Blooming knowledge society and information literacy in India

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Abstract: The revolution of the technology that allows people to transmit and receive information has opened a new age in the history of mankind. Alongside the rise of e-commerce, e-health and even e-democracy, the Internet has been positioned as a potential saviour of lifelong learning and learning society. The information technology revolution is creating a new form of electronic, interactive education that should blossom into a lifelong learning system that allows almost anyone to learn anything from anywhere at anytime. This paper discusses the e-governance initiatives undertaken by the Government of India, non-profit and non-government organisations. The role of different types of libraries in providing e-government information and services to the population is discussed with more emphasis on public and government libraries. Also highlights the importance of information literacy and lifelong learning in effectively utilizing the e-governance initiatives undertaken in different parts of rural India and proposes possible programs and initiatives for implementation of information literacy and lifelong learning.

Keywords: Knowledge Society, Information Literacy, Lifelong Learning, ICT, E-governance, Learning Society

Dawn of Internet in India

Internet is regarded as the fifth network of the modern age. The first four networks were the telegraph, the railroad, the telephone and the electric network. Each of these networks had an enormous impact on how people live, work and communicate and the Internet is no exception. Ofcourse India is a late starter to the Internet phenomena; still it is getting online at a remarkably fast pace. Internet services in India were started in 1991 through the ERNET to connect the various academic institutions and research bodies. Internet was introduced for commercial use in 1995 through the government owned VSNL (Videsh Sanchar Nigam Limited) as the sole Internet Service Provider (ISP). The last decade has seen the birth and growth of Internet as a phenomenon that has transformed the life of the people in several respects. India has emerged as the fastest growing country of Internet users, surpassing the growth rates in the United States, China, Japan and has been ranked the 8th largest country in terms of netizens. The number of people using Internet worldwide grew by 10 per cent in a

year till January 2007 (747 million people), with India topping the growth chart with a 33 per cent jump, a new study shows. According to data compiled by Internet usage tracking firm, comScore Networks, India has over 21 million Internet users aged over 15 years at the end of January 2007 (against below 16 million a year ago). While the United States has retained its position being home to the world's biggest online population with over 153 million total Internet users; it registered a marginal growth of just two per cent in a year. China has emerged as the second biggest Internet population with 86.8 million users, followed by Japan with 53.6 million, Germany (32 million) and the United Kingdom (30 million). Among the top 15 countries ranked according to penetration, net users in India grew by the maximum 33 per cent. However, India has lost out in the list of top 10 nations in terms of time spent on Internet (Deccan Herald, 2007). In order to address the challenges of cost of personal computers, cost of connectivity and IT literacy; the Government of India formed Information Technology Task Force in 1998. Accordingly, the IT Action Plan for India is also prepared containing 108 recommendations covering both bottleneck areas and broad promotional measures that are crucial for boosting IT in India [Bakshi, 2005].

The year 2000 saw another remarkable development in the application of ICTs in India. In order to boost e-commerce in India, the government passed the Information Technology Bill in May 2000. It is considered as the nations' bold initiative to set up regulatory and legal framework for e-commerce. It includes provisions to tackle the growing number of cyber crimes [Joshi, 2005]. The e-governance initiatives undertaken in rural India represent another application of ICTs. High cost, lack of staff skills, staff reluctance and lack of client/supplier readiness are some of the barriers to the use of ICT in many countries and India is no exception to these barriers. Although, India has a visibly good ICT infrastructure, but still it is not adequate to move up in the Networked Readiness Index of the World Economic Forum, where India was ranked 39th for the year 2004-2005 (in 2003-2004 India was ranked 45th). The E-readiness rankings have been published annually by the Economist Intelligence Unit since 2000. E-readiness is the "state of play" of a country's information and communication technology infrastructure and the ability of its consumers, businesses and government, to use ICT to their benefit. For the year 2006 E-readiness rankings, India is ranked 53rd compared 49th for the year 2005 [EIU, 2006]. The government should take the fall in the E-readiness ranking very seriously and efforts should be made to provide improved infrastructure facilities to meet the international standards.

Making of a knowledge society: e-governance initiatives in India

Lack of information is one of the biggest obstacle to good governance and it dis-empowers poor people. Improving access to information is the most important reason to take the Internet to every village. Every villager does not have to own a computer, but one Internet center for a group of villages is sufficient. Thus e-governance has to be taken to the grassroots. There are many advantages of e-governance. Once the Internet facility is provided to the rural area, it is easy to create e-identities for every citizen. This will help to check the identity of a applicant, for any service from passport to a ration card, with the help of applicant's identity number. The e-governance revolution will bring transparency in the affairs of the government, as all the information will be freely available on the net. For the proper and effective functioning of e-governance, the ICTs should be utilized for their widespread application.

