

## **PEOPLE'S GIS FOR SUSTAINABLE DEVELOPMENT**

**Dr Vasala Madhava Rao\*\***

Timely and reliable information on cost effective manner in spatial and temporal domain, which can act as a reliable baseline information on natural resources at scale ranging from regional to micro levels, can be generated by Geographic Information System(GIS), which can help integrated analysis for natural resources inventory, management and planning the strategy for sustainable development and stand as a proven effective administrative and management tool for decision making.

Rural development mission has been to bring in all-round development of rural people and the area and in the improvement of the quality of lives of rural populace by appropriate economic and gainful activities, advancement in literacy and health standards and through information dissemination and empowerment.

In Panchayat Raj or decentralized administration, empowering various tiers of governance with decision making power needs complex data and information on various aspects and to analyze these data parameters and taking decisions based on this database often is not easy. Further the element of cost and time overrun and the ease of use and interactive process necessitate IT Tools like GIS which has proven track record of data storage, analysis, retrieval, decision alternatives and presentations, by integration of both spatial and attribute parameters that reflect the true representation of field situation. Analysis of these databases help decision support system with wide decision alternatives and it's probable decision outcomes.

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\* Associate Professor, Geomatics Cell, Centre for Micro Planning, National Institute of Rural Development, Hyderabad 500030, India.

As India lives in its villages and as Indian Constitution has empowered people to take decisions for themselves, there is need to reengineer Gram Panchayat (Village Level Self Government) planning efforts on a real time basis and in a cost effective manner and yet integrating all fabric of rural economy and life. And GIS is going to give this canvas and make it possible for credible, achievable and sustainable Gram Panchayat level planning and live up to “Gram Swarajya(Sustained Village Economy)”, the dream of the father of Indian Nation, Mahatma Gandhi. .

## **OBJECTIVES**

The broad objectives of the study was to develop an Interactive GIS Package for Gram Panchayat Planning, to be used by the Gram Panchayat and local bodies, at grassroot level summarized as under:

1. To develop an Interactive GIS Gram Panchayat level Plan
2. To integrate all aspects of rural economy and life
3. To analyse spatial spread of infrastructure and link it up with resources and optimum utilisation
4. To devise an Action Plan for the Gram Panchayat Level Planning on an interactive mode in a GIS platform.
5. To test the Interactive GIS based Gram Panchayat Plan on pilot basis .

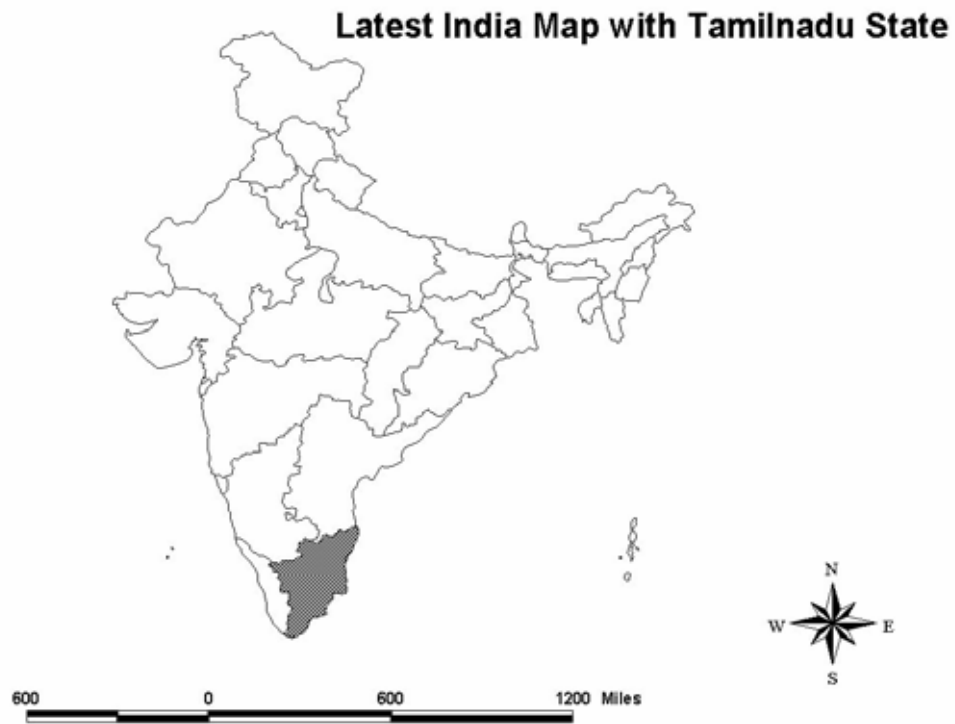
## **STUDY AREA**

The study area choosen was the Villivalam Gram Panchayat of Wallijabad Block of Kanchipuram District ,Tamil Nadu State, a Southern State in India.

