

**A VILLAGE LEVEL ANALYSIS OF THE FLOW AND  
ACCESS TO INFORMATION : A STUDY OF  
MEGHALAYA AND NAGALAND**

**ABSTRACT**

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## **Background**

The emphasis of the present study is on information as a vital resource in all the development processes and its role in improving the quality of human life. In the present-day information-intensive society, every individual needs to have access to information that is pertinent to all spheres of life. Every development process and contemporary human conditions depend greatly on the access to information that is precise, relevant, accurate, adequate, expeditious and timely available. The role and value of information in modern society has been increasingly recognised, which has become apparent even in the rural settings. In fact, the need for information relating to all aspects of life is felt more acutely by the rural masses. Reaching the rural populace with valuable and appropriate information is the key to success for any attempt at bringing an all round national development.

Today, the strength and welfare of a nation greatly depends on its information richness. The world is divided between the information rich and the information poor. Even within a society, people are divided into haves and have-nots of information— the latter usually being the ignorant

and the downtrodden rural populace. It is, therefore, very crucial to provide the rural populace with appropriate and timely information for individual as well as national progress.

The review of related literature, in this regard, brought to light the following points summed up as below:

- (i) Information is a vital resource in all the development processes equally essential both in the urban as well as the rural settings.
- (ii) There is a general consensus that the benefit derived from the adequate information flow and access transcends all geographical and cultural boundaries.
- (iii) There exist wide gaps in the information flow and access between the urban and rural areas, which today has become a major area of concern for the information professionals, policy makers, researchers, administrators and others.
- (iv) Though the extent and intensity of the information needs and seeking behaviour varies from person to person, in any given socio-economic and political environment, it is generally

accepted that the need for information relating to all aspects of life is felt more acutely by the rural dwellers.

- (v) Considering the multi-dimensional nature and role of information, institutions and professionals, involved in information services are faced with increasingly demanding roles in providing appropriate and concerted information services to the rural populace.
- (vi) A complete understanding of the community in terms of their physical environments, socio-economic and political circumstances, their beliefs, traditions, values, life-styles, habits and their psychological outlook has been considered as a very crucial factor in providing effective and efficient information services to the rural public.
- (vii) The indigenous knowledge base and its applications has to be taken into consideration in attempting to provide effective information services to the rural folks.
- (viii) Knowledge of the existing information sources, channels and services in the rural setting has been found very vital for the success of any attempt to provide effective information services.

With this background, the present study was carried out to assess the volume of information flow and access in the rural areas of the two North Eastern states of Meghalaya and Nagaland.

### **Methodology**

The methodology adopted for the study include the following considerations:

**Objectives:** The objectives of the study were:

- (i) To identify the sources and channels of information flow and access in the villages.
- (ii) To undertake a comparative analysis of the information flow and access patterns in Meghalaya and Nagaland.
- (iii) To propose suggestions and recommendations for effective information services in the rural areas.

**Hypotheses:** The study was carried out with consideration to the following hypotheses:

- (i) The interpersonal communication among members of a social system serves as an important source and channel of information flow and access.
- (ii) Use of information sources and channels vary across socio-economic variables.
- (iii) Information flow and access vary across geographical variations.

### **Research sites and sampling**

Personal familiarity and accessibility of the research sites were considered essential in selecting the research areas. Accordingly, two North Eastern states of Meghalaya and Nagaland were selected. Further, one district from each state, located at a distance of not less than 150 kilometers from the state capital were selected. Following this, two villages from each district were selected with one village located within the radius of 5 kilometers and another located at a distance of not less than 60 kilometers from the district headquarters. The total number of households was also considered in selecting the villages. Only the villages having between 100 to 400 households were considered for the purpose of the present study. Finally, 20 percent of the total households from each

selected village were taken as the sample population and the heads of the families or anyone from the family who can provide necessary information were chosen as the respondents. All together, 155 observations were taken from the four selected villages.

### **Data collection**

A pilot survey was carried out using structured-interview and observation methods to assess the relevance of the study. Keeping in mind the objectives of the study and on the basis of the information gathered through the pilot survey, the final schedules were constructed and the data were collected personally. This was supplemented by personal observations and discussions with the villagers.

### **Data analysis**

Data analysis and testing of hypotheses have been made using appropriate statistical tools.

## **Findings**

The findings of the study are:

- (i) Villagers in Meghalaya and Nagaland need more information pertaining to all aspects of life.
- (ii) The interpersonal (IP) communication sources and channels are more effective than the non-interpersonal (NIP) communication sources and channels in meeting the information needs of the villagers. It has been found that the villagers, irrespective of their socio-economic backgrounds, use IP sources and channels to a greater extent than NIP sources and channels. This has been primarily because of the ready availability and accessibility of the interpersonal sources and channels to the villagers.
- (iii) The non-interpersonal communication sources and channels considered in the study do not have constant touch with the villagers and are not readily available when needed. This is why information flow and access through these sources and channels have been inadequate in information dissemination to the villagers.

(iv) It has also been found that for most of the purposes, the extent of use of various information sources and channels do not vary across socio-economic variables though it varies in certain cases.

The variations are indicated mostly in the extent of use of NIP sources and channels, which indicates that the villagers use NIP sources and channels only to a limited extent.

(v) There are no differences on information flow and access and the extent of use of various information sources and channels across geographical variations for most of the purposes though negligible differences exist for certain purposes. Therefore, the hypothesis that 'information flow and access vary across geographical variations' has been partially rejected.

(vi) The total volume of information flow and access through both interpersonal and non-interpersonal sources and channels in the villages for various purposes are found to be very low.

(vii) Poor communication infrastructure existing in the villages remains a major drawback in information flow and access in the villages.

## 5.2 Suggestions:

The following suggestions have been proposed:


- (i) It is suggested that there should be a Village Information Centre (VIC) in every village through which integrated and concerted information services can be provided to the villagers.
- (ii) The study also strongly suggests the need for an integrated rural information system established specifically for the purpose of providing information tailored to meet the requirements of rural masses of the North Eastern states. Such need can only be ignored at the cost of individual as well as national progress. In this regard, a model for the North Eastern Integrated Rural Information System (NEIRIS) has been proposed.

# NORTH-EASTERN HILL UNIVERSITY


January, 2002

I, Moses M. Naga, hereby declare that the subject matter of this thesis is the record of work done by me, that the contents of this thesis did not form basis of the award of any previous degree to me or to the best of my knowledge to anybody else, and that the thesis has not been submitted by me for any research degree in any other University/ Institute.

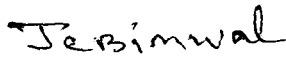
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# **CHAPTER - I**

## **INTRODUCTION**

## **1.0 Background**

Information is now considered a vital resource for overall development and to improve quality of life in all human society. It is the major resource particularly for policy-makers, planners, decision-makers, scientists, R & D organizations, technologists, economists, executives, researchers, professionals, business houses, and the general masses. Informed citizens are in a better position to analyse and find solutions to day-to-day problems and can make sound judgments and effective decisions. Every development process and contemporary human conditions depend greatly on the access to information that is precise, relevant, accurate, adequate, expeditious and timely available.