New Delhi took the first step towards e-governance, made the provision for Central Board of Secondary Education (CBSE) results via the Internet and showed the power of new

technology in day-to-day life [Joshi, 2005]. Government agencies at State and National level took some of the bold initiatives to move towards complete e-governance and these initiatives have been appreciated around the world. Many of the initiatives were implemented in the rural parts of the country to provide them an opportunity and facility to cope up with the urban counter parts of the country with the help of ICTs. Some of the government and private e-governance initiatives are worth mentioning.

Gyandoot

Gyandoot is a sincere effort of the rural-oriented ICT applications in India. Dhar district of Madhya Pradesh saw with the new millennium a massive revolution in ICT and governance. Computers have been installed in 30 places and are connected through an Intranet – "The Gyandoot". Local rural youth act as entrepreneurs for running cyber cafes called Soochanalayas. From these Soochanalayas user-charge based services are given to the masses. Farmers have access to the Internet in the vegetable market for product prices and access to land records. The Gyandoot Intranet project has won the CSI TCS Award for Best IT Usage and has also been awarded Stockholm Challenge IT Award. It was also adjudged winner in "Public Service and Democracy" category out of 109 IT project from all over the world. [Singh & Suri, 2005].

Pravana

Normally IT projects have been launched and sustained on the basis of government funding, but, Pravana is one such unusual and unique programme where government funds have not been utilized. Pravana cooperative movement is a cluster of 200 villages and is located at Ahmednagar district of Maharashtra. National Informatics Center (NIC) has ably assisted the 200 villages in commissioning appropriate software on the system. This initiative was started by the villagers who were financially self-sufficient and having aware of the benefits accrued from implementation of an IT network. Many of the e-governance initiatives have failed in their early stages of implementation because of the resistance from villagers to accept the advantages of ICTs. In the case of Pravana, villagers have shown a great interest in utilizing the applications of ICTs. Services such as telemedicine, distance education in Marathi, an agriculture information system and a medical information system provided by Pravana project have been successfully used by the villagers. [Bakshi, 2005].

Drishtee:

Drishtee is a rural network for delivering services and related information to the village community through an ICT Centre called "Drishtee Soochanalaya" or "Information Kiosks". The Kiosks are run by entrepreneurs selected from the villages and have been designed to follow a service-delivery based revenue model. Drishtee Private Limited is one of the very few companies in the world that has become profitable by offering Information and Communication related services in rural India. With a manager and the staff of about a dozen and virtually no funding, Drishtee has successfully launched about a hundred kiosks throughout rural India. In association with its partners like Microsoft, Intel, ICICI, Airtel, Scojo Foundation, Amaron, HCL, CEEP and Quiver Infoservices Ltd., Drishtee is serving 1.5 million villagers of India. Using a tiered franchise and partnership model, it has enabled a wide range of rural services including access to government programs and benefits, market-related information and private information exchanges and business transactions [Singh & Suri, 2005]. Drishtee is also playing a major role in education, employment generation, women empowerment, e-health and micro-finance in the rural areas of India.

Warana Wired Village

Warana Wired Village project is supported by National Informatics Center and the State government of Maharashtra. Under this project village has a "facilitation booth" with wireless LAN for high-speed transmission of data for farmers on such essential issues as the best time for harvesting, product prices, new farming techniques, accounting procedures, method for processing ration cards and permits, market rivals, crop varieties and machinery, and pest management. Further this project has extended the Internet connectivity to almost 70 villages in Kolhapur and Sangli districts of Maharashtra State. This initiative has enhanced farm productivity, increased the profits of farmers and helped the area's co-operative societies achieve an annual turnover of US $ 120 million [Panda & Chaudhury, 2001].

SRISTI

The project SRISTI (Society for Research and Initiatives for Sustainable Technologies and Institution) is aiming at easing the task of accessing the innovation database of Honey Bee Network by breaking the barrier of language and medium of data transmission. Understanding the tremendous potentiality of ICTs in furthering the cause of traditional knowledge and grassroots innovations, SRISTI has initiated a number of activities to network innovators, investors and entrepreneurs and facilitated the dissemination of knowledge and information pertaining to grassroots creativity. The initiatives have also taken particular care to facilitate peer learning among the innovators and traditional knowledge holders on one hand and with the institutions of formal excellence and world of entrepreneurship on the other hand [SRISTI Website].