The purpose was to give appropriate development initiatives in planning, monitoring and projectisation by the local people of Villivalam Gram Panchayat and the local bodies, for developing a reliable database and take decisions based on the same.

NIRD(National Institute of Rural Development,India) has been operating in developing this Panchayat since last few years through participatory mode, involving people in various activities and implementing projects and programmes by local people themselves.

Development of an Interactive GIS Package for these people is a modest attempt to take IT to the door steps of the local people to reap benefits of IT at the lowest level, making IT as a mass movement.

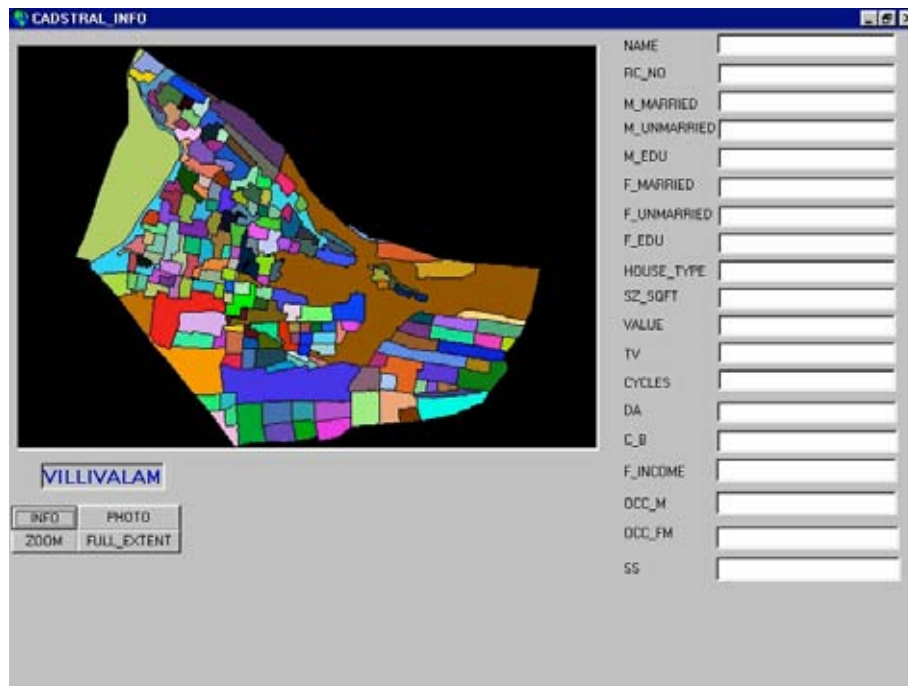
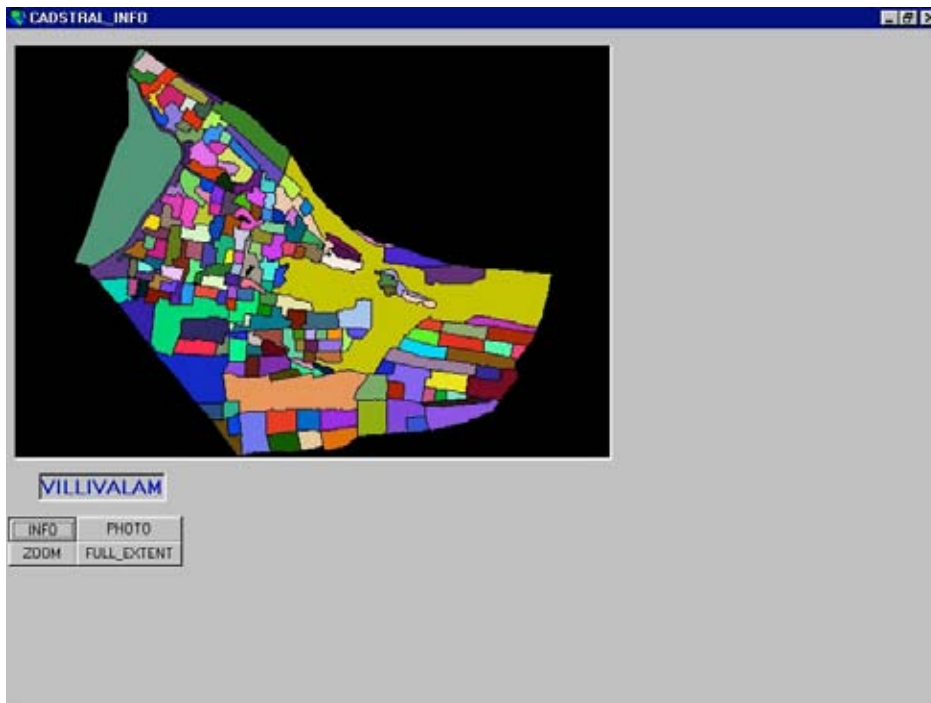


