CHAPTER VI

NATIONAL INFORMATION SYSTEM
WITH A NETWORK MODEL OF ICSSR LICs
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Information has already been accorded as a national resource in the socio-economic development of any country. This is why the government has assumed the responsibility to ensure the right to information access as a national level requirement. Since information is an intellectual resource of any country, it has become essential to provide appropriate information services to achieve progressive goals. Thus, need was felt to examine systematic planning of information infrastructure at various levels so as to develop an effective information system in various fields of activities at various levels.

VI.1 INFORMATION POLICY

Information is a communicable form of knowledge being recorded in various formats, which have to be organised in order to generate, collect, retrieve and disseminate. To fulfill all these aspects of organisation of information, there has to a system within which various library resources may be organised and co-ordinated for common usage and coordination. They may form a network, grid or a consortium for the purpose.

With a view to coordination and cooperation of resources within library system, the need was felt to develop social science information systems at the centralized level. For this, it is essential to make a master plan guided by a sound national policy for social science information, which would structure the existing information systems
for plan implementation. The professional need is to frame necessary policy statements through systematic organizing of ideas and decisions. Thereafter seeking government intervention for policy formulation. For the purpose of decision-making, we require,

- to identify problems,
- to describe and analyse its different facets
- to find out alternate solutions for each problem
- to assess the pros and cons of each solution
- to make stepwise selection of solution.

**VI.2 NEED FOR AN INFORMATION POLICY**

The need is based on the following:

- The library and information services in Indian situation are quite inadequate and disorganized. The bare minimum needs of researchers are not being met by the meager resources available in the research LICs especially in remote areas where researchers have little access to the sources of information.

- Even the national library units lack coordination and cohesion there is no updated Delivery of Books Act for comprehensive book collection. The national resource centres have to be strengthened and the depository libraries should have coordination at the national level.

- The academic libraries, which are supported by national body, i.e. UGC also, do not have uniformity in development or resource sharing at the system level.

- The public libraries have not much to contribute due to lack of a library system. Most of the states have not adopted to library legislation till now. There is a need to explore into preparing an alternative model so that administrative action and implementation may be taken.

- There is no National Information System other than in Science and Technology. Though the special libraries at the national level need to strengthen themselves in terms of resources, infrastructure and preserving the existing stock of resources so that they play an important role to develop their libraries into
national resource centres, thereafter contribute to developing a National Information Centre.

There has to be an effort to provide sufficient training to the manpower development following a uniform pattern so that they can contribute with equal standards in developing an information system at the national level.

The users needs and requirements should be given utmost importance in any library system. The special libraries should prepare a user profile and then mould the users within the library system.

It has been still very difficult to link the libraries of the same nature so that their resources may be shared. There is lack of sufficient infrastructural facilities to do so.

There is no central agency or coordinating body to develop the national information system.

The Government of India should enact a library law relating to such issues at the policy level, which would help develop a National Information System in Social Sciences.

VI.3 EFFORTS INITIATED TO FORMULATE A NATIONAL INFORMATION SYSTEM

With a view to the above, needs for a national policy on information, a policy statement is to be followed up by the establishment of a national body which would provide necessary direction, guidance, leadership, rendering financial support and coordinating programmes at different levels to collect, store, organize and disseminate information. The need is to have strategic development, evolving suitable programmes to develop national information infrastructure such as:

- sources of information storage,
- tools to access information,
- services to disseminate information,
- application of information technology
- manpower development
user education

professional research and development

regional, national and international cooperation in forming the network.

Although, a lot of effort has been done in past over establishing a National Information System in Social Sciences with a view to take steps to improve library services in the country. The major efforts have been initiated by the professional organisations, apart from the government bodies. The IASLIC and ILA in their eleventh and twelfth conferences concentrated on themes relevant to national library and information policy in 1977 and 1979 respectively. As a result of which, a draft policy statement was submitted to the Government of India in early 1985. Later, Indian National Network for Social Science Information and Documentation Centres (INSIDOC) and Indian National Information System for Social Sciences (INISS) were proposed and DEVSIS, DEVINSA, etc. have been established at the International level. As social science research in India has gained momentum after the establishment of Indian Council of Social Science Research (ICSSR), it established a Documentation Unit later named as National Social Science Documentation Centre (NASSDOC) to support the research and development efforts in social sciences. The ICSSR also established a Data Archives for Social Sciences. Though, a lot of stray efforts are being done by the LICs in this regard with different functions, scope and efficiencies. Some of the worth mentioning models are Social Science Research Network (SSRN) and INFLIBNET. Some of the collaborative gateway such as ELDIS (Gateway to Development Information and SOSIG (Social Science Information Gateway) are worth mentioning. At this stage, instead of piecemeal development of such systems, a liaison between these systems is required so as to have a well-structured National Information System Network (NISNET).
VI.4 GUIDELINES FOR PLANNING A NIS

In developing a National Information System with networking the associated LICs need to work towards a general plan, objective and goal, in agreement with the main organizing agency. It needs to be based on existing information services and facilities. The coordination and cooperation of individual Information Centres should be there in order to use every potential information available to be incorporated in the system. The guidelines and responsibilities have to be well defined. There should be compatible national and uniform standards for information gathering techniques and methods so that exchange and handling of information becomes easy.

Apart from such basic requirements, financial arrangements, coordinating machinery and step-wise planning is also essential. A framework reflecting the needs of all the sectors of national endeavours is important to help in establishing a well-planned NIS.

VI.5 PRESENT MODEL STUDY

A National Information System in Social Sciences is being proposed in this chapter with a plan to network all the ICSSR LICs in different phases. The ICSSR Institutes are inter-disciplinary in approach and with a wide coverage of various disciplines in social sciences almost all the disciplines are covered in the resource base of these LICs. The proposed model is based on the NISSAT pattern which is operational successfully and the ones being proposed in this field. It will be directly associated with NASSDOC (ICSSR) having it as the nodal centre to coordinate and monitor the various activities at the central level. (The structural and system design is being discussed later in this chapter).
The structure of the NIS Network (NISNET) would be decentralized having one nodal centre with at least ten sectoral centres which would be identified according pre-defined parameters concerning their information resource base, etc. The NIS Network would provide mission-oriented services with thrust areas of social sciences. It will contain following main components:

(1) Documentation and Information Services
(2) Data Archives Services
(3) On-line sharing of databases
(4) Network links at the national and later at global level.