The most spectacular events in the course of human civilization have been witnessed during the 20<sup>th</sup> century which ushered in rapid progress in all fields of human endeavour, particularly in the scientific, technological, political, economic, educational, social and cultural fields. Such global changes have been possible largely due to the advancements in the generation, dissemination, and utilization of information through highly efficient and sophisticated methods and media. In other words,

mankind's new-found capability to communicate and exchange ideas and information across geographical, political and cultural boundaries can be attributed to the accomplishments in the areas of information and communication technologies. The application of modern technology to communication and transmission of information has greatly enhanced the speed of generation, storage, processing, retrieval and dissemination of information. From the ancient papyrus rolls and stone engravings to the modern printed and digital forms, the modes of information communication, indeed, have undergone complete transformation. This has been possible largely due to the emergence of modern digital computers, advances in telecommunications, and the appearance of interactive multimedia technology such as CD-ROM, DVD, VCD and high-capacity optical devices which are capable of handling millions of bits of information in audio, video, textual as well as in graphic form. Another outstanding by-product of information technology is the INTERNET with its powerful feature of interactivity through the World Wide Web, which has left its profound impact on the modern information society. Indeed, information technology has enhanced the value and significance of information. Today, the notion of information has changed

from something to know to something to have as any other resource. Baker (1984) was right in this regard “*Until very recently information was output, it was read in newspapers and books. Now it is raw material, as important as coal, steel and petroleum. As such it can generate wealth by enabling resources to be better exploited.*” No wonder, the present age has been rightly called the “information age.”

The role and importance of information in modern society has become multi-dimensional as its impact on the individual and the society as a whole is felt in an increasing measure and in diverse ways. In fact, there is no field of human activity in which information is not an essential ingredient. Today, importance of information in bringing about changes and development in society is the major emphasis of information scientists, researchers, administrators, academicians, social scientists and others.

### **1.1 Information in rural development**

An inevitable trend in every society today is change and progress in which information plays an indispensable role. A society can only be

considered developed when its members are well-equipped with information pertaining to all spheres of life. The multi-dimensional role and value of information in modern society is not only apparent in urban areas, but equal emphasis need to be given to the role of information in rural settings in order to bring about an all-round development. The non-availability of relevant information through appropriate media for relevant purposes remains a major obstacle to any attempt at reaching the benefits of development to the rural masses.

In India, most of the rural populace is being deprived from accessing to information relating to education, health, economic, agriculture, politics and socio-economic benefits extended by the government. It is, therefore, essential to revitalize rural people by providing them information, which they implicitly and explicitly need. Thus, the role of information in rural development may be discussed under the following headings:

### **1.1.1 *Educational scenario***

Education plays a pivotal role in the development and progress of modern society in which information forms a key ingredient. Comparatively now human life has become more complex, the education system is under constant pressure for continuous improvement and adaptation to the changing needs. To ensure reasonable standard and quality of education where constant interaction with the latest trends is required, access to relevant, adequate and didactic information has now become indispensable.

In a rapidly developing country like India, where the bulk of the population consists of illiterate rural folks, the benefits of modern education, regrettably, is yet to reach the masses. Apart from formal education, non-formal education through distance education programme, vocational and training courses have become increasingly relevant to the adults in the rural areas. The powerful modern educational facilities including application of educational media and tools such as computers, televisions, radios, audio-visual equipments and other non-book materials for the delivery of software and access to courseware written for specific

subject areas need to be brought nearer to the rural people. In fact, the role of modern educational technology is more crucial in rural environment than in urban areas.

Application of information technology to modern education has been gaining momentum day by day, particularly in improving the educational system. This technological revolution, reiterated Kaula (2000), indeed, has opened up new avenues for education by widening the boundaries of the classrooms and enabling access to education to those who are unable to afford for formal education. Hashim (2000), in this regard, lauded the concept of 'Connected Learning Community,' developed by Bill Gates of Microsoft Corporation in which use of information technology to improve the education system was emphasised. It involves use of computer technology to enhance and promote teachers' creativity and efficiency in teaching and creative thinking and learning skills by the students, parents and the extended communities. This type of e-learning provides every student a personal computer and access to information online, while they are allowed to pursue an individual path of learning best suited to his or her needs. Emphasis is also on learning not

only from access to information alone but from continuous and dynamic interaction between teachers, students, parents and the extended community. Such a system facilitates sharing of knowledge and information through global interaction. However, in India, this kind of system is yet to receive its prominence though it has its relevance not only in urban areas, but is equally pertinent and important even for the most far-flung rural areas. Modern educational facilities, which involves the use of information and communication technologies will not only enhance the value of education but also accelerate the progress and uplift of the rural populace. Therefore, to bring about an overall national development, it is imperative on the part of the policy-makers and those involved in rural development to give immediate emphasis in reaching with the required modern educational facilities to the rural populace. In short, the availability, smooth flow, access and proper utilisation of appropriate information play a decisive role in the overall educational attainments of any progressive society. Thus, computerized information products and services relating to formal and non-formal education should be made easily accessible to rural population for their development and progress.

### **1.1.2 *Socio-cultural scenario***

Information, as a crucial factor for raising the cultural standard and all-round progress of the society has its prominent place in the socio-cultural transformation. Advancement of modern society requires that each member of the society stays well-informed in matters relevant to day-to-day existence. Information raises the level of awareness and augments insight of the average member of the community. Information also enhances interpersonal relationships and sense of accommodation cutting across social and cultural barriers between various groups and communities, thereby, facilitating peaceful co-existence.

No society or cultural group can afford to stand in isolation in this age of globalisation where every change and development process is information-intensive. An inevitable result of exchange of ideas and information across geographical, political and cultural boundaries is acculturation, which has become a powerful phenomenon that no modern society can avoid and this forms an important feature in rural development. However, a large rural population in India is still being deprived from interacting with the outside world mainly due to poor

communication facilities, poor transportation, illiteracy and adverse geographical conditions. It is, therefore, essential to give the due emphasis on facilitating exchange of ideas and information among different socio-cultural groups that has its profound role in transforming distinct groups up to the grassroots level.

### **1.1.3 *Political scenario***

The role of information in the political life of a nation is equally important. It is the source of innovation, policy formulation and of executive functions. Freedom of access, use and dissemination of information lead to a political process characterized by increased participation and consensus. It also ensures political awareness, enlightens and broadens the scope of one's thinking and makes one a better and responsible citizen. By and large, well-informed politicians can bring in reformative and constructive schemes and programmes in the society. At the same time, only well-informed electorate can exercise their political rights and duties by participating in the political process rather than remain mere passive spectators.

The greatest threat to democracy like ours, however, is ignorance that leads to exploitation of political rights of the citizens by a few vested interests coupled with the exploitation on the basis of class, caste, religion, etc. This, in fact, is a common feature of the rural populace. It is at this juncture, that political education, which involves giving the citizens relevant and adequate information through appropriate media, on their political rights, duties and responsibilities, has its prominent place in reforming the political system of a society. In a democracy, the political process involves all members of the society starting from the grassroots level to the national level. It is, therefore, imperative on the part of the political leadership as well as the electorate to have access to the right information at the right time within each level of the socio-political hierarchy. Further, appropriate sources and media of information must be channelised to meet the specific needs at every level of the political structure. Emphasis, therefore, should be on the optimum utilization of information that is relevant, adequate and timely to bring about a higher level of political consciousness to all members of the political system.