# Kanchipuram District




## *INTERACTIVE GIS BASED GRAMPANCHAYAT PLAN S*





CADSTRAL\_INFO




VILLIVALAM

INFO PHOTO  
ZOOM FULL\_EXTENT


NAME	U GOPAL
RC_NO	03/P/090470
M_MARRIED	1
M_UNMARRIED	2
M_EDU	2
F_MARRIED	1
F_UNMARRIED	1
F_EDU	0
HOUSE_TYPE	K
SZ_SQFT	277
VALUE	6000
TV	0
CYCLES	0
DA	0
C_B	82
F_INCOME	6000
OCC_M	1AGL
OCC_FM	1WE
SS	BC

CADSTRAL\_INFO




VILLIVALAM

INFO PHOTO  
ZOOM FULL\_EXTENT



NAME	A.SABAPATHY
RC_NO	03/Y/083104
M_MARRIED	1
M_UNMARRIED	2
M_EDU	1
F_MARRIED	1
F_UNMARRIED	1
F_EDU	1
HOUSE_TYPE	P
SZ_SQFT	325
VALUE	25000
TV	B/W
CYCLES	1
DA	0
C_B	0
F_INCOME	13000
OCC_M	2WE
OCC_FM	0
SS	BC

**CADSTRAL\_INFO**

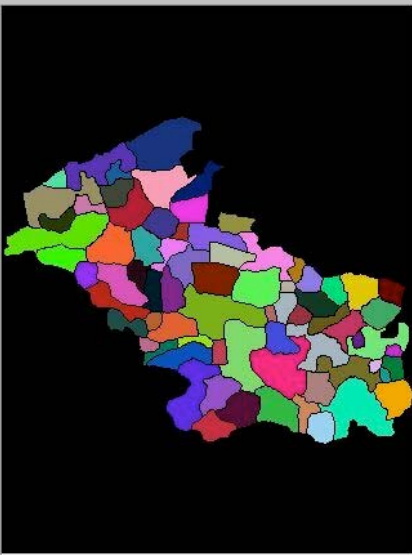


**MILLIVALAM**

INFO PHOTO  
ZOOM FULL\_EXTENT

NAME	R.SARSWATHI
RC_NO	03_Y_003001
M_MARRIED	0
M_UNMARRIED	2
M_EDU	1
F_MARRIED	3
F_UNMARRIED	1
F_EDU	0
HOUSE_TYPE	P
SZ_SQFT	160
VALUE	15000
TV	B_W
CYCLES	1
DA	0
C.B	0
F_INCOME	10000
OCC_M	1AGL
OCC_FM	1AGL
SS	BC