NaiDisha

This is a Web portal dedicated to citizen services and is an ICT based interface between Haryana Government and its subjects. It stands for **N**ew **A**gent of **I**nformation – **D**istrict level **I**ntegrated **S**ervices of **H**aryana for **A**ll (NaiDisha). It is a step towards making government services available to citizens any time, anywhere via the Internet. Neither the time of the day, nor the location hinders from obtaining information from this Web portal. NaiDisha brings State/Local Government and district administration closer to citizens as if they are only a mouse click-away from their Government and its services. The Web portal provides 22 services to people of Haryana. NaiDisha provides four distinctive services and they are (i) Government-to-Citizen (G2C), (ii) Citizen-to-Government (C2G), (iii) Government-to-Government (G2G) and (iv) Citizen-to-Citizen (C2C) [Singh & Suri, 2005].

Village Knowledge Centres

M. S. Swaminathan Research Foundation has established Village Knowledge Centres in five villages, at a radius of 13-21 kilometers from Chennai in the State of Tamil Nadu. Basically the knowledge centres are designed to provide agriculture-related information, education and training using ICTs. These centres are equipped with PCs, Internet access, printers, CD-ROM and TVs/VCRs. They also provide the villagers with essential information on such matters like grain prices, women's health and rural welfare schemes. Provision is made to announce grade 10 and 12 examination results and publicise events (even to provide updates on cricket matches). Of course the emphasis is on socio-economic contexts, gender and local culture in this work. The centres are provided rent-free by the villagers. Each village has provided two to four volunteers with grade 10 education to help in the centres

and some nine volunteers (mostly female) have been trained in the basics of PCs, MS-Exchange, Word 97, i-LEAP in Tamil and system maintenance [Panda & Chaudhury, 2001].

INVITE

This is an IBM and the Govt. of Karnataka initiation to fuel the growth of Information Technology at the grassroots-level. IBM India and BITES (Board of IT Education Standards) have launched this unique programme - Project INVITE (Initiative to Nurture a Vibrant IT Ecosystem), to promote academic excellence in Karnataka. The Department of Information Technology, Biotechnology and Science and Technology along with BITES will participate in the project. INVITE is an ambitious initiative to enhance the local talent pool and leverage the ecosystem to fuel the growth of IT at the grassroots level. The project compliments the IBM Academic Initiative, which helps universities to train the students on Open Source, Open Standards-based technologies and IBM Technologies for a more competitive workforce. The project seeks to reach out to "IT-progressive" cities in the State that are rapidly adopting Information Technology to enhance e-governance and citizen services [The Hindu, 2006].

These are some of the few examples among many ICT enabled projects initiated in India to move towards complete e-governance and Knowledge Society. The awareness is growing and it is evident from the initiatives undertaken successfully by some State governments and private companies in India. It is clear that only few State governments have embarked on implementing new and innovative use of IT for e-governance, education and commerce. While presenting his report to the Prime Minister Dr. Manmohan Singh, the National Knowledge Commission Chairman Mr. Sam Pitroda contended that instead of adopting e-governance technologies to help government employee's process the data, it should be citizen-friendly to serve their purpose of getting things done quickly in a transparent way. In its report, the National Knowledge Commission has urged the government to take up various e-governance projects to ministries on a mission mode and prioritise them according to their respective needs. Report also says that it has identified eight sectors of Central ministries. These Central ministries have been identified on the basis of the frequency of the citizens having direct interface with the government. And, if the services in these areas could be made available online, this will help the nation to save valuable time, energy and money in serving the citizens. The report also presented a list of areas falling under State governments in which the Union government could take initiatives on mission mode. But for these, the Central government has to work in close consultation with the State governments. The areas include land records, road transport, property registration, agriculture, treasuries, municipalities, gram panchayats, State commercial taxes, police and employment exchange [The Statesman, 2006].