#### **1.1.4 *Economic scenario***

The increasingly decisive role of information in determining the economic well being of a society is being felt throughout the world. The generation and use of information results in scientific and technological development and the further dissemination of such information creates financial resources in the forms of foreign exchange as pointed out by Moorthy and Karisidappa (1996). In fact, “Information society” has already become a cliché in the advanced countries where the bulk of the labour force is engaged primarily in the information sector of the economy. The latest trend in industrialised and information-based society is the emergence of ‘knowledge industries’ engaged in production and distribution of ideas and information rather than goods and services. The emergence of e-commerce and e-business is a by-product of modern information technology, in which, exchange of information across the globe forms a major part. The organized generation, systematic flow and use of information enhances the economic strength of a nation. It is also an integrating factor for capital markets at the national and international levels and increases the market competition and market efficiency. Information also creates awareness of economic opportunities that lead to

entrepreneurial activities and emergence of new areas of economic activity.

Today, information has become a major resource for business houses. Their organisational success mainly depends on right and effective decisions, in which availability of relevant information and access to it has become crucial. In today's fiercely competitive economic scenario, only those who are well-equipped with critical information can have an edge over others.

Information also can play a very important role in alleviating unemployment problem, economic inequality and improving the living standards of the rural communities. However, most of the rural population in India is being deprived from accessing to information pertinent in their day-to-day life. In this regard, Sambasivan and Rahiman (1984) pointed out that most of the rural craftsmen and artisans in India still follows the age-old traditional methods using the inefficient primitive tools and equipments, mainly due to the lack of awareness of using modern techniques, tools and processes, in spite of the fact that the country has

been able to made rapid advances in science and technology. This is due to lack of access to right type of information. Though, various development and welfare schemes and programmes meant for the rural people were launched from time to time, they are being exploited and deprived from enjoying the benefits of modern development and, thus, the pathetic economic conditions of the ignorant rural folks remain the same if not worst. Therefore, it is very essential to reach the rural populace with the relevant and timely information to enable them to improve their economic conditions.

Information pertaining to modern farming and agricultural techniques has become indispensable for a developing country such as India, particularly in the rural settings, where agriculture constitutes a major portion of the economic activity. The farmers today require to have knowledge on the latest and relevant farming technologies. There is also a great need for market information to ensure the rural farmers get the deserving returns of their farm products. Therefore, immediate emphasis should be given on the proper flow and utilisation of information and intensification of the crucial role of agricultural extension workers as the

main disseminators of farm information in the rural areas, particularly where no other channels and media for information communication are available.

#### **1.1.5 *Health care scenario***

Information plays equally a very crucial role in health-care system. Health is a major determinant of human development and the quality of human life. Health does not imply the mere absence of sickness in the body, rather it is a state of complete physical, mental and social well being and not merely an absence of disease or infirmity as has been defined by WHO (1979). Thus, the concept of health encompasses from physical fitness to psychological and spiritual well-being. Health is not only a personal boon but it is an asset to the society as well. Issues related to public health form a major concern of governments and their agencies as well as the non-governmental organisations.

Provision of the right information at the right time to the right person can complete a lot of the required but strenuous preventive processes. Information covering prevention and eradication of

communicable diseases, sanitation, family welfare and child care, food and nutritional standards, community health, environmental pollution and its effects on health, and other pertinent issues must reach the rural masses through appropriate media. However, in India, most of the rural areas suffer from lack of medical and health care facilities such as lack of proper dispensaries and public health centres, lack of ambulances, inadequate number of qualified doctors and other health workers. Apart from this, there is also need for proper health education to promote awareness and to sustain reasonable levels of health care standards in the society. Indeed, timely, relevant and accurate information can help alleviate various public health hazards.

#### **1.1.6 Conclusion**

Information poverty is a curse to individuals as well as to the society and the nation. Today, the strength and welfare of a nation greatly depends on its information richness. The world is divided between the information rich and the information poor. Even within a society, people are divided into haves and have-nots of information— the latter usually being the ignorant and the downtrodden rural populace. The necessity for

compression and the fast flow of information from one corner to another the world over has brought about revolution in the information communication technologies which have attained the do-or-die prominence. It is apparent in the emergence of digital computers, advances in telecommunication systems, interactive multimedia technology, information superhighways such as Internet, and so on. All these advancements have cut across the distance barrier and have made it possible and easier to have access to information regardless of the location. Indeed, the progress and developments in information communication systems is the main force that has turned today's world into one 'global village.'

Reaching the rural masses with valuable and appropriate information is the key to success for any attempt at bringing an all round national development. In a democratic country such as India, where we talk in terms of equality, justice and rights, duties and responsibilities, liberty and individuality, self-esteem and improved living conditions, the right to information has to be given the immediate emphasis and, thereby,

information poverty, particularly in rural areas is eradicated for the welfare of the rural community.

Information is increasingly being recognized as a keystone of social good of people improving overall development of the community. National Consumer Council (1997) recognized information access as the fourth right of citizenship, others being right to civil, political and social. Access to right type of information is to be exploited which is only possible if the Government initiates planning in this direction particularly to the benefit of the rural people living in remote locations. In this regard, Wakelin and Simelane (1995) reiterated that though in the urban areas, information through media and modern facilities is increasingly available, the rural-based societies continue to suffer from lack of information. In urban areas, people are enjoying facilities of e-commerce, e-business, e-learning, information brokerage and many other benefits of information and communication technologies. These facilities of accessing wealth of information and knowledge must reach every village of India for individual as well as national progress.

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## **CHAPTER - II**


### **REVIEW OF RELATED LITERATURE**

*“Accessibility of precise reliable information— scientific, technological, commercial and managerial at the right time to the right personnel in the form most conveniently usable by him, can help to minimize the wastage of resources due to unnecessary and unintended re-invention, re-discovery, re-development and above all the making of unfruitful decisions which resulted in wastage of resources... The availability of the right type of information can trigger new directions in research, development and managerial action.”-- Paul Atherton*

## **2.0 Introduction**

The above remark by Atherton could not have been more appropriate in the context of contemporary global information explosion whereby information as a commodity has assumed a significant role in all spheres of human activity. Indeed, information has become a basic resource required by every member of the society. In this regard, Crickman (1979) argued that there are many reasons to value information, but none is more significant than the fact that access to appropriate and timely information can expand the resources available to the society as a whole and to its members individually.

Beal (1979) pointed out that the value and need of information may differ from person to person depending on the situation and the need of

the users, as the information needs are strappingly influenced and conditioned by the specific circumstances of people and the places in which they live. Humphreys (1984) also stressed that human needs have become more complex with our everyday life getting more sophisticated and at the same time, with more leisure time available, the demands for the means to enjoy fuller lives have broadened and deepened. As a consequence, information has a variety of connotations --- from highly technical and professional to purely recreational aspects, from academic and research purposes to day-to-day practicalities. To enhance the value and utility of information, argued Gopinath (1985), it requires understanding of the needs of the information users and provision of information in the appropriate format and level. In this regard, Barua (1985)  emphatically stressed that formulation of any national information policy must identify the needs of the country for catering to the educational, cultural, economical, political and recreational information needs and aspirations of the citizens.

Girja Kumar (1990) also argued that a user, the central figure around whom the whole world of information producers, systems and

services revolves, is bounded within his interactive, cognitive, emotional and social system, apart from the fact that his information seeking may be delimited by his lack of accessibility to information. It is, therefore, important to know and understand the users and their diverse needs of information by identifying their background, interest, specialization, etc., in order to enhance the effectiveness of information flow and access.