**VILLAGE\_INFO**



YEAR

SAVE ADDNEW INFO PICTURES SLIDE SHOW

VILLAGE\_INFO



VILLAGE NAME

MALE

FEMALE

M\_MALE

UN\_MALE

M\_FEMALE

UN\_FEMALE

EDU\_MALE

EDU\_FEMALE

RC\_PINK

RC\_YELLOW

RC\_GREEN

TOT\_LAND

TOT\_HOUSES

AGRI\_LABOUR

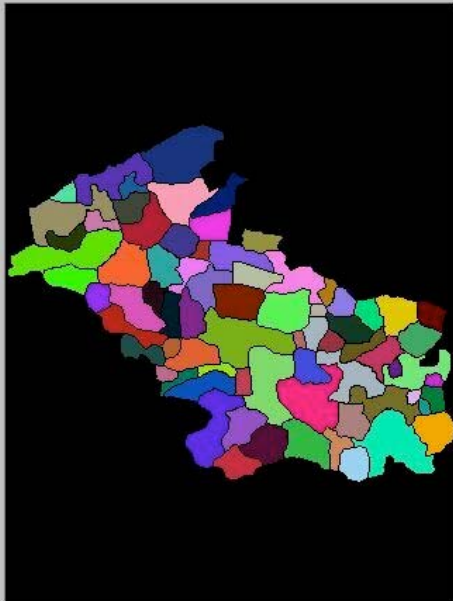
TEA\_SHOP

TAILOR

YEAR

SAVE ADDNEW INFO PICTURES SLIDE SHOW

VILLAGE\_INFO



VILLAGE NAME

MALE

FEMALE

M\_MALE

UN\_MALE

M\_FEMALE

UN\_FEMALE

EDU\_MALE

EDU\_FEMALE

RC\_PINK

RC\_YELLOW

RC\_GREEN

TOT\_LAND

TOT\_HOUSES

AGRI\_LABOUR

TEA\_SHOP


TAILOR

YEAR

SAVE ADDNEW INFO PICTURES SLIDE SHOW



VILLAGE\_INFO




VILLAGE NAME	KOYAMBAKKAM
MALE	12
FEMALE	36
M_MALE	68
UN_MALE	212
M_FEMALE	36
UN_FEMALE	54
EDU_MALE	90
EDU_FEMALE	362
RC_PINK	47
RC_YELLOW	102
RC_GREEN	365
TOT_LAND	212
TOT_HOUSES	25
AGRI_LABOUR	13
TEA_SHOP	16
TAILOR	17

YEAR: 2001

SAVE ADDNEW INFO PICTURES SLIDE SHOW


VILLAGE\_INFO



VILLAGE NAME	VILLIVALAM
MALE	689
FEMALE	691
M_MALE	337
UN_MALE	352
M_FEMALE	389
UN_FEMALE	302
EDU_MALE	262
EDU_FEMALE	149
RC_PINK	116
RC_YELLOW	102
RC_GREEN	2
TOT_LAND	269
TOT_HOUSES	321
AGRI_LABOUR	249
TEA_SHOP	2
TAILOR	2

YEAR: 1999

SAVE ADDNEW INFO PICTURES SLIDE SHOW



## **PROCESS METHODOLOGY**

The base data forms the attribute database and the maps, the spatial database. These databases are integrated in a GIS platform and an information system is developed.

The developed information system is embedded with query facilities so as to make it interactive.

The presentation was made by Arc View GIS Software and Map Object Software and the customisation was made by Map Object and Visual Basic.

There is flexibility built in the Interactive GIS Village Plan to adopt to new situations and environments.

The pilot software is being provided to the Gram Panchayat and the GP functionaries, are being trained to use the same.

The Softwares used are Arc Info 3.5.1, Arc View 3.1, Map Object 2.0 and Visual Basic 6.0, for developing the Interactive GIS for Gram Panchayat Planning.

The Out Puts on the Window Screen are placed for visualizing the Software capabilities and outcomes. The Software has the capabilities to update database and the files are saved in new databases, which facilitates comparison of data over time period, for studying the impact of schemes or programmes or impact of schemes or programmes or development initiatives and in detection of changes.

The photographs of each household family members are embedded with the house at the back drop. The profile of each household is available. The Villivalam Gram Panchayat profile with graphics are also available at Gram Panchayat layer.

All formats are placed in window format for ease in use and understanding at the local level with Visual Basic 6.0 Software.

With a Training of one day, a person with high school qualification can operate the software and maintain the same. Any new parameters can be added and the software can be upgraded from time to time based on the need of the time, without losing any data.

## **OBSERVATIONS**

The striking revelations in this study is the fact that local people are greatly enthusiastic in adapting to new technology and new way of working together and takes lot of interest in knowing new ways of doing things.

Secondly the people at the local level raise above political, economic and social affiliations, and express their solidarity in effecting the new tools and technology in their day to day work.

The women participation was quite encouraging and they come forward for propagating the use and adoptability to new way of doing things.

The younger mass feel social upheaval and increase in their social status in exposure and use of new IT Tools at the local level.