The types of services to be provided would be:

- Union Catalogue
- Bibliographical
- Document Delivery Services
- Resource base
  - Individual Catalogues
  - International Resources
  - Access to Indigenous database

Though all the sectoral centre selected in the first phase and would provide local information services to their users but also provide coordinated services based on their resource base. This would be discussed in detail later in this chapter.

In order to develop sufficient information resource base, each node have to be self-sufficient in terms of the necessary pre-requisites and defined parameters. Some guidelines would still be required to be laid down for:

- building the Information Resource Base
- information seekers and identifying potential users
- guidelines for offering information services
- manpower development programme.
VI. 5.1 OBJECTIVE OF THE PROPOSED NIS NETWORK (NISNET)

The broad objectives of the NIS Network would be:

- to identify various subject areas/disciplines of social science research in ICSSR LICs.
- to identify common information resources which can be pooled into the NIS.
- to identify ICSSR LICs rich in information resources, infrastructural facilities as well as IT facilities and services which can be covered in the first phase of framing the NIS.
- to identify the regular users of the ICSSR LICs and potential users within the NIS so as to provide relevant, precise, exhaustive and timely information to them.
- to facilitate the selection, processing and dissemination of information to users at all levels.
- to promote the development and use of efficient tools and techniques of handling information.
- to make optimum utilisation of existing information systems and services and development of new ones from time to time.
- to evolve a system of resource sharing promoting faster modes of document delivery.
- to ensure relevant manpower development to order to keep them updated with information sources and their utilisation.
- to have a network of ICSSR LICs in three phases and have nodal and sectoral centres within the main system.
- to facilitate the use of national and international databases and link with various networks.

VI.5.2 IDENTIFICATION OF USER NEEDS

The user needs assessment and identification is extremely essential in making an Information System Design. It is essential to understand the what, why and how of the users, their variety of needs. The user is the key person of an Information
System. User is the key and dynamic component of any such system and to understand user is an important and a continuous activity. It is very important to conduct user studies at the time of designing a system of service, to assess their needs. This can be done on the basis of the following:

- user characteristics
- their information requirements
- their behaviour, attitudes, opinions, priorities, preferences and evaluation.

However, their need identification may be done on the basis of the following:

- the categories of users of social science information
- the types of requirement by each category
- the different information sources being exploited by them
- Information search pattern adopted by them.

On the basis of conducted user studies comprehensively at all levels for different phases of setting up of the Information System, certain investigations can be taken as the major contribution to designing the system. At the same time, detailed profile of the related ICSSR Institutions should also be collected in order to relate the changing user requirements with the objectives of the Institutions.

This would also help in taking other technical help from the organisations related to developing the information system like infrastructural facilities as computer and communication technologies. Thus, the basic strategies relating to the components of an information system may be:

- the resources
- storage devices
- infrastructural facilities
- the retrieval techniques
the communication technologies

manpower

computerisation of LICs if not done so far.

VI.5.3 SYSTEM DESIGN OF THE NIS NET

The proposed Information System would be a multi-tier system based on the following components:

- Focal point, i.e. the nodal centre to coordinate and monitor
- Network of ICSSR Libraries and Information Centres fulfilling the required parameters of networking, i.e. 1st phase, i.e. Regional Centres.
- Network of ICSSR LICs in the 2nd phase, i.e. Sectoral Centres.
- Network of ICSSR LICs in the 3rd phase, i.e. Specialised Service Centres.

VI.6 FOCAL POINT

The focal point of the proposed NIS Network would be NASSDOC which will be the controlling and monitoring authority of the NIS network. There would be an Advisory Committee who would guide and advise this nodal centre. This nodal/focal point would also be responsible for taking day-to-day decisions in working out towards structuring, approving and implementing the scheme. There would also be ad-hoc working groups, expert groups and coordinating committee, who would also look after the technical side of the framework. The sectoral centres would be selected by this nodal centre on the basis of certain pre-defined parameters already laid down by the expert group.

The benefit to have NASSDOC as nodal centre would be that:

- it is already an established centre and imparts several services and programmes for their users.
- NASSDOC/ICSSR is also the parent body of the ICSSR Research Institutes and any financial or other assistance would be readily provided by NASSDOC.
it already undertakes some major research projects directly or in collaboration with some selected ICSSR Institutions.

it is already linked with several national or international networks, which may further be helpful in networking with sectoral centres at various stages of establishing this network.

it organizes various training programmes for LICs professionals as well as users, which may help them at various levels.

The focal point would identify the ICSSR LICs to be included in the sectoral centres, i.e. the 1st phase of the National Information System Network. This would be done on the basis of certain pre-defined parameters related to infrastructural facilities and automation at the particular ICSSR LIC. There would be maximum use of the existing information resources and facilities at the focal point which will then include the first ten identified sectoral centres in its network so that sharing of their resources, facilities and services could also be done by the sectoral centres.

Accordingly the next ten sectoral centres in the ICSSR LICs would be incorporated in the NIS Network in the second phase. The LICs, which are absolutely weak in their resources, facilities and services would be easy to be identify in this manner. Accordingly, suggestions would be forwarded to the concerned organisations to help these financially weak LICs at the planning and policy level. This would gradually strengthen their resources, facilities and services so that they may also be incorporated in the NIC Network at a later stage. This way all the 27 ICSSR LICs would be covered in this NIS Network at various stages.

VI.6.1 FUNCTIONS OF THE FOCAL POINT OF THE PROPOSED NIS NETWORK

(1) Formulating of a Policy of the proposed NIS Network.