Effectiveness of e-governance initiatives

To a great extent most of the e-governance and computerization initiatives across the country use information and communication technologies as a means to achieve a more effective delivery of government services and better governance in general. E-governance is a prime area of concern for State governments in India, not only as a means of achieving efficiency in the running of State departments, but, more importantly, as a means of providing an easy and effective means for citizens to access basic government services. The DataQuest and International Data Corporation carried out a survey (DQ-IDC e-Gov Survey 2006) to assess the availability of ICT infrastructure, the rollout of e-governance projects of selected 18 Indian States to evaluate the impact of these projects on the delivery of government services to common citizens and corporates. The major findings are as follows [DataQuest, 2006]:

- Kerala, Delhi and Gujarat emerge as the top three States in terms of overall perception in improvement of services through e-governance
- E-payment has emerged as one of the most successful e-initiatives for States like Goa, Gujarat and Chhattisgarh
- Police and security, judiciary and land-related functions remain pain points for most States
- The IT department emerges a clear winner in terms of initiatives
- Andhra Pradesh and Karnataka, synonymous with IT in India, have not quite made it to the top
- More States are rolling out e-initiatives in the areas of networking, land records, education, and better information management
- Some of the areas where States have achieved moderate success have been those of e-payments, online provision of information and online ordering of documents, passport services and income-tax functions

There is a visible imbalance between the facilities provided through these initiatives and the utility by the public. Therefore, for the proper utilization, training and education becomes imperative where the people can be made self-learners and lifelong learners. The rural poor and the urban disadvantaged must be helped to become more empowered and self-reliant through education in order to enjoy better health and lifestyle and to be better informed about what is happening in the wider world. This is possible by teaching the lifelong learning skills through Information Literacy. To know the services provided by the government through these initiatives, one should be an informed citizen and have the ability to learn and relearn and become lifelong learner.

E-governance implications for libraries

The impact of e-governance on libraries is very significant. Though the effects will vary according to the type of library (academic, public, government etc.,) but one common goal for all libraries should be direct and more rapid access to government information and services. In the academic and special libraries, e-government information will allow the option of collecting less printed government materials, thus helping to relieve the pressures on storage space. Irrespective of the type, libraries will need to have staff trained in Internet use and familiar with online government information in order to ensure efficient access for their clients and users. The staff must also be able to train clients how to find and retrieve online information (i.e., making citizens information literate). In the Indian context, it has been noticed that libraries have well trained information professionals who are increasingly ICT-literate and can work with government to create content and provide information services to the masses. On the other hand, the government should provide proper infrastructure facilities and training and create an environment to allow the private sector to participate in this relationship so that it can provide state-of-the art technology.

Among different types of libraries, public libraries as places and institutions of significant value to their communities, serving educational, economic and social needs have a prominent role to play in the e-governance initiatives. Public libraries can play the role of selecting and adding content and presenting it to groups of users in appropriate formats. This will result in the development of official portal sites and providing links to relevant e-government websites and resources. National Library of India should work as nodal agency for content creation and the respective public libraries can develop and use their portal websites to identify and enhance the e-governance information provided by the local government. Public libraries should assist the government and citizens by making them available all new non-commercial publications released by a Ministry/Department online concurrently with other forms of dissemination and provide free access to government

information by installing 24/7 information kiosks. Public libraries should also act as a single-window information system for all issues concerning the e-governance.

Apart from public libraries, government libraries also have a significant role to play in the e-governance initiatives. Government libraries in India have taken up the challenges to;

- develop the machine readable catalogues and make it available on the network for wider accessibility
- develop machine readable full text documents to provide greater accessibility to full text databases of different nature
- standardize such development by adopting international standards
- explore ways and means to preserve the machine readable information in a way that can sustain the future requirements of ICT and
- changing the focus of government libraries from providing library services to fulfill the long pending focus of "Right To Information"

The variety of documents published by the government organizations can be made available to the citizens through government libraries. The range of documents cover;

- administrative reports
- government notifications
- statistical reports
- committee and commission reports
- research reports
- bills, acts, laws, codes, rules and regulations, law reports, digests and parliamentary debates
- reports of various parliamentary committees (Majumdar, 2005)

Hence, e-governance has potential for libraries to share resources and enhance services. E-governance would provide libraries with opportunity to access large amounts of government information that would be difficult to access in a non-electronic environment. It is possible that with amount of government information increasing online, e-governance provides a new way of enhancing bibliographic control of government information and networking among disparate libraries. So, libraries as e-governance service providers are clearly significant players.

