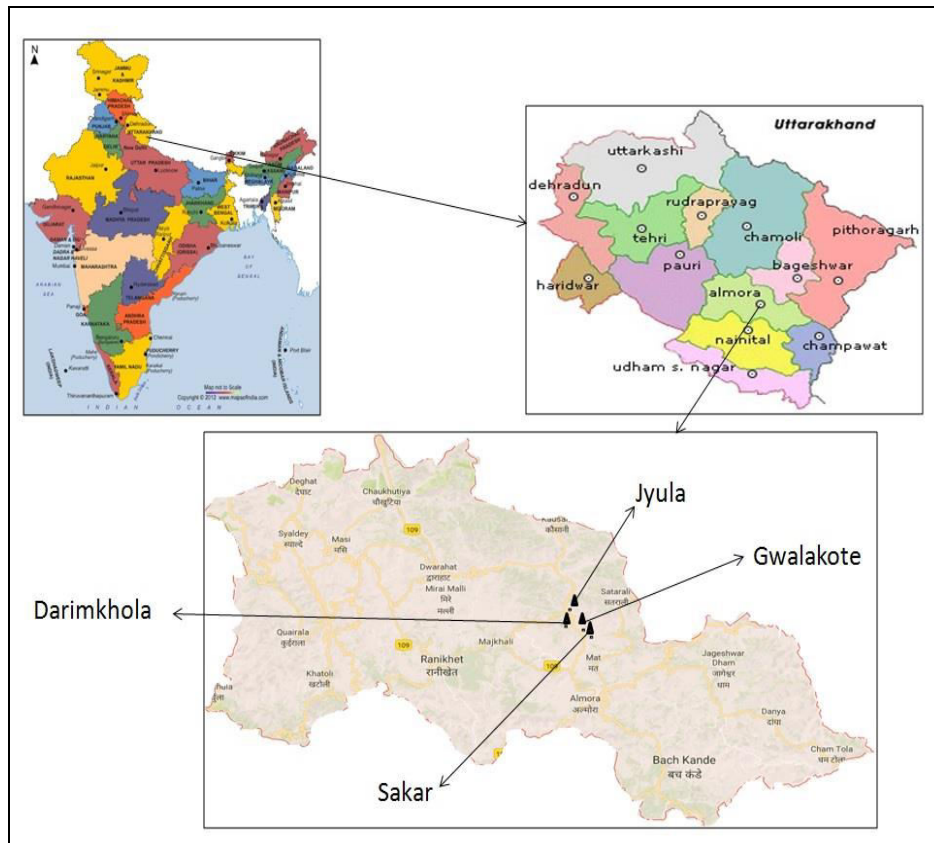


Fig.1. Study site of R&D activity.

Table-1. GPS coordinates, population and literacy status of the study site.

Village	Latitude	Longitude	Altitude	Population (in Number)	Literates (in Number)
Sakar	29° 42' 33.6636" N	79° 37' 55.0704" E	1261 m	301	250
Darimkhola	29° 41' 54.402" N	79° 37' 47.4888" E	1270 m	406	330
Gwalakote	29° 42' 24.5376" N	79° 37' 37.38" E	1305 m	549	441
Jyula	29° 43' 21.2268" N	79° 37' 4.53" E	1302 m	361	286

Methodology

The methodology adoption starts with the selection of study site. The cluster of four villages as mentioned in Fig.1 above has been selected for this R&D activity. The second step is the collection of data from different data sources. The Primary data was collected through village survey by visiting each household. The data was collected by opting the methods like questionnaire, personal interview, meetings and group discussions with the villagers. The secondary data was

collected through internet/websites, by visiting libraries, government departments, etc. After collection of data, the data was compiled and analysed and then followed by the steps of Software Requirement Specification (SRS) and Software Development Life Cycle (SDLC) for the development of online software model. This resulted to the website, which is an online information system named Village Information System as an output. The steps involved in the methodology adopted for VIS are shown in Fig. 2:

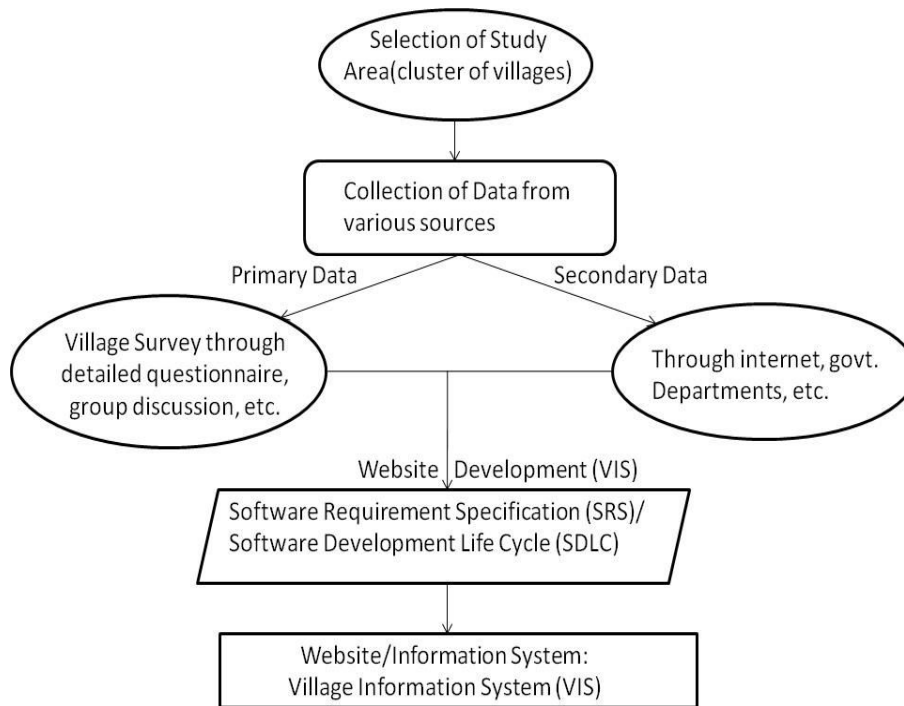


Fig.2. Graphical representation of methodology adopted for VIS.

Conceptual Framework

The Fig.3 depicts the conceptual framework of web based Information System. It is a diagrammatic representation of work-plan used for efficient development of Village Information System (VIS). For the fulfilment of the purpose, a pilot study has been carried out on the cluster of four villages. The database is developed for these villages by opting two methods of data set generation. For the collection of primary data set, each household is visited and questionnaire method of Participatory Rural Appraisal (PRA) is being performed. Secondary data is collected by visiting different government departments, village institutions, NGO's, libraries and through internet, etc. The Primary dataset includes general village information like about village, family detail, land detail, agriculture detail, livestock detail, basic facilities of a household, education status, details on government schemes functional in the village, details about natural resources available in the village and other details such as income, climatic conditions, Adhar number, etc. The list of state and central government schemes available for implementation in villages is being collected from government departments as secondary dataset along with detailed information about the process of implementation and benefits provided through these schemes to the rural mass. Villagers, farmers, village institutions, NGO's, government departments, village panchayat, etc. are the actors involved in the rural system. The identification of key issues related to rural development are finalised through group discussion, meetings, workshops and brainstorming with these actors of rural system. Focussing the key issues of rural development, collected data has been compiled and analysis of datasets is being done. During the systematic analysis of data, emphasis is given on two major points, i.e., villager's feedback w.r.t. various government schemes and constraints associated with these schemes in proper implementation at village level. Now keeping all the above points in mind and using Information and Communication Technology (ICT) tools, development of

online database is being initiated. The steps of System Requirement Specification (SRS) and Software Development Life Cycle (SDLC) of software engineering are being followed for development of the website. Then the connectivity process of online database with this website has been completed. After these steps, an interactive web application has come out as a result which named Village Information System (VIS).