(2) Formulating an Action Plan.
(3) Establishing a Mechanism of implementing the policy and plans.
(4) Identifying the LICs for the sectoral centres.
(5) Allocating finances for various programmes.
(6) Formulating guidelines and standards.
(7) Promoting research and development.
(8) Promoting education and training programmes to LIC professionals and perspective users.
(9) Monitoring and evaluation of the performance of the system.
(10) Coordinating activities with national and international organisations and networks.

VI.6.2 PREREQUISITES OF THE PROPOSED NIS NETWORK

The evaluation of the resources, services and facilities at the ICSSR LICs clearly shows us their status as far as automation, IT status and infrastructural facilities are concerned. This would help us in identifying the core ICSSR LICs to be incorporated in the 1st phase of establishing the NIS and their network. The LICs which are not yet providing automated services, have no in-house databases and do not use any IT products may be taken in the NIS Network gradually. This would help us to define the set parameters of coverage in the 1st phase. The proposed NIS Network would be established on the basis of the already existing resources and facilities at the concerned LICs. Gradually financial assistance would be sought for with the growth of the network at the later stages. Thus, the proposed NIS Network would be self-supportive to certain extent in terms of their finances and services.

However, the ICSSR LICs which are far behind in automation and providing IT products and services would be provided some financial assistance through NASSDOC which at certain stage may seek financial assistance through the Ministry of Human Resource Development which would further disburse the same to the sectoral centres in different phases.
As part of the prerequisite of the proposed NIS Network and the infrastructural facilities, the most important requirement of the participating LICs in the 1st phase would be the hardware and software facility along with the other resources, services and IT products.

**VI.6.2.1 Hardware Requirements**

In the 1st phase, the participating ICSSR LICs on the proposed NIS Network should have the computer systems with following prerequisites:

- have minimum hardware redundancy
- have scope for upgradation
- have high computing facilities
- are compatible to improved software
- are compatible with other computer systems

However, since the participating LICs in the 1st phase are the ones, which have modern and suitable, infrastructural facilities and some may also be linked with other networks like DELNET, INFLIBNET, CALIBNET, etc. So the configurations may largely be recommended on the basis of these networks’ feasibility reports. Depending on the size of the library collection, databases, etc. the hardware can be upgraded from time to time in these LICs.

**VI.6.2.2 Software Requirements**

Besides the system software and application software, the proposed NIS Network would require an integrated library software package on the following parameters:

1. should have hardware compatibility
2. should have compatibility with Indian and international bibliographical standards.
(3) should work on multi-user environment
(4) should be user friendly and menu-driven
(5) should have fast retrieval
(6) should be able to handle bibliographical and textural data
(7) should support data security
(8) should have authority file and the sources maintenance
(9) should facilitate output in a variety of ways
(10) should be able to handle multiple search techniques
(11) import/export of data through standard exchange format
(12) should work on network (LAN/WAN)
(13) should be supported by well-written manuals, on-line help, etc.
(14) should be updated with time and requirement.

However, in a few automated ICSSR LICs, it is seen that they are mostly using CDS/ISIS for bibliographic databases and LIBSYS for textual databases. There was a proposal by the NASSOC to ICSSR LICs to use only one software in all the 27 ICSSR LICs but this could not work out due to financial and other limitations. But the participating libraries in NIS Network would have to ensure the compatibility of their software and databases with other ICSSR LICs. However, standardized software in these LICs should be adopted in all the phases. They should have Common Communication Format (CCF) as well as Machine Readable Catalogue (MARC).

VI.6.2.3 Standardization

Standard techniques, procedures and methods would be followed by the participating libraries in the network in order to have a purposeful outcome of the resources to be shared. The areas in which standardization is essential for networking are classification, subject indexing and cataloguing, bibliographic descriptions, standard identification numbers, codes and abbreviations, transliteration, abstracting and indexing, interchange of bibliographic data, search command language to use the
catalogue and bibliographic data, etc. The recommendations of other library networks can be consulted for standardization.

**VI.6.2.4 Governance**

It is very important to have the functions of a library network clearly laid down in order to facilitate designing, developing and implementing the governance of the system. This would not only ensure the monitoring of its activities but also take care of its maintenance and funding. The MOU for the networking activities can be created by the participating libraries.

**VI.7 SERVICES TO BE PROVIDED**

The services would be provided keeping in view the objectives of the NIS. They are broadly divided as under:

**VI.7.1 Catalogue-based Services**

(i) Shared catalogues  
(ii) Union Cataloguing  
(iii) On-Line Cataloguing  
(iv) Catalogue production (in various forms)  
(v) List of New Additions  
(vi) Authority Files

**VI.7.2 Database Services**

(i) Subject bibliographies  
(ii) Subject Union Catalogues  
(iii) Information Retrieval  
(iv) Referral services  
(v) Translation and Document supply  
(vi) CD-ROM database services  
(vii) On-line Databases.
VI.7.3 **Documentation Services**

(i) Specialised current indexing and abstracting
(ii) CAS
(iii) SDI
(iv) Newspaper Clipping
(v) Current content
(vi) Non-Bibliographic database services
(vii) Preparation of surveys, state-of-the-art report, forecasting reports, etc.

VI.7.4 **Communication Based Services**

(i) Inter-Library Loan
(ii) Document Delivery
(iii) Record Keeping
(iv) E-mail
(v) Bulletin Board Services for viewing and updating

In addition to these, the sectoral centres would build up and maintain a document collection to supplement those already existing with the concerned LICs. However, they would coordinate and utilize the information services within the sector also. Each sector would envisage developing computer-based information services for the sector ensuring national and international compatibility. At the later stage, the sectoral centres, which would be incorporated in the first phase, would link all their operations like acquisitions, serial control, etc. for resource sharing purpose.