In today's increasingly complex, multicultural and information-intensive society, one cannot think and talk of all-round development without proper information flow and its accessibility, as there exists a close relationship between information flow and access and the development processes. Mchombu (1995), in this regard, argues that access to appropriate information is the key factor in the sustained development of any society because it reduces uncertainty and enhances awareness of possible courses of action for better solutions. Barwise and Seligman (1997) have also reiterated that proper information flow and access is a necessity in life--- it guides every action, moulds every thought, and sustains the many complex interactions that make up any natural system or social organisation. In this context, Mangla (1998)

pointed out that information, like any other resource, needs to be well managed through proper support and coordination in growth and usage, to avoid the problem of being wasted and inefficiently utilised and, thereby, bring out desirable impact on the development processes.

The need and importance of information in every development process and contemporary human conditions have been widely recognized both by those involved in decision making and development processes as well as the potential recipients of such benefits, reiterated Leach (1999; 71). The smooth flow of information and its accessibility from any corner of the world has accelerated the processes of socio-economic progress of the modern societies, which has become a major global feature. In this respect, Dasgupta (2000) was right when he lauded the advancements in information and communication technologies which had transformed the way information is being generated, collected, organized, stored, repackaged, retrieved and disseminated.

In today's information-intensive society, there is an overwhelming proliferation of information flow and access, particularly in the urban

areas. However, most of the rural folks are yet to enjoy the benefits of modern advancements in information communication technologies. The rural people too have information needs like their counterparts in the urban areas. It is, therefore, this uneven geographical spread in information flow and access that has become a major area of concern today. In this regard, several studies conducted both within the country and abroad have been highly illuminating. The reviews have been made chronologically spreading over two decades.

### **2.1 Studies undertaken abroad:**

**Allen (1977)** maintained that there existed a close relationship between innovation diffusion and information flow. In this context, an attempt was made to assess the effectiveness of the existing formal and informal information systems in spreading change-inducing innovations in the rural areas of Papua New Guinea.

The author argued that the formal information systems and channels such as government agencies and mass media had not been effective in reaching the villages with appropriate information. As for

instance, information usually got lost in the upper levels of the system--- a problem of the top-down hierarchical information filtering process. On the other hand, the author maintained that informal systems such as face-to-face communication between fellow villagers of the same village or a villager to another of a different village were found very effective and efficient at moving information into rural villages. However, the author reiterated that the problem in informal systems of information communication was that of its slowness in movement, inability to cover a wide area, and sometimes got obsolete, as information moved with the movement of the people.

Therefore, the author suggested that these two systems be merged together, i.e., information from formal systems passes to the villages through informal channels. In a word, the dominant nature of information flow into the villages through the informal channels should be taken into consideration to make information flow through formal systems more effective.

In the UNISIST International Conference on Scientific and Technological Information for Development (1979), the importance of information as a critical resource in development was stressed. In this regard, it was argued that transfer and adoption of scientific and technological innovations for development in the rural sector required conditions and mechanisms different from those needed for development in the urban and industrial sectors. Provision of information services in the rural areas should, therefore, take into consideration the following points:

Rural development covers not only adoption of improved farming techniques, but also included a wide range of socio-economical aspects.

- (i) An individual either belonging to the community or somebody who was well acquainted with the local environments, can cultivate better response in dealing with the rural population, especially when the contact is to be supported with practical demonstrations and audio-visual presentations in the language of the community. This would not only encourage but also enhance the participation of the rural people in the development programmes.

(ii) A proper communication between the development planners and the grassroots level should be established for better feedbacks. In this context, the indigenous knowledge of the rural people should be taken into consideration in developing appropriate technologies for the rural populace.

(iii) It was also emphasised that public libraries, in coordination with other information agencies, should play an active role in facilitating the effective information flow and access up to the grassroots level.

**Drennan and Drennan (1980)** also pointed out that most of the rural dwellers in America remain ear-oriented because oral information came from verifiable sources as compared with the unseen sources of information of printed materials and other forms— a culture developed from sparse population distribution and the relatively small clusters of people, which encouraged personalized relationship among the rural dwellers. The organized sources of information, which basically come from outside or urban areas, usually short in supply, were viewed with suspicion. As a result, interpersonal communication among family

members, relatives, neighbours and friends were found having more validity.

Thus, a lot of challenges for imagination and creativity in rural librarianship were implicated. In this regard, importance of analysing and understanding the basic problems and nature of the rural population and their information needs was emphasized to facilitate an even information flow and access in the rural areas.

**Baron and Curran's** (1980) project on 'Community Information Needs/Library Services (CIN/LS)' was an attempt towards identifying the problems related to the public library's role in providing information to the rural citizens. Though the project did not come out with any definite solution to the problem of how public libraries can cater to the information needs of the rural people in America, a CIN/LS Guide was proposed for providing a source of direction for the information professionals in achieving a match between the community needs and the information services. The Guide was put to test on the libraries across

nine south-eastern states of America and some national government agencies involved in rural development.

The project endorsed several suggestions as follows:

- (i) It was suggested that information professionals and those involved in decision making should try to understand the specific nature of the problems faced by the rural people including socio-economic and political aspects.
- (ii) To do away with the myths of ruralness, particularly the concept that rural agricultural extension services can provide all the survival information that rural dwellers need.
- (iii) Understand the rural crisis.
- (iv) Penalties of geographical isolation be considered.
- (v) Information professionals have been emphatically urged to find ways and means to bring about a befitting match between the community needs and the information services.
- (vi) There should be cooperation among the various information agencies to provide coordinated information services to the rural community.

(vii) It was also suggested to publicise the available information services to enhance the information access by the rural people, create public awareness and support for the library, and determination on the part of the funding authorities to support the library to the degree it requires.

**DeJohn** (1980), in his study, stressed on the need for the rural library planners to have intimate knowledge of community issues, know community planners and decision makers to be able to provide appropriate information to the rural people. He also emphasized that rural library planners must get tuned with the technological advancements in information communication, in order to adapt to changes taking place.

A significant project undertaken by **Aboyade** (1984) at Badeku village in Ibadan of the Oyo state of Nigeria, as part of a larger study on Rural Development Information System (RUDIS) Research, was an attempt to assess the provision of information services to the rural people, the majority of whom were illiterates largely neglected by the libraries and other information agencies. The realization that all members of a

society have identifiable information needs and the idea of development embracing involvement and participation of every member of a society, which has made it imperative for literates and non-literates to have access to information was duly considered in carrying out this project. Personally administered questionnaires and participant observation methods were applied for data collection. Some of the relevant findings were that:

- (i) Apart from the information for the functional purposes such as improve farming, health, increase knowledge of the wider society, etc., villagers were also found equally interested even in information on not-so functional aspects. As for instance, the villagers were found keenly interested in sparing their free times by having somebody read to them.
- (ii) The project brought to light that the rural people were able to express their information needs--- the villagers can actually go and seek the information they need, rather than wait for someone to offer it.
- (iii) It was also concluded that people could utilize the information of their own seeking much better.

The project suggested the establishment of a rural library in every village, as the focal and coordinating point of all information transfer in the rural areas. This would encourage the rural people to go and seek for information as and when they need and if they found the information satisfactory, they would be motivated in practicing self-help.

Green (1986) pointed out that information deprivation in the rural areas was a major factor in all cases of social deprivation. The author argued that everyone must have access to relevant, accurate and current information if one is to solve or alleviate one's difficulty satisfactorily and, thereby, exercise one's rights and duties as an enlightened citizen. This fact cannot be ignored even in the rural areas. The author was also of the view that too often rural issues and problems were seen through urban eyes and the solutions suggested and implemented were often those appropriate only to urban situations. While giving a description on the existing information services in Leicestershire, an attempt was made to outline a strategy for implementation of information services in the rural areas of Leicestershire, with special reference to south-western part of the state.