Initiatives for promoting the information literacy activities

In the contemporary age, learning to learn, learning to transform information into new knowledge, and learning to translate new knowledge into applications become more important than memorizing specific information. In this new paradigm, priority is given to analytical skills; that is, to the ability to seek and find information, crystallize issues, formulate testable hypotheses, marshal and evaluate evidence, and solve problems at hand. The new competencies that employers value in the Knowledge Society have to do with oral and written communication, teamwork, peer teaching, creativity, envisioning skills, resourcefulness and the ability to adjust to change. Many of these competencies involve social, human and inter-cultural skills that are not normally taught in science or technology-based disciplines. Information literacy training is collaboration between the teachers, media persons, computer technologies and librarians. A number of innovative programs and seminal sets of standards and guidelines have to be developed in this area by some of the developed and developing countries around the world.

The e-governance initiatives undertaken throughout India, its services and positive benefits that the rural citizens can get from these programs require good publicity. In order to teach them skills required for realizing a information/service need, and developing the skills necessary to find, evaluate and use that information/service through these initiatives should

be taught for the proper and effective utilization. To realize the dream of e-governance and move towards a Knowledge Society, number of programs needs to be undertaken which address the issues related to Information Literacy and lifelong learning. Information literacy forms part of the basic entitlement of every citizen in every country of the world, to freedom of expression and the right to information. It is thereby instrumental in building and sustaining democracy and good governance and represents a basic condition for any successful e-governance programs. To make India a Knowledge Society, people from all walks of life need to contribute towards the upliftment and proper implementation of the concept of Information Literacy and lifelong learning.

Government of India along with the State Governments and other competent organisations and professional bodies need to undertake some of the programs/initiatives that are and needs to be implemented and practiced.

- Implementing Information Literacy programs to users of the all types of libraries
- Integrating Information Literacy across the Curriculum at all levels of education
- University Grants Commission (UGC) may take the proper steps to induct the component of Information Literacy in higher education, so also the related bodies in engineering and other profession courses. In addition, the professional societies, academics and associations like ILA, SIS, IASLIC and IATLIS can make efforts to bring together the professional expertise along with academic and media experts to design and develop the viable Curriculum for various levels of education
- Collaborating teachers, librarians and media experts to design and promote Information Literacy programs
- Carrying out surveys and studies on the usefulness of Information Literacy at Regional, State and National levels
- Forming a National Information Literacy Forum to enable people from all walks of life to interact, discuss and bring out policy guidelines to strengthen the Information Literacy movement across the country
- Frequently conducting workshops/seminars/symposia in order to enable broader and thorough discussion on the concept of Information Literacy and bring out more literature of national importance
- Conducting programs like training the trainer in order to upgrade the Information Literacy knowledge and skills of both librarians and faculty
- Organising brain storming sessions for wider discussion on the concept of Information Literacy and bring out policy statements
- Designing the National Information Literacy Policies, Standards and Guidelines by suitably reviewing existing educational policies
- Designing National Information Literacy Portal, through which information on Information Literacy ideas, projects, initiatives, activities, education resources, programs, tutorials, self-assessment tests etc., will be shared and organisations networked

CONCLUSION

Imagine a situation in which all transactions with government can be done through one counter without having to wait in long queues. This is one of the many visions envisaged by the concept of e-governance. The objective of e-governance is to support and simplify governance for all parties – government, citizens and businesses. In e-governance, ICT supports and stimulates good governance through better public service delivery to individual citizens and businesses, transparency in information and easier citizen access to authorities. Though e-governance is a noble concept but in order to successfully utilize the benefits of these initiatives, the training or making people information literate is a point of concern. So, libraries in general and public libraries in particular have a great role as e-government content creators and disseminators. Public libraries represent the first stop for the citizens information needs. For many it is their online resource. Hence, public libraries may be

provided with sufficient manpower and training and infrastructure facilities so that along with delivering the e-governance services, they should be able to carry out programs in creating awareness and making the masses informed citizenry and lifelong learners. In the emerging knowledge societies, an educated person will be someone who is willing to consider learning as a lifelong process. More and more knowledge, especially advanced knowledge, is acquired well past the age of formal schooling, and in many situations through educational processes that do not center on the traditional school. Information overload, the advent of high-functionality systems, and a climate of rapid technological change have created new problems and challenges for education and training. Information Literacy is considered as a meta competency of the knowledge society. If one has to be successful in the knowledge society, he/she needs to acquire high level of Information Literacy skills. India essentially needs to transform into complete knowledge society and hence the efforts be concentrated to develop the absorbing, analyzing and integrating abilities of the people and to make them understand how to use information to bring real value to everything they undertake. Information Literacy has become a global issue calling for grater attention. As a result several countries have taken initiation in starting the national as well as international programs. These programs are addressing many issues relating to technology and information skills. In the Information Age of the 21st century, Information Literate citizens will be the building stone for a society that is equitable and possesses economic growth potential. People will need information skills for the personal, professional and even for the entertainment activities. In the context of India, it is essential for librarians, teachers, technologists, media experts and policy makers to make all possible efforts to start the Information Literacy movement with a big bang.