VI.8 **TIME FRAME**

The proposed network can be planned to be executed and be in functional shape within a year of its planning. In the first phase, the best ten ICSSR LICs may be incorporated and the rest may be taken up in the second and third phases.
VI.9 NETWORKING OF LIBRARIES AND INFORMATION CENTRES

Networking of LICs has become a very essential part of managing them as far as sharing of information resources is concerned. With cost escalation in purchase of foreign journals, more that Rs.2,000 million is spent on their acquisition and about 5000 million is spent on procuring new library resources. The annual estimated rate of increase in information generation is about 13 per cent which has made it very difficult for information managers to collect, organize and retrieve information for users. At the same time, due to increase in cost escalation of these resources, it has become very difficult to meet out their cost even by financially sound LICs. These factors gave rise to resource sharing which is now done through providing automated library services and networking with the advent of modern IT services and facilities.

The Ninth Five Year Plan (1997-2002) Working Group on Libraries and Informatics highlighted the challenges to be faced by the Indian libraries of the twenty first century due to unprecedented developments in IT networking and the Internet. The efforts made by the Department of Telecommunication (DOT) and Videsh Sanchar Nigam Limited (VSNL) and the Government of India towards providing and maintaining national and international telecommunication facilities made the accessing and transmitting of information easy. Though as part of telecommunication facilities there are a number of networks being provided like ERNET, NICNET, INDONET, etc. In order to promote scholarly communication among academicians and researchers in India, efforts have been made by the UGC to provide network services at various levels called INFLIBNET, which maintains Union Catalogues of Libraries of different regions. Gradually, several Libraries and Information Networks (LINs) have been
developed in various parts of the country for optimum utilization of available resources which were scattered in an unorganised manner. The existing network are INFLIBNET, DELNET, BTIS, SIRNET, CALIBNET, MALIBNET, BONET, PUNENET, etc.

Being part of any such Library Network, the LICs would undergo major changes in their functions and operations like:

- shift to knowledge based centres;
- shift to Information and Knowledge Managers who are able to skillfully select the most relevant information for their potential users;
- focus on quick access and delivery of information using the most appropriate technology for dissemination;
- focus on supportive and empowering library technology as well as the users; and,
- shift to subject-based specialized library networking.

Networking of the LICs is the only answer to meeting out the gradual technological changes, advancements and challenges to be met by the Information Managers of today.

VI.10 NETWORK

After having known the library and information services of the core LICs of ICSSR to be included in the 1st phase of the NIS Network, it is essential for us to work out on their networking plan also. This network of ICSSR LICs, which would be part of the 1st phase of NIS, would work on cooperative endeavour, which will share, utilize resources at local, national and international level. The network would work on the mechanism to access information, its transfer and exchange so that academic
infrastructure is created in support of academic pursuits of researchers. The potential users would be made available all the information resources and services.

**VI.10.1 Prerequisites of Networking**

To establish a network, certain well-established guiding principles have to be followed like the establishment and operation of network, their topology and environment, etc. The following points have to be followed as precondition of establishing the network:

**VI.10.1.1 Pre-Defined Objectives**

The objectives are to be determined by identifying the academic needs of users, viz-a-viz the objectives of the organisation with which the NIS or the users are associated. Since the basic objective of establishing a network is sharing and exchange of information, it is very essential to keep in mind the nature and scope of services to be provided functional interdependency, sharing and pooling of resources, rational collection development and bibliographic access and control.

The tasks to be fulfilled and how to accomplish them by the network should be ascertained. Since the academic needs of users keep changing, these objectives also need to be reviewed and modified at regular intervals to suit the academic environment.

**VI.10.1.2 Formulation of Policy and Plan**

The how, what and where of establishing a network, the functions to be performed and whom to include as part of the network is part of framing policy and plan of a network. The objectives have to be based on the guidelines, predetermined
objectives and standardization of activities. Since the participating LICs would be networked, they would have a definite nature and degree of autonomy.

The planning of human, financial and material resources are essential so that the evaluation of activities can be done systematically. The technical operations and related manuals have to be well planned in advance only.

**VI.10.1.3 Guidelines and Standards for Compatibility**

The LICs network should be compatible so that storage exchange and manipulation of records and services is easy. Standardisation makes it easy to interconnect LICs so that there are no barriers in data exchange. This means, information handling, communication and standard hardware should be taken care of. Although for exchange format we have Common Communication Format (CCF) by PGI/UNESCO devised in 1984 and later revised and still needs to be revise din view of technological changes in LICs.

**VI.10.1.4 Government**

The participating LICs have to follow certain regulations, standards and procedures to ensure participative management by all. The committee set up for the purpose helps in taking care of such problems.

**VI.10.1.5 Finance**

The establishment and maintenance of the network require adequate financial support in order to sustain the same. The parent organisations of the participating LICs can support and host institution, i.e. NASSDOC/ICSSR can provide additional funds. At the initial stage of designing the network, the financial situation may be assessed so that it can be decided at the policy level itself.
The most ambitious and successful network in Indian context is INFLIBNET, after which CALIBNET, DELNET were initiated under the NISSAT plan. These are however, networks with a very wide coverage, the network of ICSSR LICs would be limited in the initial state, i.e. the best ten ICSSR LICs then gradually adding up more of them.

**VI.10.1.6 Network Topology**

The nodes are evenly linked together to form a topology like star, tree-like, ring and meshed. In the tree-like topology, there is specialised bus, which reduces the distance between frequently nodes. Since the 27 nodes and one main node would be fixed and would be subject to expansion in terms of network, so star topology would be suited for this kind of a network.

In the 2nd phase, the libraries, which are on the way to automation and are trying to build-up their academic and other infrastructure, are being taken up. The assessment of ICSSR LICs resources, services and facilities shown in Tables 8 & 9 in Chapter III helps us to know about the LICs to be incorporated in the NIS Network. The status of automation and IT facilities is shown in Table 21 in Chapter IV helps us to know about the LICs to be incorporated in the 1st phase.