Results & Discussion

The objective of this R&D activity is to develop an online web application, Village Information System (VIS) to support in decision making for villages and to generate database to provide relevant information for villages. Village Information System (VIS) provides an online database which contains complete information about the villages covered in this study. Village Information System helps in quick decision making, planning and implementation of various plans for the development of villages. The Fig.4 depicts the developmental approach used for the development of the Village Information System. As shown in the diagram, the developmental approach consists of three broad steps, namely: Data Collection, Data Synthesis and Decision Support System. First of all requirement gathering is done through data collection. In which village survey, department visit, internet search took place for the collection of all the required data about the rural areas. Then the data synthesis part comes into play. Here categorisation of all the data gathered takes place, followed by data entry and documents of the categorised data. Then the decision support system, final step of the developmental approach. In this step digitization of govt. schemes takes place with the final connectivity of the database with the website, followed by making the output (VIS) available online. Some related publications are published and are used to conduct relevant trainings with stake holders.

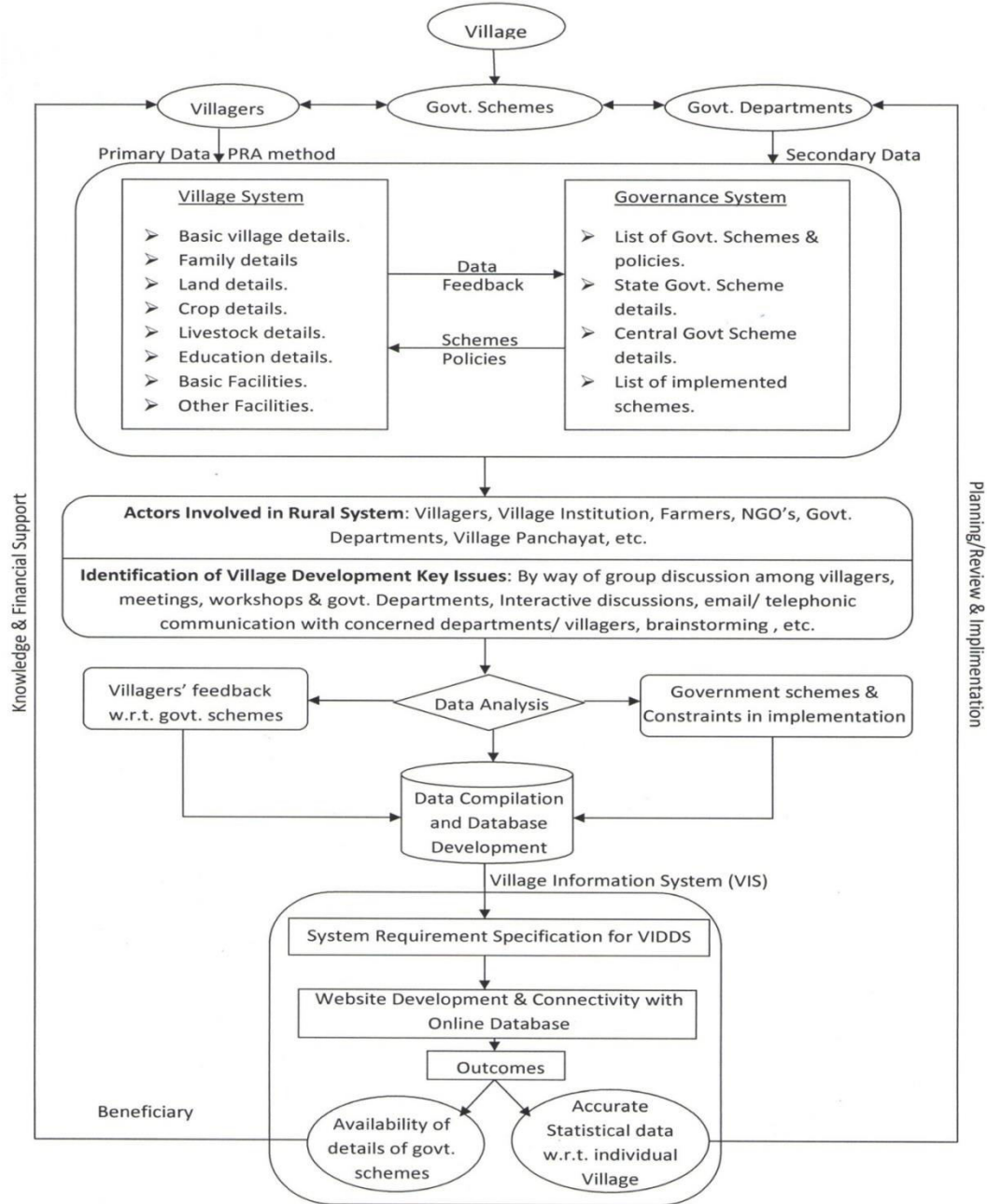


Fig.3. Conceptual framework for VIS.

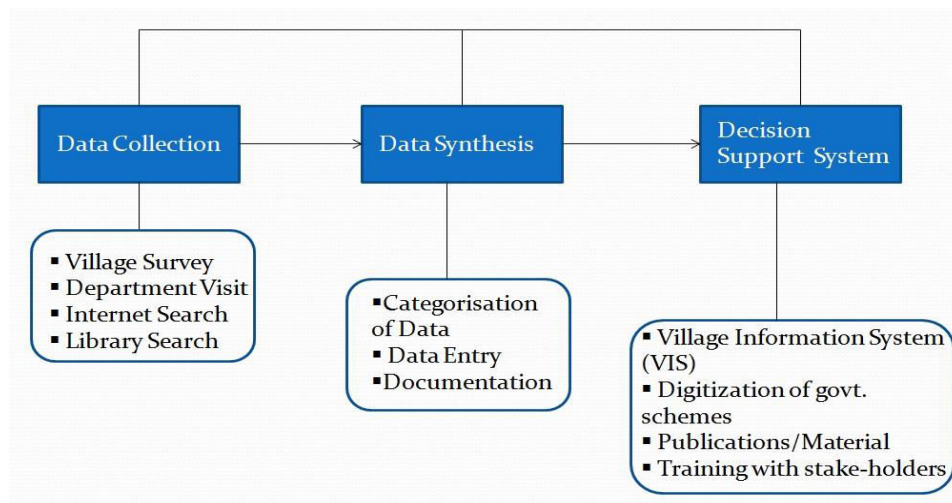


Fig.4. Developmental Approach for Village Information System (VIS).

The web application Village Information System (VIS) results major information for villagers as well as government officials in two broad ways. Fig.5(a) depicts the format of detailed information of government schemes made available for villages & stake holders. Department wise categorisation of schemes is being done for the convenience of the users. Here the detailed information of schemes, including the eligibility criteria, benefits, process of execution, etc. All is made available for users, villagers. Fig.5(b) depicts the way in which

the rural data is available for the government officials. Here all the relevant information related to a village is available, what so ever is needed for the development of new policies for the development of related village. As shown in the figure, the data consist of every parameter of village related study. This was never done before. From the literature available, findings say work related to village development has been done before, but not in this aspect. So, these two aspects are included here in this study.