The people's representatives give all encouragement and support and stand by the people in introduction of new technology and in new ways of doing things, irrespective of their political affiliations.

The district and local administration takes great interest in introducing new IT Tools and request development of these tools with inbuilt functionality of day to day administrative use at all level, in improving their performance and effectiveness and express their support and cooperation in any attempt in this regards.

## **REPLICABILITY**

The Interactive GIS for Gram Panchayat Software has great replicability potential. The replicability is based on data generation unique to different situations and maps and graphics, pertaining to that situations and environment.

The Software is a methodological study and the software is a canvass, it can fit in any situations and at any place, for use at their level by making parameters customized to the new situations.

There are quite a lot flexibility and potential available for adding additional features and in making it a wide spectrum software.

Other rural development programmes and projects, planning, monitoring, decision support system etc can be integrated with the software making it versatile and proven widely use general purpose software, at all levels of decentralized process, by both administrative functionaries as well as by local bodies, voluntary organizations, bankers, international agencies and corporate bodies.

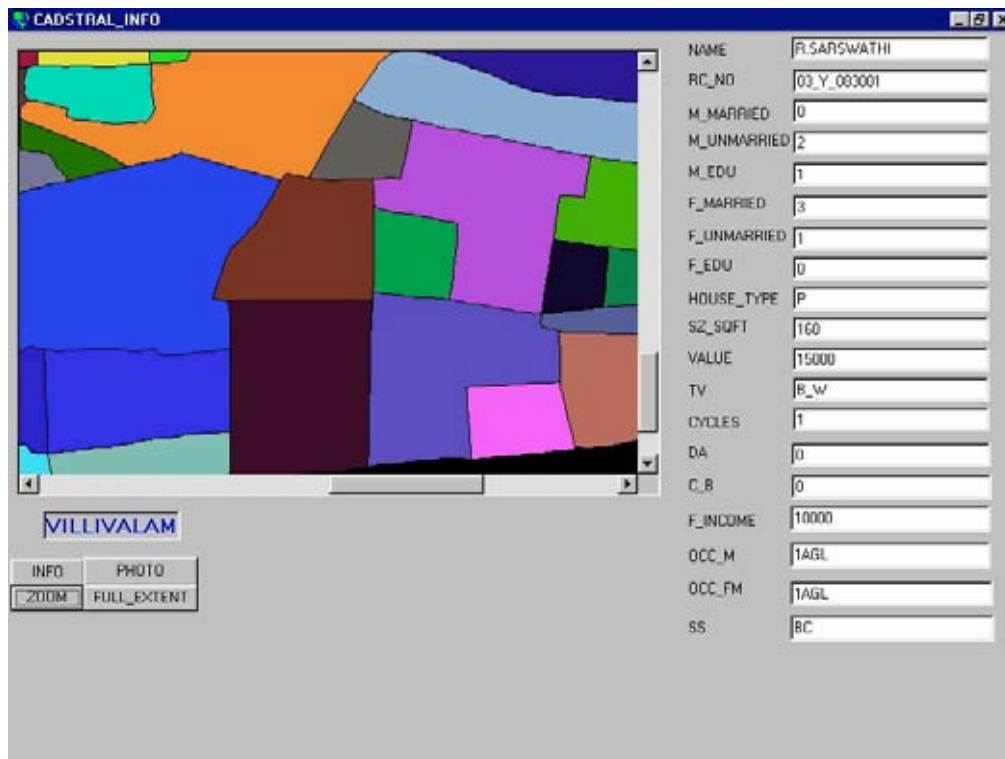
Further development and customization are underway for making a branded GIS software promoted by NIRD and Ministry of Rural Development for distributing to all Gram Panchayats.