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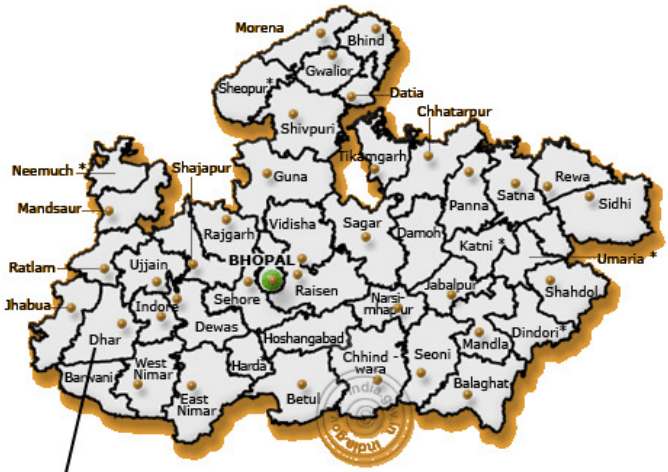
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MAPS SHOWING LOCATIONS OF E-GOVERNANCE INITIATIVES DISCUSSED IN THE PAPER

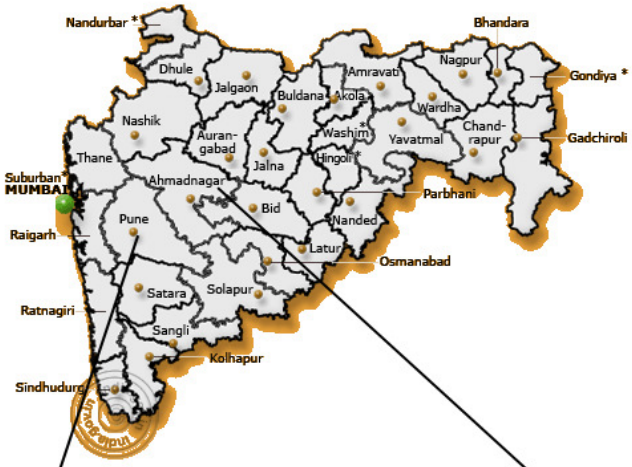


MAP SHOWING INDIAN STATES AND UNION TERRITORIES



MAP OF MADHYA PRADESH STATE

GYANDOOT PROJECT



MAP OF MAHARASHTRA STATE

WARANA WIRED VILLAGE

PRAVANA PROJECT

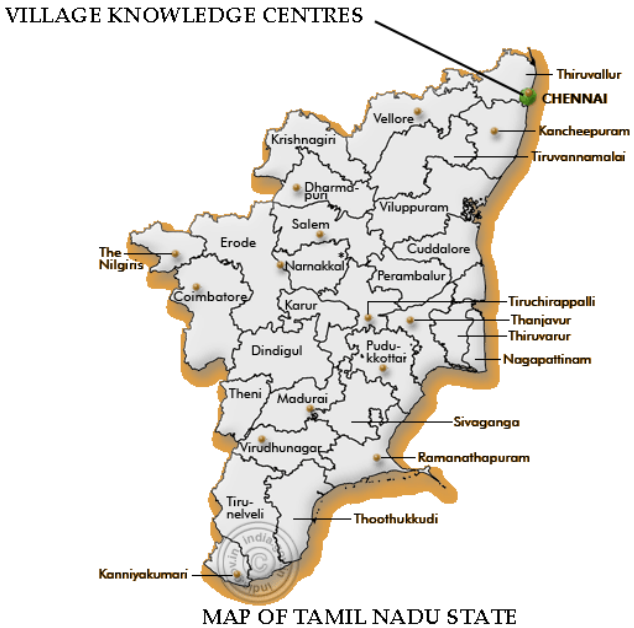


MAP OF GUJRAT STATE

SRISTI PROJECT



MAP OF HARYANA STATE



MAP OF TAMIL NADU STATE



MAP OF KARNATAKA STATE