SN	Name of Department	Name of Scheme	Benefits	Eligibility for Schemes	Process for Execution
1.	समाज कल्याण विभाग	(1) पेंशन योजना (Pension Scheme)			
		(i) वृद्धावस्था पेंशन (Old Age Pension)	इस योजना के तहत रु० 800 की धनराशि प्रतिमाह दी जाती है। पेंशन की धनराशि 3-3 माह की 4 किस्तों में प्राप्त की जाती है।	(i) उत्तराखंड का निवासी। (ii) आयु 60 वर्ष पूर्ण हो। (iii) बी.पी.एल. परिवार का हो या समस्त स्रोतों से मासिक आय रु० 4000 हो या इससे कम हो। (iv) किसी अन्य योजना से पेंशन का लाभ प्राप्त न कर रहा हो।	आवेदन पत्र को पूर्णतया भरकर, परिवार रजिस्टर की छायाप्रति, बी.पी.एल. होने पर बी.पी.एल. कार्ड की प्रति, पटवारी तथा तहसीलदार की रिपोर्ट के आधार पर प्रदत्त आय प्रमाण पत्र एवं सभी औपचारिकताएँ पूर्ण करने के पश्चात खंड विकास अधिकारी के माध्यम से समाज कल्याण कार्यालय को प्रेषित किया जाना होता है।
		(ii) विधवा पेंशन (Widow Pension)	इस योजना के तहत रु० 800 की धनराशि प्रतिमाह दी जाती है। पेंशन की धनराशि 3-3 माह की 4 किस्तों में प्राप्त की जाती है।	(i) उत्तराखंड का निवासी। (ii) जिनके पति की मृत्यु हो चुकी हो तथा उनकी आयु 18 से 60 वर्ष हो। (iii) बी.पी.एल. परिवार का हो या समस्त स्रोतों से मासिक आय रु० 4000 हो या इससे कम हो। (iv) किसी अन्य योजना से पेंशन का लाभ प्राप्त न कर रहा हो। (v) आवेदन पत्र के साथ पति का मृत्यु प्रमाण पत्र संलग्न किया जाना अनिवार्य है। (vi) पुनर्विवाह करने पर यह पेंशन बंद कर दी जाती है।	

Fig.5(a). Format of Govt. Schemes available in VIS.

S.N.	Population												Income			Social Composition			
	Total		Age (in years)										APL	BPL	Others	General	SC		
			<7		7 to 17		18-40		41-60		60+								
M	F	M	F	M	F	M	F	M	F	M	F	M	F						
1	5	3	1	0	1	0	1	0	3	2	0	1	0	0	1	0	0	1	0
2	1	4	0	1	0	1	0	1	1	0	0	0	1	1	0	0	0	1	0
3	3	2	0	0	1	0	1	1	1	1	0	0	1	0	0	0	1	0	
4	2	3	0	0	0	0	0	1	1	1	1	0	1	1	0	0	1	0	
5	5	4	2	1	0	0	0	2	2	1	1	0	0	1	0	0	1	0	
6	4	3	1	0	0	0	0	2	1	1	1	0	1	1	0	0	1	0	
7	6	9	0	1	2	4	1	2	2	2	1	1	1	1	0	0	1	0	
8	2	5	0	0	1	4	1	1	0	0	0	0	0	1	0	1	1	0	
9	2	4	0	0	0	0	0	1	3	1	1	0	0	1	0	0	1	0	
10	3	3	0	0	0	0	1	2	1	0	0	1	1	1	0	0	1	0	
11	3	2	1	0	0	0	0	1	1	0	1	1	0	1	0	0	1	0	
12	3	3	0	0	1	0	0	0	2	1	0	1	1	1	0	0	1	0	
13	0	1	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0	

Fig.5(b). Tabular View of rural data available in VIS.

The following pictures depict the first look of the online Village Information System (VIS). This is the final output as

an online information system available in the form of a dynamic website named Village Information System.