Green also argued that rural information provision did not lack in direction, but required coordination among the information agencies at all levels. In this regard, he appreciated the coordinated efforts of the libraries, Rural Community Councils and Citizens' Advice Bureaux, at the local level in improving the quality of rural life. Therefore, what was required was to harness a common base information network starting from the grassroots level as facilitated by local initiative to the centrally controlled and funded strategy--- a formal and proper link in the information system between the rural dwellers and the policy-makers at all levels. This will enhance the effectiveness of information flow and access in the rural areas. In this regard, the involvement of the media was also duly stressed.

**Durrani (1987)** undertook a study on the failure of agricultural information services in the third world with particular reference to Kenya, in providing relevant information in support of food production. He argued that it was not accidental nor the fault of the individual information workers, rather the failure to provide appropriate information service was due to the faults in the whole information system. Kenya, as

any other third world country, has a large peasant population based in the rural areas, who had been the most deprived group from accessing to agricultural information. Therefore, to improve the agricultural system, the rural peasants, who practically involved in the labour of cultivation, should be provided with relevant agricultural information.

In this context, Durrani argued that rural libraries and other information agencies had failed in their agricultural information services, as they remained mere prototypes of the agencies in the urban settings, ignoring the specific problems and information needs of the rural people. Their main role had been that of information transmission rather than information communication--- a two way exchange of information. Although, the advanced technologies from outside were not necessarily bad, very often they were found unsuitable for local conditions. It was, therefore, important to rationally examine such technologies in the light of the local situations and needs, local existing technologies and alternatives available. He also pointed out that peasant-based developed technologies were far better in many aspects as they had been developed under local

conditions--- in it, the people had the control over the technologies, not for profit but to improve the production.

Therefore, it was suggested that by taking the local conditions into consideration, the national information system devise a well thought out information organ through which appropriate agricultural information could be disseminated and make it accessible to the rural populace.

In another study, **Chijioke (1989)** argued that the public libraries in Nigeria had failed to meet the needs of the majority of the population. Public libraries in Nigeria were condemned as elitist institutions, serving only the most educated elements of the population living in major cities, while neglecting the vast majority of the country's population living in the rural areas. Even in the urban areas, distribution of the services of the public libraries was uneven --- most of the illiterates, semi-literates and those from lower social grades were neglected. While the city dwellers enjoyed the advantage of physical proximity to information services, they suffered the disadvantages of the social atomisation of the cities. The problem with the rural people was that of distance, lack of infrastructure,

non-technological environment and so on. She emphasized, in this regard, that drastic changes had to be introduced in the public library systems and services to ensure proper information flow and access in the rural areas.

The suggestions proposed by her included:

- (i) Setting up of community information centres to provide integrated community-based information services at the local level.
- (ii) The central public library should serve as the link between the local community information centres and the outside world. The role of the central library should include identification and provision of materials for the community information services not available in the locality, provide reference service both for the community information centres and for other government agencies, and extend infrastructural support including finance, communications facilities, maintenance services for equipment, staffing and training, etc., to the community information centres.
- (iii) There should be a national policy formulated for coordinated information network throughout the country.

(iv) Need for changes in the existing library school curriculum were also emphasized to tune the community information workers with the required skills and knowledge on community development programmes.

**Longo (1990)**, in her study, maintained that adoption of innovative farming practices was dependent on the prior existence of certain factors and conditions--- apart from the characteristics of the individuals or different ways of information transmission, socio-economic, psychological and cultural factors influence farmers' attitudes and behaviour towards change. It was also not only the decision-making process that was important, but adoption of innovations also depended on the type of innovations, their characteristics and complexities--- whether the innovations were practically relevant to the local conditions or not. Keeping in view of the above arguments, she carried out a survey to assess the ways in which information transmission affect the adoption of crop and animal breeding innovations in the rural areas of the Federal District in Brazil. The author conducted interviews with 384 farmers within the proposed area of study. In this context, she considered two

communication channels--- mass media that includes radio, television, printed materials, etc. and interpersonal communication channels such as extension workers, credit agents, cooperatives, friends, neighbours, community leaders and so on, through which information is transmitted to the farmers.

She divided the farmers into three categories, viz. crop farmers, animal breeders and farmers engaged in both the activities. Relating to the first and the third category of farmers, her findings revealed that mass media played a significant role in explaining adoption of crop innovations, while interpersonal communication network have been found more effective in the farmers' adoption to innovative farm practices, particularly in the crop farmers' first contact with innovations. However, there was no significant difference found in the two means of communication on the animal breeders' adoption of innovations, except that of printed media through which the first contact with innovations was indicated. Even in the third category, there was no effect on the farmers' adoption to innovations in animal husbandry. In all the above cases, the extension services were found ineffective in diffusing farm innovations.

Therefore, she had suggested for improvement in the extension services in its range of action in order to reach the farmers with the farm innovations more effectively. In this regard, it was also suggested that policies towards information generated by agricultural and extension services should take into consideration and strengthen the use of appropriate channels in transferring information to the rural farmers--- a prerequisite to effectively adoption of innovations by the farmers.

**Alemna (1992)** argued that a large number of Africans living in the rural areas were considerably influenced by and dependent on the oral tradition--- a method in which historical information is transmitted orally by processes peculiar to each community. Thus, a lot of information was obtainable through this form of communication. It was noted that oral tradition of communication had its profound place as an integral part of the African's heritage. However, the author had reiterated that the librarians in Africa had neglected this kind of information sources. Though a few agencies existing in some countries were assigned to preserve and develop the oral tradition of communication, nothing much had been done to where the oral tradition was collected, organized and

disseminated. To ensure the smooth information flow and access through oral communication as an integral part of the whole information system--- which would be accessible not only to the rural communities but also to the researchers and others, the author proposed the following measures:

- (i) To identify an institution, agency or a group that has an interest in and the capability to organize the oral source material. In this regard, it was suggested that the academic libraries, particularly the university libraries to take the lead, as they were better equipped in terms of resources such as finance, manpower, equipments, and expertise among others.
- (ii) To organise training programs, both in theoretical and practical aspects, for people who will do the field interviews and recording on behalf of the libraries. This was to acquaint them with the functioning of the library and make them understand the structure, culture and thought systems of the community from which the oral tradition originated.
- (iii) The methods of collection, organisation and dissemination of oral traditions should form an integral part of the courses in library schools of Africa as it was done in the University of Ibadan in

Nigeria. In this respect, each African country should have a law enjoining the researchers, Masters and Ph. D students to deposit copies with translations of their field tape recordings in an academic library.

**Mazie and Ghelfi** (1995) emphasized that rural people need to have access to appropriate information on various socio-economic issues that is affecting the rural America. They also reiterated that information was an integral ingredient for successful socio-economic development and to achieve global competitiveness. However, the lack of appropriate information, they reiterated, through appropriate media remains a major problem in rural areas. In this regard, it was suggested that rural libraries which existed in nearly all the rural counties should equip themselves with the relevant resources to be able to provide access to appropriate information to the rural population, including access to information through Internet and other electronic media.

**Otiike** (1996) made an attempt to assess the legal information provision in the rural areas of the English speaking states of Africa. It was

pointed out that little had been done by the states to disseminate legal information to the rural public unlike those on agriculture, health, environment and adult literacy. Policy makers have failed to realize that just as agricultural information enables people to improve their farm yields, legal information was equally necessary to enable people to live within the precincts of the law. Experience reveals that in instances where the general public is ignorant of the law, there is a tendency for the law enforcement personnel to take advantage of the situations to exploit the public. Such abuse, however, do not usually occur in the developed states as public there are enlightened. In this context, the author had given certain reasons why the rural public needs to have access to legal information, particularly in the third world countries where access to information is more of a privilege than a right, as follows:

- (i) To keep abreast of the current developments in the law.
- (ii) The rural folks require legal information to be legally literate so that they know what the law has to say on various issues that touch their lives.