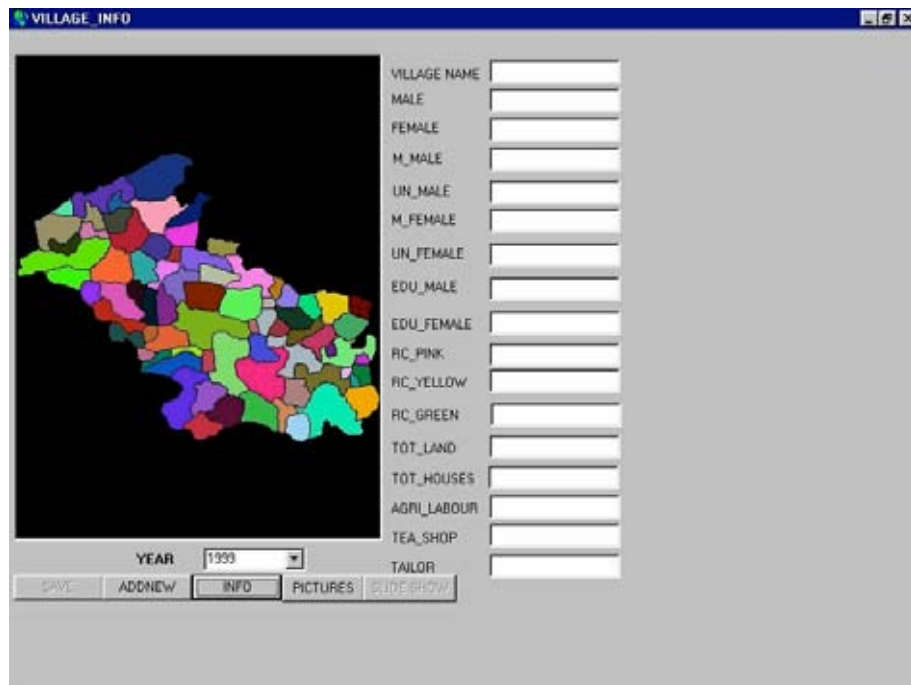
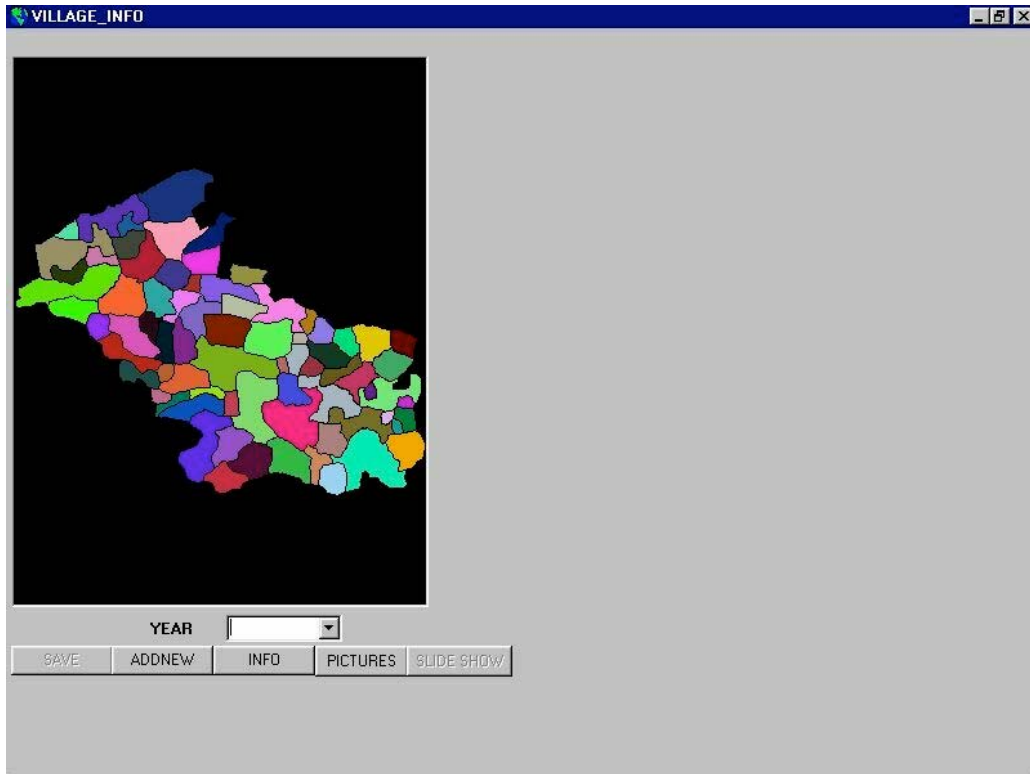
## **CONCLUSION**