**VI.11 STRUCTURAL LAYOUT OF DESIGNED NETWORK TOPOLOGY**

The region-wise distribution of ICSSR LICs is given in the figure 25, wherein maximum numbers of ICSSR LICs fall in the Northern Region, i.e. 11 per cent, then in Southern Region, i.e. 8 per cent, followed by 4 per cent in the Western Region and 2 per cent in the Eastern and Central Regions. On this basis, we can estimate region-wise distribution of these LICs participating in three phases of network plan.
In the 1st phase of the NIS Network, the distribution of LICs covered has been done on the basis of their infrastructural facilities, information resources and automated services they are providing. There are six LICs from the Northern Region, three LICs from the Southern Region and only one LIC from the Eastern region.
In the 2nd phase of the NIS Network, two LICs are from the Northern Region, one LIC is from the Eastern Region, one LIC is from the Central Region, two LICs are from the Western Region and three LICs are from the Southern Region.

In the 3rd phase of the NIS Network, three LICs are from the Northern Region, two LICs are from the Western Region, one LIC is from Central Region and two LICs are from the Southern Region. All these LICs have meagre resources, facilities and services and are yet to be providing automated services and utilizing IT facilities.

The topology or distribution of LICs in three phases indicate that in the first phase of the NIS Network, maximum number, i.e. six LICs are from the Northern Region indicating that Northern Region LICs are the most rich in terms of resources, services and facilities and they are maximum in number also, i.e. 14. The region-wise distribution of ICSSR LICs is given in Figure 25.

Since most of the ICSSR LICs, especially in the 1st phase of NIS Network are from the Northern Region and they are in close affinity to ICSSR/NASSDOC, the Nodal Point of the Network, it would be feasible for them to become an active participant of the NIS Network. Also, most of them are connected to other computerized Library Networks.

The Network Topology in three phases of the NIS Network is given in the Figure 28 and the list of ICSSR LICs to be covered in three different phases is also given below.
Fig. 26: Structural Layout of ICSSR LICs to be incorporated in the first phase of NIS Network

1st Phase of NIS Network

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<tr>
<th>Name of the Institute</th>
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<tbody>
<tr>
<td>Centre for Development Studies, Thiruvananthapuram</td>
</tr>
<tr>
<td>Centre for Economic and Social Studies, Hyderabad</td>
</tr>
<tr>
<td>Centre for Research in Rural Industrial Development, Chandigarh</td>
</tr>
<tr>
<td>Centre for Studies in Social Sciences, Kolkata</td>
</tr>
<tr>
<td>Centre for Women’s Development Studies, New Delhi</td>
</tr>
<tr>
<td>Giri Institute of Development Studies, Lucknow</td>
</tr>
<tr>
<td>Institute of Development Studies, Jaipur</td>
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<tr>
<td>Institute of Economic Growth, New Delhi</td>
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<tr>
<td>Institute for Studies in Industrial Development, New Delhi</td>
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<tr>
<td>Madras Institute of Development Studies, Chennai</td>
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Fig. 27: Structural Layout of ICSSR LICS to be incorporated in the 2nd phase of NIS Network

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<th>2nd Phase of NIS Network</th>
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<tr>
<td>Dr. BR Ambedkar National Institute of Social Sciences, Mhow</td>
</tr>
<tr>
<td>Centre for Policy Research, New Delhi</td>
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<tr>
<td>Centre for Social Studies, Surat</td>
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<td>GB Pant Social Science Institute, Allahabad</td>
</tr>
<tr>
<td>Gujarat Institute of Development Research, Ahmedabad</td>
</tr>
<tr>
<td>Institute of Public Enterprise, Hyderabad</td>
</tr>
<tr>
<td>Institute for Social &amp; Economic Change, Bangalore</td>
</tr>
<tr>
<td>NKC Center for Development Studies, Bhubaneswar</td>
</tr>
<tr>
<td>OKD Institute of Social Change &amp; Development, Guwahati</td>
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Fig. 28: Structural Layout of ICSSR LICs to be incorporated in the 3rd phase of NIS Network

3rd Phase of NIS Network

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<tr>
<td>AN Sinha Institute of Social Studies, Patna</td>
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<td>Centre for Multi-Disciplinary Development Research, Dharwad</td>
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<tr>
<td>Council for Social Development, Hyderabad</td>
</tr>
<tr>
<td>Centre for the Study of Developing Societies, New Delhi</td>
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<tr>
<td>Gandhian Institute of Studies, Varanasi</td>
</tr>
<tr>
<td>Indian Institute of Education, Pune</td>
</tr>
<tr>
<td>Madhya Pradesh Institute of Social Science Research, Ujjain</td>
</tr>
<tr>
<td>Sardar Patel Institute of Economic and Social Research, Ahmedabad</td>
</tr>
</tbody>
</table>
Fig. 28: Structural Layout of ICSSR LICs to be incorporated in the 3\textsuperscript{rd} phase of NIS Network.
Network Topology

Fig.29: Structural Layout of the Three Phases of ICSSR LICs to be incorporated in NIS Network

1. Phase 1 LICs for NIS Network
2. Phase 2 LICs for NIS Network
3. Phase 3 LICs for NIS Network

(A List of all ICSSR LICs divided in three Phases is given below)
### First Phase of NIS Network

<table>
<thead>
<tr>
<th>Name of the Institute</th>
</tr>
</thead>
<tbody>
<tr>
<td>Centre for Development Studies, Thiruvananthapuram</td>
</tr>
<tr>
<td>Centre for Economic and Social Studies, Hyderabad</td>
</tr>
<tr>
<td>Centre for Research in Rural Industrial Development, Chandigarh</td>
</tr>
<tr>
<td>Centre for Studies in Social Sciences, Kolkata</td>
</tr>
<tr>
<td>Centre for Women’s Development Studies, New Delhi</td>
</tr>
<tr>
<td>Giri Institute of Development Studies, Lucknow</td>
</tr>
<tr>
<td>Institute of Development Studies, Jaipur</td>
</tr>
<tr>
<td>Institute of Economic Growth, New Delhi</td>
</tr>
<tr>
<td>Institute for Studies in Industrial Development, New Delhi</td>
</tr>
<tr>
<td>Madras Institute of Development Studies, Chennai</td>
</tr>
</tbody>
</table>