- (iii) The rural public also require legal information to remain law-abiding citizens, for law and order in a society is essential for any socio-economic progress.
- (iv) Legal information is necessary for the rural populace to enable them to understand and appreciate their rights and duties before the law.

The author, therefore, proposed the following:

- (i) The rural public should have access to the nation's collection of legal statutes to become legally literates.
- (ii) There are a number of agencies, which can assist in the provision of legal information in support of legal awareness, however, it was suggested that the public library could play the leading role in this direction.
- (iii) The public library should liaise with various legal and government agencies and find out how best legal information could be provided to the rural populace. Apart from the state governments, the International Commission for Jurists and the International Federation of Women Lawyers are some of the organisations,

which the public library can seek assistance for providing legal information to the rural public.

Agriculture and rural development were among the issues that the Federal Government of Nigeria had kept on the top priority. Consequently, three Agricultural Universities have been established. In this regard, **Ozoma** (1997) made an attempt to find out the relevance of the agricultural universities in disseminating pertinent information and relevant expertise to Nigerian small-scale farmers, with particular reference to the University of Agriculture, Makurdi. It was noted that in spite of many students got graduated in agriculture, with certain level of intellectual development to be able to handle various real life situations, majority among them usually go for jobs in the public sectors rather than opting for agricultural extension and work among the rural farmers. As a result, the author reiterated that not much have been able to do to increase the agricultural productivity and to improve the quality of life for the rural farmers. One of the major concerns in this respect was lack of proper agricultural information flow resulting to deprivation of the rural farmers from accessing to the appropriate farming information.

The suggestions of the author were:

- (i) Due emphasis should be given on training and retraining the agricultural workers on appropriate technologies and farm practices suitable for small-scale farmers.
- (ii) To expose the students to the real life situations, demonstration farms must be located within the university complex or at least located close to the university. This will acquaint the students with the needs and importance of the field-based activities. Also there should be more experimental pilot projects established in the respective local agro-ecological zones to serve as model farms to farmers and provide researchers with practical farming problems for solutions.
- (iii) Students must be encouraged to undertake projects that can produce results relevant to the small-scale rural farmers. More women should be also trained for agricultural extension work, to reach out to the rural women farmers and to make them (rural women) actively involve in the community development and in improving their quality of life.

- (iv) To make the above programs effectively put into practice, there should be a proper organ set up in the Agricultural Universities, through which agricultural information is disseminated and made it accessible to the rural farmers.

A survey on rural citizens' information needs of the North Mainland of Shetland, conducted by **Beer et al (1998)**, was an attempt to analyse the operation of the Shetland Islands Citizens Advice Bureau in Lerwick and the use made of it by the clients, and to find out the information and advice requirements of the rural population. In this regard, interviews were held with 50 leaders within the rural community who were likely to be consulted by those needing information and advice. This included, social workers, teachers, doctors, nurses, shopkeepers, youth and community workers, among others. The findings of the survey included the following:

- (i) The community leaders were major sources for information and advice in the rural areas.
- (ii) People usually preferred contact with these leaders at the workplace.

- (iii) Local geography, mobility of the enquirer, personality of the community leader and their effectiveness as information providers in terms of accessibility and availability, etc., were some of the factors considered in choosing whom to approach for information and advice.
- (iv) Welfare benefits, signposting, housing, education, legal, health and employment, etc., were the issues most frequently raised in the rural areas.
- (v) Using a telephone or writing a letter for the first consultation was found to be the most preferred way, followed by face-to-face communication.
- (vi) Desire for having a multi-purpose advice centre located within the community was also indicated.

The team also proposed the following suggestions:

- (i) The community leaders should make full use of the Citizen's advice Bureau in order to enhance their effectiveness and efficiency in providing information and advice to the rural public.

- (ii) To enhance its utility and interaction with the rural public, it was suggested that more publicity on the services of Shetland Islands Citizens Advice Bureau should be made, while making them more easily accessible for people in the rural areas.

**Leach (1999)** conducted a study to assess the provision of information to adults in rural KwaZulu-Natal of South Africa by the non-governmental organisations (NGOs). The author reiterated that little information was available in the published literature on how information should be provided to the adults in the rural areas in a developmental context. To gain some understanding, in this respect, a descriptive survey and interviews were conducted with twenty-two representatives of NGOs working in rural areas of KwaZulu-Natal, the most populous province in South Africa with the largest number of people living in the rural areas. The study concluded that:

- (i) The NGOs provide information to the rural adults covering a wide range of subjects--- on health, land, housing, water, agriculture, law including issues on human rights, education, environment and employment.

- (ii) The rural areas were under-resourced in terms of electrification, water supply, and sanitation with a low rate in literacy and employment, the least access (per capita) to developmental resources including information.
- (iii) The NGOs predominantly used oral or verbal means to provide information. Though printed formats, audio-visual and other means of communication were also used, they were supplementary to oral method or were supplemented by oral communication. Though it was time consuming and a strenuous process, one-to-one interaction as a way of providing information was found to be very effective. For instance, when some of the NGOs used farmers to talk to other farmers on one-to-one basis, the information had greater impact as the participants believed in the information and could grasp the message rather quickly. In this regard, it was maintained that building up a relationship of trust was very essential for an effective communication process.
- (iv) Indigenous information, or what the people already knew, was to be taken into consideration as integral to the provision of information. Usually, it had to be a two-way interactive process,

rather than one-way process of information transmission, as some information becomes useful even to the NGOs themselves.

Though, this study was not directly targeted at the rural libraries, certain suggestions were given in relation to rural libraries and their role to effectively disseminate relevant information to the rural public in general and the adults in particular:

- (i) It was suggested that rural libraries should change their traditional role of providing information services through books, usually the left over taken from the urban public libraries. The rural libraries should redefine their role by providing information services covering a wide range of topics catering to the socio-economic, cultural and political needs of the community.
- (ii) It was also suggested that rural libraries must adopt two-way communication process rather than remain only providers of one-way information transmission. Rural librarians should interact more with the community they serve, in order to build up a cordial relationship and cultivate people's participation.

**Uddin (2000)** argued that the rural development and policy makers in Bangladesh had so far left rural libraries out in their plans and programmes. For an all round national development, due emphasis needs to be given on rural development--- which depends not only on the generation of new scientific and technological innovations, but timely delivery of those information through appropriate media and form to the intended users.

In this regard, the author, while stressing on the crucial role of rural libraries in disseminating appropriate information to the rural people, the following suggestions had been proposed:

- (i) A rural library network should be established throughout the country with the branches in all the villages within a five years time. A national policy to this effect should be formulated to facilitate the smooth flow of information and active participation of the people and non-governmental organisations.
- (ii) NGOs, in cooperation with the government, should involve in establishing and maintaining rural libraries and information resource centres.

- (iii) The course curriculum in library and information science institutions need to redesign by incorporating pertinent aspects on rural development reflecting the actual needs and requirements of the vast majority of people living in rural areas. This will redefine the role and responsibilities of the information professionals in serving the rural populace better.
- (iv) Rural libraries should work in coordination with other development agencies to be able to provide concerted information services to the rural people.