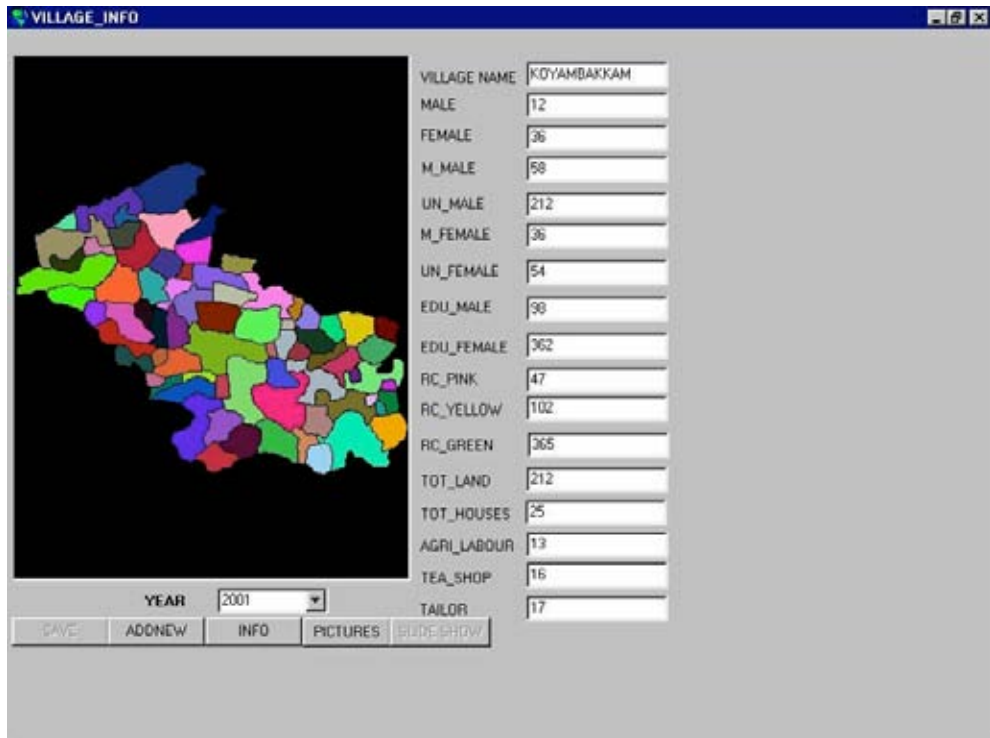
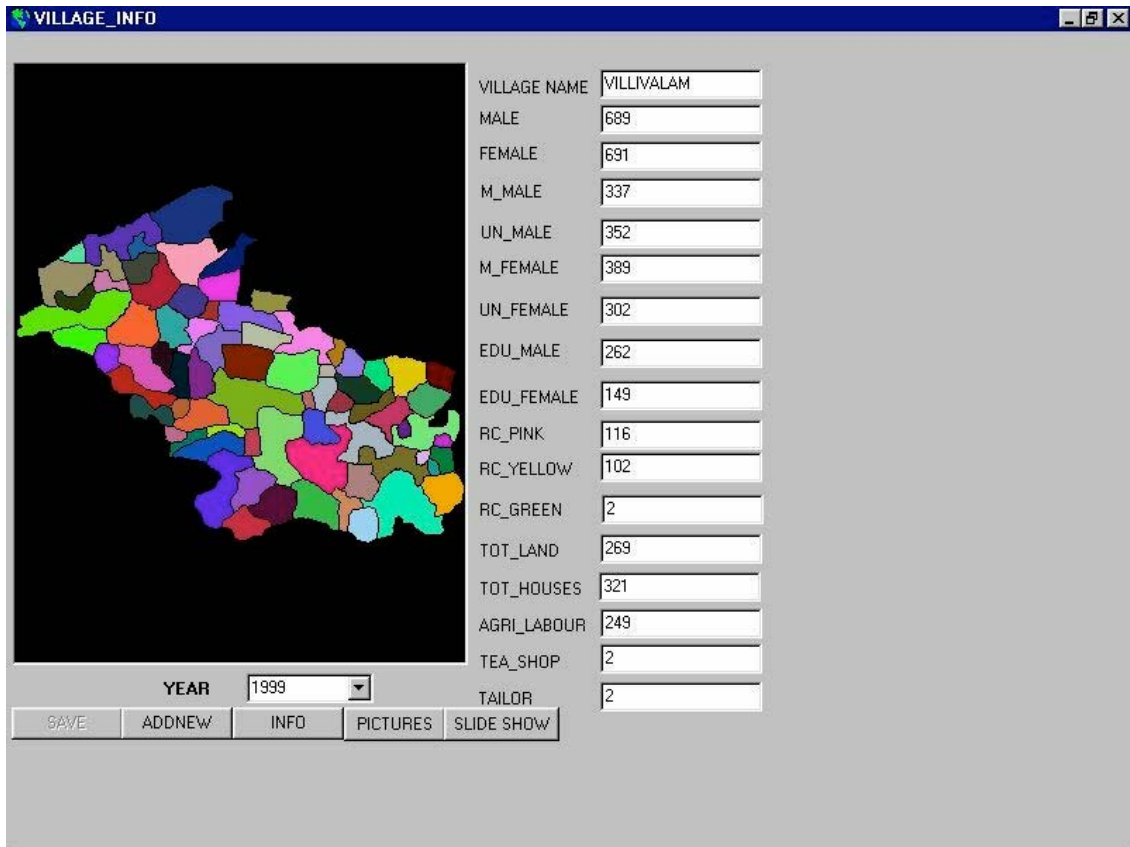
With varied complexities of data availability and analysis and with multitudinal dimensions of projects handling and the pressure for generation of multi-use reports and formats , it's imperative to use simple and user friendly IT Tools like Interactive GIS for Gram Panchayat Planning, at all levels of administration and governance.