### Second Phase of NIS Network

<table>
<thead>
<tr>
<th>Name of the Institute</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr. BR Ambedkar National Institute of Social Sciences, Mhow</td>
</tr>
<tr>
<td>Centre for Policy Research, New Delhi</td>
</tr>
<tr>
<td>Centre for Social Studies, Surat</td>
</tr>
<tr>
<td>GB Pant Social Science Institute, Allahabad</td>
</tr>
<tr>
<td>Gujarat Institute of Development Research, Ahmedabad</td>
</tr>
<tr>
<td>Institute of Public Enterprise, Hyderabad</td>
</tr>
<tr>
<td>Institute for Social &amp; Economic Change, Bangalore</td>
</tr>
<tr>
<td>NKC Center for Development Studies, Bhubaneswar</td>
</tr>
<tr>
<td>OKD Institute of Social Change &amp; Development, Guwahati</td>
</tr>
</tbody>
</table>

### Third Phase of NIS Network

<table>
<thead>
<tr>
<th>Name of the Institute</th>
</tr>
</thead>
<tbody>
<tr>
<td>AN Sinha Institute of Social Studies, Patna</td>
</tr>
<tr>
<td>Centre for Multi-Disciplinary Development Research, Dharwad</td>
</tr>
<tr>
<td>Council for Social Development, Hyderabad</td>
</tr>
<tr>
<td>Centre for the Study of Developing Societies, New Delhi</td>
</tr>
<tr>
<td>Gandhian Institute of Studies, Varanasi</td>
</tr>
<tr>
<td>Indian Institute of Education, Pune</td>
</tr>
<tr>
<td>Madhya Pradesh Institute of Social Science Research, Ujjain</td>
</tr>
<tr>
<td>Sardar Patel Institute of Economic and Social Research, Ahmedabad</td>
</tr>
</tbody>
</table>
A Schematic Diagram given below showing the structure of Network of 27 ICSSR LICs in three phases given in Figures 30 to 33.

**Star Network Topology**

**Phase – I (10 Sites)**

- **Satellite (VSAT)**
  - **CWDS** New Delhi
  - **IEG** New Delhi
  - **ISID** New Delhi
  - **CRRID** Chandigarh
  - **IDS** Jairpur
  - **NASSDOC** New Delhi (HOST)
  - **CSSS** Kolkata
  - **CESS** Hyderabad
  - **CDS** Thiruvananthapuram
  - **MIDS** Chennai

**Fig.30**

All the locations are connected with Satellite through VSAT installed on each location. They can access to HOST, Delhi as well as each other.

It can be configured as intranet and can be used for Internet access, if required.

By installing VSAT on any more location may increase/add the location on the network any time.

---

**Network Devices Required**

1. VSAT Terminal : 11 Nos. Installed on each location including Host.
2. Switch : 10 Nos. Installed on each location.
3. Rack Panels : 11 Nos. Installed each location including Host.
4. Layer 3 Switch : 1 No. Installed on Host Location.
5. RJ45 Connector : As Required Depending upon PCs connected to the Network
6. Patch Panels : 11 Nos. Installed on each location including Host.
Star Network Topology
Phase – II (9 Sites)

Satellite (VSAT)

GBPSSI
Allahabad

GIDR
Ahmedabad

CSS
Surat

NKCCDS
Bhubaneshwar

CPR
Delhi

IPE
Hyderbad

BRANISS
Mhow

ISEC
Bangalore

NASSDOC
New Delhi (HOST)

OKDISCD
Guwahati

All the locations are connected with Satellite through VSAT installed on each location. They can access to HOST, Delhi as well as each other.

It can be configures as intranet and can be used for Internet access, if required.

By installing VSAT on any more location may increase/add the location on the network any time.

<table>
<thead>
<tr>
<th>Network Devices Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. VSAT Terminal</td>
</tr>
<tr>
<td>2. Switch</td>
</tr>
<tr>
<td>3. Rack Panels</td>
</tr>
<tr>
<td>4. Layer 3 Switch</td>
</tr>
<tr>
<td>5. RJ45 Connector</td>
</tr>
<tr>
<td>6. Patch Panels</td>
</tr>
</tbody>
</table>
Star Network Topology
Phase – III (8 Sites)

Satellite (VSAT)

CSDS
New Delhi

SPIESR
Ahmedabad

MPISSR
Utjain

CMDDR
Dharwad

CSD
Hyderabac

GIS
Varanasi

NASSDOC
New Delhi
(HOST)

IIIE
Pune

ANISISS
Patna

Fig. 32

All the locations are connected with Satellite through VSAT installed on each location. They can access to HOST, Delhi as well as each other.

It can be configured as intranet and can be used for Internet access, if required.

By installing VSAT on any more location may increase/add the location on the network any time.

<table>
<thead>
<tr>
<th>Network Devices Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. VSAT Terminal        : 08 Nos. Installed on each location including Host.</td>
</tr>
<tr>
<td>2. Switch               : 08 Nos. Installed on each location.</td>
</tr>
<tr>
<td>3. Rack Panels          : 09 Nos. Installed each location including Host.</td>
</tr>
<tr>
<td>4. Layer 3 Switch       : 00 No. Installed on Host Location.</td>
</tr>
<tr>
<td>5. RJ45 Connector       : As Required Depending upon PCs connected to the Network</td>
</tr>
<tr>
<td>6. Patch Panels         : 08 Nos. Installed on each location including Host.</td>
</tr>
</tbody>
</table>
Final Network Topology
(Total 27 Sites)

Satellite
(VSAT)

NASSDOC
New Delhi
(HOST)

All the locations are connected with Satellite through VSAT installed on each location. They can access to HOST, Delhi as well as each other. It can be configures as intranet and can be used for Internet access, if required. By installing VSAT on any more location may increase/add the location on the network any time.