## **2.2 Studies carried out in India:**

**Inamdar (1978)** argued that notwithstanding the efforts made through various community development programmes, the villages in the rural areas, by and large have remained backward and the rural people have been deprived from the benefits of modern socio-economic progresses. He pointed out that one of the major obstacles, in this regard, was the absence of a proper communication channel through which appropriate information flow in the rural areas could be facilitated.

The author had suggested for establishing a concerted and consistent communication channel under a central information system among libraries of all organisations. This was to smoothen the information flow and its accessibility up to the grassroots level to ensure the maximum utilization of the available resources--- an indispensable factor in bringing about all round national development.

In another study, **Raju** (1985) reiterated that the problem of rural development involves a wide range of fields--- ranging from agriculture, education, animal husbandry, forestry and rural industries, to banking services and cooperative activities, among others, which the world over has been gaining the attention of scientists, researchers, academicians, policy-makers, politicians and others. However, in this regard, he argued that there was no proper information service available in India catering to the information needs of those involved in rural development.

Therefore, he proposed an Indian Rural Development Information System (IRDIS) through which all the relevant information relating to rural development could be collected, organized, consolidated and

disseminated to the end users, and thereby, enhance the utilization of available resources more effectively to improve the quality of rural life.

**Musib** (1989) carried out a survey to assess the information needs of rural agriculturists in Burdwan district of West Bengal. He reiterated that agriculture played a very vital role in the economic development of the nation. In this regard, he also reiterated that increase in agricultural production depended greatly on the availability of appropriate and latest information-- on cultivation, marketing, preservation, farming technologies, and financial sources. An attempt was, therefore, made to identify the nature and the sources of information on the above areas. Apart from these, he also tried to identify information sources for solving day-to-day problems relating to health, childcare, education, employment and politics among others. In this connection, all together 258 agriculturists from 42 villages having a library were selected. The data was collected using questionnaire-cum-interview method.

The result of the survey revealed that personal experience, family members, fellow professionals, friends, neighbours, relatives and persons

in agricultural offices were the main sources of agricultural information. For day-to-day problems, the rural agriculturists depended on school teachers, doctors, friends, relatives and personal experience. It was also found that rural agriculturists have expressed their willingness to use the library for fulfilling their information needs.

**Gogoi (1990)** maintained that interpersonal relationships among members of a social system had a special significance to researchers in rural communication, as it had a profound place of a very important channel of farm information flow.

In another study, **Sharma and Khan (1997)** argued that understanding the existing communication behaviour was essential before dissemination of new ideas and technologies to the farmers. In this context, they carried out a survey in Chherikheri and Dharampura villages of Dharsivan block of Raipur district in Madhya Pradesh. An attempt was made to identify the information sources utilized by the farmers and to find the constraints responsible for the non-utilization of various

communication sources by them. For the purpose of data collection, 45 farmers each from the villages have been interviewed.

In all, the information sources were grouped under the following broad categories:

- (a) Mass media, which includes, radio, television, newspapers, magazines, other printed materials and films.
- (b) Personal cosmopolite that includes rural Agricultural Extension Officer, Agricultural Development Officer, Agricultural Scientist and Co-operatives.
- (c) Personal localite that includes friends, neighbours, progressive farmers, relatives and NGOs.

The study found that radio and television were the most used mass media, whereas, the Agricultural Extension Officers were the only institutional sources of information who had close contacts with the farmers. Neighbours and friends were the most important information sources while the NGOs were found to have very little interaction with the farmers.

In view of the above findings, the authors proposed that:

- (i) There should be more relevant programmes developed and included in the radio broadcastings and transmission of television programmes, to cater to the farm and other socio-economic information needs of the rural farmers.
- (ii) To enable the Agricultural Extension Officers to effectively establish contacts and interactions with the farmers, the number of farm families allotted to them should be downsized.
- (iii) Agricultural Scientists and senior extension staff should increase their frequency of their visits and contacts with the farmers.
- (iv) The NGOs should increase their social contacts and interactions with the farmers particularly in creating awareness on the need for change.
- (v) Appropriate information on credit facilities should also be provided to the farmers.

In a similar study, Choudhary et al (1998) made an attempt to assess the effectiveness of the various information sources used by the farmers on adoption of farm innovations in Chittorgarh district of

Rajasthan. In all, 100 farmers engaged in gram cultivation from three villages within the Arnod tehsil were selected and structured interview method was used for collecting the data. It was found that the tribal farmers used more of the personal locale (neighbours, friends, relatives etc.) and personal cosmopolite (Extension workers, demonstrations, farmers fairs, group meetings and discussions etc.), whereas, the non-tribal farmers used more impersonal cosmopolite (Mass media). However, both the tribals as well as the non-tribals equally have utilized the commercial and other private agencies as information sources.

The authors endorsed the following suggestions:

- (i) The impersonal cosmopolite (mass media) sources of information should be strengthened by including more local-oriented programmes, and put to serve and educate the rural farmers on various aspects of gram production technology.
- (ii) To strengthen the extension services, intensive efforts on the part of the extension workers to educate the farmers have been suggested.

(iii) It was also suggested that there should be coordination among the various information sources to provide concerted information services to the farmers.

**Aslam (1998)** argued that one of the basic problems of rural development in India had been the lack of effective communication strategy with appropriate media-mix to educate the masses as well as to transfer and transmit relevant innovations. At the same time, lack of infrastructure, lack of power supply, non-availability of audio-video equipments were some of the major constraints faced by the rural areas vis-à-vis technological advancements. Therefore, he suggested that rural libraries should convert themselves into community information centres. It was further suggested that collection of a community information centre should be of media-mix--- print media, charts, graphics, posters, non-print and electronic media, to enhance their effective utilization by the rural people.

**Pati and Kumar (1998)** undertook a study on the impact of mass communication in rural change. The study was carried out in four villages

of Rania block under the Ranchi district of Bihar. They reiterated that information communication was very important for everyone in a modern society. They also maintained that no communication can fully exist in a cultural vacuity--- cultural norms, values and attitudes of the people are to be considered in planning communication strategies. They used structured-interview method for data collection, with which they interviewed 100 persons taken from four villages.

The study came up with certain findings as follows:

- (i) It was found that the villages have been deprived from having access to the modern mass media and as such, there was a very little impact of mass media on rural life. Folk institutions and practices like weekly or bi-weekly markets, festivals and folklores as the means of rural communication since centuries have been found effectively used till date.
- (ii) It was also found that there was a noticeable relationship between backwardness and deprivation of communication resources. As for instance, there was no subscription to newspapers mainly due

to the prevalent illiteracy of the people; television viewers were very limited as there was no electricity within the block, etc.

- (iii) Radio, being the cheapest and most conveniently accessible for the rural people, was found to be the main source of information among the modern electronic media.

In view of the above findings, some of the suggestions of the authors included:

- (i) To bridge the gap that exist between the new technology and the farmers and effective dissemination of appropriate socio-economic and cultural information to the rural dwellers, a fusion of technology-based mass media and traditional modes of communication was suggested. This will lead to greater impact of modern mass media on rural change and development.
- (ii) Decentralization and democratisation of the radio broadcastings and other mass media both in content and methodology was suggested to be more effective and people-oriented, to facilitate dissemination of latest and relevant information to the rural people, to educate them with new ideas, to entertain them with

constructive programmes and to make them aware of the benefits of modern socio-economic progresses.