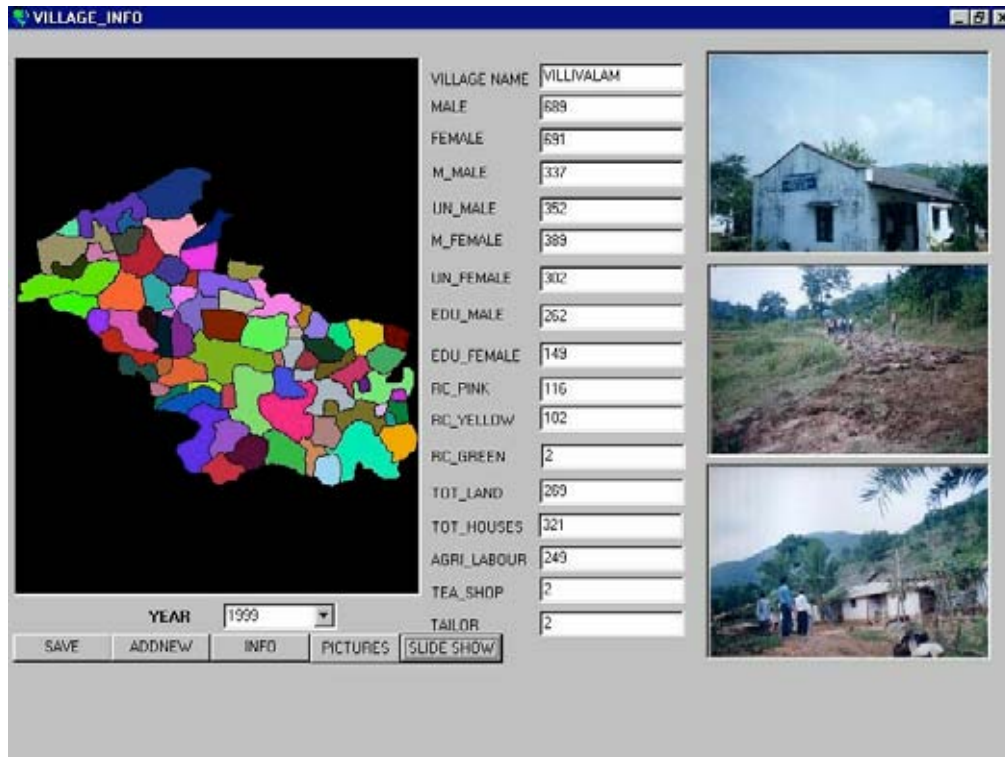
With the empowerment process peculating to all levels and involving people as stakeholders and decision makers, the support system, like the present IT Tool, would help them to gear up and speed up, the decentralization process and bring in visible development in all fields by information storing, processing, analyzing , presentations and by taking appropriate decisions.

IT Tools such as Interactive GIS for Gram Panchayat Planning would usher new avenues and opportunities in marshalling our efforts to turn the static inherent features into a potential throbbing dynamic forward looking movement.









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