<table>
<thead>
<tr>
<th>Network Devices Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. VSAT Terminal</td>
</tr>
<tr>
<td>2. Switch</td>
</tr>
<tr>
<td>3. Rack Panels</td>
</tr>
<tr>
<td>4. Layer 3 Switch</td>
</tr>
<tr>
<td>5. RJ45 Connector</td>
</tr>
<tr>
<td>6. Patch Panels</td>
</tr>
</tbody>
</table>
The Network Topology would be Star for all the three phases since it is VSAT Technology. The Network Devices required are given in Figures 30 to 32. The Final Network Plan of all the 27 sites are also given in Figure 33.

The VSAT Network is proposed to be opted in this because:

- Expansion at any stage is possible.
- No separate lease line is to be put so it is cost-effective.
- Less dependency is there.
- More reliable than Dial Up and ISDN.
- Cost per year is nominal, i.e. 1 lakh approximately.
- Less costly
- VSAT Technology is costly only at the initial stage due to satellite expenditure.

VI.12 **FINANCIAL REQUIREMENT**

Table 45: *Approximate Cost of the Network Equipment and Internet Access*

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Item</th>
<th>Qty.</th>
<th>Cost (Approx.) (Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>VSAT</td>
<td>1</td>
<td>93,000.00</td>
</tr>
<tr>
<td>2.</td>
<td>24 Port Layer 3 Managed Switch (D-Link)</td>
<td>1</td>
<td>49,000.00</td>
</tr>
<tr>
<td>3.</td>
<td>24 Port Managed Switch (D-Link)</td>
<td>1</td>
<td>35,000.00</td>
</tr>
<tr>
<td>4.</td>
<td>Rack Panel (6U)</td>
<td>1</td>
<td>2,500.00</td>
</tr>
<tr>
<td>5.</td>
<td>24 Port Patch Panel (D-Link)</td>
<td>1</td>
<td>3,500.00</td>
</tr>
<tr>
<td>6.</td>
<td>RJ-45 Connector</td>
<td>1</td>
<td>150.00</td>
</tr>
<tr>
<td>7.</td>
<td>Internet Bandwidth Charges Quarterly @ Rs.57,750.00 inclusive of all Taxes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>Satellite Charges Quarterly @ Rs.14,440.00 inclusive of all Taxes.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>Wireless Processing Charges annually @ Rs.5,667.00.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
VI.13 PITFALLS IN PLANNING THE NIS NETWORK OF ICSSR LICs

- lack of proper designing at the sectoral level.
- lack of coordination among ICSSR LICs
- insufficient financial support from Management
- lack of availability of sufficient infrastructure with the participating LICs.
- lack of support and participation at the Institutional level
- building up of information resources at the Institutional level
- understanding of common goals and objectives
- lack of appropriate telecommunication links within the participating LICs.
- Database creation and other documentation services as part of the input sub-system.
- uniform hardware and software in participating LICs.
- lack of shared decision-making and follow-up
- lack of sufficient support of physical and human resources
- lack of interest of Information Professionals
- lack of common standards essential for networking.
- lack of library legislations and policy.

It is extremely essential to explore the problems related to establishing the NIS Network and thereby assessing the prospects towards planning the same in terms of identifying various resources. The understanding of the financial basis for the NIC Network including manpower provisions, information infrastructure, and other technological components.

VI.14 ESTABLISHING THE ROLE OF ICSSR/NASSDOC IN PLANNING THE NIS NETWORK OF ICSSR LICs

The concept of a National Information System in social sciences in India is now catching momentum but it is yet to fetch a concrete shape and form. This is because
of a positive support by Government as well as result oriented initiative from the apex body of social sciences research in India. The information activities articulation of various services and growth of social science research institutions have increased manifolds. Thus, it has become mandatory for these fast growing inter-disciplinary social science research institutes to form an information grid for social sciences through their coordination. It would not be out of place to mention here that social science research institutions along with some other professional organisations have made bit of a headway in this direction.

It is most relevant here to say that a NIS Network of ICSSR LICs be thought of at the initial level since these research institutes are inter-disciplinary in nature and are also spread over evenly at the national level. At a later stage, when the NIS catches shape and strength, other professional organisations, academic institutions and government departments which are contributing in their own way may join in to share their valuable resources.

The social science research in the country has been promoted by the ICSSR which has aimed at building up the research infrastructure, provided maintenance and development grants to its 27 research institutes, financing research projects, awarding research fellowships, assisting in training programmes, etc. The ICSSR established in 1969, started providing documentation and bibliographical services by way of setting up Social Science Documentation Centre which later saw an expansion in form of NASSDOC in 1986. Its growth and planning was done by late Shri J.P. Naik, the first Member-Secretary of ICSSR. Several activities like preparation of Union Catalogue of Social Science Periodicals/Serials and Retrospective Indexing in social sciences were initiated during his initiation.
VI.15 OBJECTIVES

The NASSDOC work on certain objectives to provide full range of documentation and information services, which are as follows:

(1) To inform scholars about the current and retrospective materials available in various fields of research.
(2) To assist scholars in the procurement of research materials
(3) To strive for bibliographical control of research material
(4) To assist research institutions in creating documentation and bibliographical services
(5) To maintain linkages with other documentation and information centres
(6) To bridge the gap between professionals and information technology.

VI.15.1 PROGRAMMES AND ACTIVITIES OF NASSDOC

The major programmes and activities of NASSDOC include:

(1) Building up a collection of reference materials and works on research methodology. Here major efforts are made in collecting: (a) unpublished doctoral theses approved by Indian Universities and foreign theses on India; (b) research reports of the projects undertaken by ICSSR and other social science research institutions assisted by ICSSR; (c) Working papers presented at ICSSR, funded seminars and conferences; and (d) periodicals of research value in social sciences.

(2) Striving for bibliographic control over social science materials by bringing out various documents under Research Information Series. Nearly one hundred titles have so far been brought out.