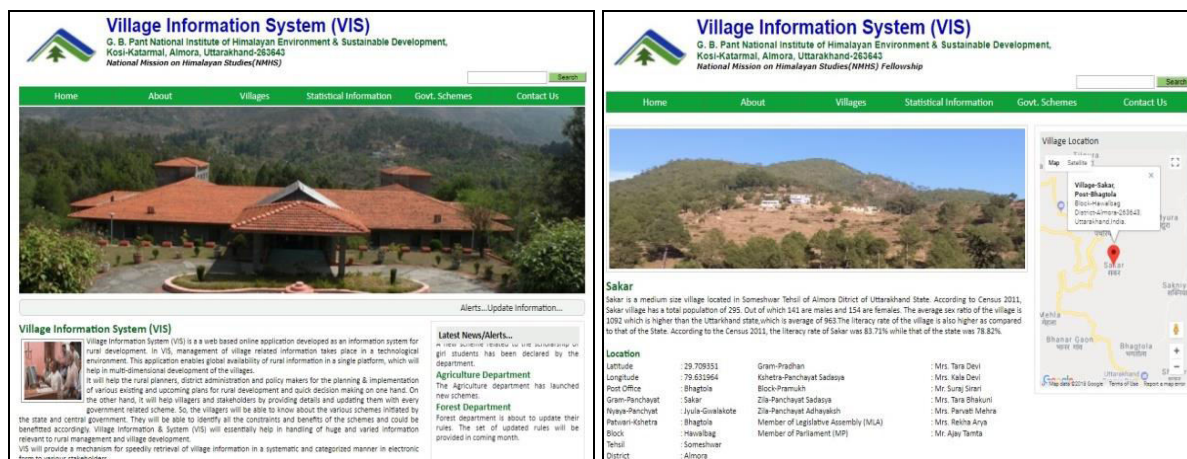


Fig.6. Web view of Village Information System (VIS).

Conclusion

Village Information System (VIS) is a decision system support tool which is available online 24x7 and can be accessed easily from everywhere and anytime. VIS is a bi-directional Information System, and information flow in this system is from villagers to government departments and vice versa. On the one hand, it helps government officials, policymakers to access updated information about the villages and it helps them in making effective policies and plan for the rural development and also helps them in taking decisions on various aspects on rural development. On the other hand, it helps villagers to access information about various government schemes and procedures of taking advantages of these schemes in their own languages. Village Information System (VIS) is playing a very crucial role for sustainable development of rural areas and upliftment of livelihood of the village people.

References

1. Tiago H. Moreira de Oliveira, Marco Painho, Vítor Santos, Otávio Sian, André Barriguinha (2014). Development of an agricultural management information system based on Open-Source solutions. *Procedia Technology*, Vol. 16, pp. 342 – 354.
2. Marek J. Druzdzal and Roger R. Flynn (2002). Decision Support System Essay. Decision Systems Laboratory School of Information Sciences and Intelligent Systems Program, University of Pittsburgh Pittsburgh.
3. Arvind Selwal (2012). A Decision Support System for Village Economy Development Planning. *Emerging Technologies in E-Government*, pp. 06 – 13.
4. Aher, S. P. (2012). Village Information System: A Role Model for Sangamner Tahsil Villages in Ahemadnagar District of Maharashtra. *Online International Interdisciplinary Research Journal*, Vol.2(4), pp. 64 – 71.
5. Raj.Rashmi, B. P. Lakshmikantha (2012). Web Based Karnataka State Watershed Information System. *14th Annual International Conference and exhibition on Geospatial Information Technology and Application*.
6. Yedage, Anil (2015). Geospatial Analysis for Village Level Social Profiling: A Case Study of Solapur District. *International Journal of Recent Scientific Research*, Vol. 6(10), pp. 6815-6820.
7. Ravidra, A. and Jaishankar, J (2007). GIS based information system for village level planning, access on December 2012 NIC (National Informatics Centre). Ministry of Communication and Information Technology, Government of India, New Delhi.
8. Shrikant G. Jadhav, G.N. Shinde (2011). A Web Based Information & Advisory System for Agriculture. *International Journal of Innovative Technology & Creative Engineering*. Vol. 1(2).
9. Sarma, G. S. (2016). Creation of Web Based Decision Support Information System For Evaluation of Topographic Characteristics Using Remote Sensing & GIS and Visual Basic Programme. *International Journal of Civil Engineering and Technology*, Vol. 7(1), pp. 621–634.