(3) Providing bibliographical information about Indian publications in social science disciplines to international documentation agencies.

(4) Providing select bibliographies on request.

(5) Providing micrographic and reprographic services.

(6) Providing document supply service to scholars from outside Delhi.
(7) Awarding study grants to scholars for working at libraries of their interest in India.
(8) Providing consultancy to social science institutions in setting up documentation and information centres.
(9) Providing facilities to its staff for participation in professional seminars and conferences through contributing papers and taking active part in their deliberations and also them to attend short-term refresher courses.
(10) Conducting professional training courses under Continuing Education Programme.
(11) Processing project proposals involving financial assistance to documentation and bibliographical projects for consideration by ICSSR Committee on Documentation Services and Research Information.
(12) Maintaining linkages with national and international data centres and libraries.
(13) Entering into agreement with national and international organisations for mutual exchange of publications (at present about 2000 Institutions are on exchange list).
(14) Promoting sale of ICSSR publications, participating in book exhibitions and undertaking sale of Government of India publications to research institutes.

VI.15.2 DOCUMENTATION PROGRAMMES OF NASSDOC

The centre has three broad categories of documentation programmes:

⇒ Those undertaken directly or in collaboration with selected institutions;
⇒ Those undertaken by ICSSR Regional centres and ICSSR aided Research Institutes; and,
⇒ Those assisted by the Council under its grant-in-aid scheme.

VI.15.2.1 DIRECT PROGRAMMES

Under this programme, the following activities are undertaken:

(1) Union List of Social Science Periodicals
(2) Union Catalogue of Social Science Periodicals/Series
(3) Union Catalogue of Newspapers in Delhi Libraries
VI.16 SERVICES AT THE NASSDOC

It provides the following services:

- Consultation services
- Information Dissemination – This is done through state-of-art reports, abstracting journals and NASSDOC serial and ad-hoc publications
- Abstracting services
- Continuing Education Programmes
- Document Delivery
- Consultancy
- Translation
- International and Regional level Linkages.

Among the new initiatives in library services, the NASSDOC provides:

- Computerized database services
- Research projects database
- SDI services
- Micro-filming of Research Materials
- Research facilities to Scholars
- Bibliography on Documentation Services

VI.17 USE OF IT AT NASSDOC

The NASSDOC Library caters to a larger category of members, i.e., general, life, institutional and consulting members. Besides a vast collection of documents, it subscribes to 256 journals, 4 daily newspapers, and 12 popular magazines. The
library has exchange agreement with many national and international agencies. The IT services and facilities which the NASSDOC provides are as follows:

- **Bibliography on Demand** is a widely known service provided by the NASSDOC to social science research community. Bibliographical searches are made from different machine-readable databases including CD-ROMs available in NASSDOC.

- **Microfilming** of 800 theses have been done recently.

- **Databases Acquisition** on multiple media, e.g., paper floppies, hard discs, CD-ROMs have been done. These are being successfully used for searching literature/references on specific topic on demand.

- **Online Databases** available through Internet are also subscribed now by NASSDOC. One of them is Indiastat.com.

- **Library Network Link** is with DELNET and NASSDOC can access 10 databases hosted by DELNET in its website. These are searched for the purpose of compilation of bibliographies and to check the holdings of member libraries for researchers.

- **Library Automation** - LBSYS version 4 under Windows NT is being used for library automation, acquisition of library documents, cataloguing of books, theses and research project reports. The process of serial control and article indexing is also handled by LIBSYS software.

- **Retrospective Conversion** of about 6000 publications which formed the part of core collection of the library has been done. The documents have been classified by using DDC 21st edition, catalogued according to AACR-II and subject heading assigned with the help of Library of Congress subject headings 20th edition. The processed data has been entered into LIBSYS version 4.0 by using UNIMARC format in Windows NT platform through ISO 2709 exchange format to enable NASSDOC to use the same through OPAC (Online Public Access Catalogue).

- **Digital Resources** are also available at NASSDOC in form of various in-house databases, which are available for sale and are also searched by scholars.
A Cyber Café with a high speed Internet connectivity facilitating access to online electronic databases, directories, library catalogues and other Internet based sources.

Radio Frequency Identification (RFID) Technology has been provided as borrowing facility to the members supported by a hassle free automated book issue/return system.

VI.18 FUTURE PROGRAMMES

In the field of social sciences, a number of libraries and information centres with differing functions, scope and efficiency have come into being under the auspices of academic institutions, research institutions, government departments, etc. It is necessary to coordinate or marshal such a large number of subsets of information services into well structured national information system or network. This would facilitate better service to comparatively a larger number of users with limited available resources: financial, human and material. The National Information System in Social Sciences (NISSS), planned by NASSDOC is of a multi-tier system with two main components, viz., NISSS Focal Point and NISSS Network of Information Centres and services. Its major programmes would be:

- Building comprehensive world collection of social science material by way of supplementing the national collections.
- Providing computerized retrospective and current indexing and abstracting services.
- Providing technical and socio-economic information to the researchers and administrators.
- Procuring copies of documents, on request, from whichever source available.
- Developing relations and cooperation with national and international organizations engaged in social science information.
The system has been planned for a long time. But due to financial constraints, it has so far been not possible to achieve break through. Now, as a first step, NASSDOC envisages to develop a coordinated system consisting of ICSSR six regional centres and twenty seven ICSSR financially aided research institutes. These centres have succeeded in collecting a sizeable research material and are engaged in various documentation activities. The system would endeavour to implement some of the programmes identified above. The experience gained will be helpful in enlisting the cooperation of other institutions and networks.

Since the NASSDOC already has plans for establishing a National Information System in Social Services as part of its future programmes, it becomes easier for us to plan and implement the NIS Network for ICSSR libraries. The ICSSR potentially being the most appropriate body to become the focal point for the coordination and cooperation of a network of ICSSR LICs. The ICSSR will work along with a competent advisory committee. It will also have a number of working Groups and Expert Committees to take care of each of the dimensions of the system.
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