(iii) It was also suggested for the involvement of the institutions such as mahila samities, mahila mandals and women associations, functioning at the grassroots level in the whole communication process to yield better response and participation of the rural public.

The National Workshop on Rural Libraries and Information Centres under Panchayati Raj (1998), organized by the National Institute of Rural Development, Hyderabad was held on September 9-11, 1998. Stressing on the need and importance of the proper information flow and access in the rural areas and having analyzed the crucial role of the rural libraries in effective dissemination of appropriate information to the rural populace--- an indispensable factor in all round national development, the workshop had concluded with certain recommendations.

Some of the relevant recommendations, in this regard, were as follows:

- (i) The workshop recommended a plan to augment the existing information collection and dissemination mechanisms of the rural libraries, reading rooms or resource centres. In this context, government and non-governmental agencies have been emphatically urged to take initiative towards enacting library legislation in their respective states and the library cess collected under the legislation should be released on time to the local library authorities for the development of the libraries.
- (ii) In view of the Gazette notification of the Action Plan of National Task Force on Information Technology, Government of India, where an IT revolution by the turn of 2002 has been targeted, it was recommended to start immediately computerized community information centres at an appropriate level of rural administration, preferably at the Mandal level to begin with. In this regard, and in view of the recommendation of the IT Task Force to allocate 3% of the development budget to IT related activities, a general directive may to this effect be issued by the Planning Commission and specific directives issued by the respective Ministries at the Centre and State level to allocate separate budget head for

maintenance and the smooth functioning of these information centres, for the benefit of the elected representatives and the rural public.

- (iii) To make the information centres serve the rural public more effectively, it was also recommended that the personnel to man the information centres should be identified locally, who understands the local environment better, and should be trained in handling the new communication facilities by organisations such as NIC and National Institute for Rural Development (NIRD). A working manual should be prepared by NIC or NIRD for the day-to-day functioning of these information centres and be made available in regional languages for its effective use at the Mandal level.

In another study, Sarma (1999) reiterated that making the agriculture sustainable, the increasing use of modern scientific and technological innovations and their adoption by the farmers up to the grassroots level had become necessary. In this regard, he attempted to find out the relationship between social structure and level of adoption of

agricultural innovations in the Chhatisgarh and the Chhindwara-Betul regions.

It was found that adoption of the agricultural innovations, however, depends on certain socio-economic factors and not only on the spatial factors. Social conditions greatly influence the perception of the farmers as manifested in their decision-making process. As for instance, people belonging to schedule tribes and schedule castes communities were found to have hardly perceived the necessity of adoption to new agricultural practices. In this regard, the author noted that lack of proper information flow was one major barrier, as adoption of innovation was a process of learning.

It was suggested that, while taking into consideration the socio-economic variables of the community, the process of diffusion of innovations should include reaching the people up to the grassroots level in the region and other similar rural areas, with appropriate information, not only to make them aware, but also to educate them on the utility and necessity of adoption to innovations.

In another pertinent study, Misra (1999) maintained that block centres, village-level workers, neighbours, radio programmes, newspapers and public agents were among the important media through which the farmers in the rural areas come to know about the use of new agricultural technology. In this regard, he pointed out that village level workers were found most effective in reaching the villagers with appropriate information relating to agricultural innovations, as per the result of his study carried out under Atara Tehsil of the Banda district in U.P. to assess the effectiveness of the service centres approach in adoption of farm innovations.

He suggested for the establishment of training centres for village-level workers and volunteers with task-based syllabi in the service centres. This should also take the local conditions into consideration to make the village level workers more effectively work among the rural farmers. It was also suggested for the strengthening of the local-based institutions such as village panchayats by giving them required incentives-honorarium, travelling and daily allowances, etc., to enable them establish

close interaction with the farmers and effectively disseminate appropriate information on agricultural innovations to the rural farmers.

**Das (1999)** summed up rural libraries as the nerve centres in rural areas--- they play a very vital role in education, cultural emancipation, and the overall development of the rural people. While applauding the role of rural libraries in Kerala, specially in accelerating the state's literacy processes, he, however, argued that, with the advancements in information and communication technologies, rural libraries should function as community information centres--- a shift from the old concept of books to information, catering to the varied information needs of the community being served.

Similarly, rural people were interested in improving farming methods, raise their economic status and enlarge their social and cultural life, reiterated **Kaula (1999)**. They were also interested in community problems and in the larger affairs of the nation. Therefore, for effective information dissemination accessible to the rural people along the line, cooperative extension service should be introduced in the rural areas. In

this regard, he stressed that rural librarians, in coordination with other agencies should direct their efforts towards providing at concerted information services to the defined rural communities.

**Tikekar (2000)** argued that the development processes can come out with concrete results only when there is smooth information flow that is accessible to the intended users. In this context, the author stressed on the crucial role of the rural libraries in facilitating effective dissemination of appropriate information to bring about qualitative change and improvement in the life of the vast majority of India's population living in the rural areas.

Therefore, while pointing out on the failure of the existing public library system in reaching the rural populace with appropriate information, he put up a proposal for a rural information network in which:

- (i) Rural libraries as community information centres must be considered as distinct entities, deserving special attention, and not simply link to the public library system.

- (ii) A rural community information centre would function catering to the various information needs of the community of a defined jurisdiction.
- (iii) The community information centres would work in coordination with other information agencies in order to provide concerted information services to the rural populace.
- (iv) Active involvement of the government and the non-governmental organisations in establishing and maintaining the rural community information centres were emphasised.

In their study, **Ramaiah and Ramchander (2000)** emphasised on the need for setting up Internet kiosks in Indian villages for bridging the gaps in access to information. They were of the view that the digital revolution had made information flow and access easier cutting across geographical, social and cultural barriers. Citing the example of Andhra Pradesh in championing the cause for electronic governance and the use of information technology for interactive governance through Andhra Pradesh State Wide Area Network (APSWAN), the authors made a

proposal for setting up Internet Kiosks in every Indian village. They sustained their stand with the following arguments:

- (i) There being more than 5 lakh Indian villages without a library and information centre, it would not be possible for the state or central governments to establish libraries in all the villages for want of huge funds. Moreover, public libraries, they reiterated, were getting obsolete mainly due to shortage of fund and the decline in collection and service standards.
- (ii) The villagers should not be made to remain second-class citizens due to lack of access to appropriate information. In this context, the panchayat institutions at the grassroots level could take the initiative in establishing village-level Internet kiosks, under the provision given in the 73<sup>rd</sup> Amendment to the Indian Constitution.
- (iii) The use of Internet would help rural dwellers access appropriate information and thereby make them conscious about the importance of science and technology in the socio-economic progress.

Thus, smooth and adequate information flow and access could be rendered to the rural people through the Internet Kiosks in the villages. This, in turn, would accelerate the process of improving the living conditions of the vast rural populace and in bringing them to the main stream.

In a similar line, **Sarada** (2000) emphasized on the need for providing community information services (CIS) by the public libraries up to the grassroots level. In support of this, the author put up the following arguments that:

- (i) In response to the changing role of information profession, provision of community information services came into effect as an attempt at providing appropriate information to the poor, deprived, illiterate and the minority groups--- a war on poverty.
- (ii) The scope of CIS included assisting the individuals and groups with relevant information for solving the problems in their day-to-day life--- a democratic right.
- (iii) The emergence of information as a key resource in all fields of human endeavour and advancements in information and

communication technologies spanning geographical boundaries and time periods, had made it possible and necessary even for rural villagers to have access to appropriate and timely information.

Sustaining the above arguments, the author suggested that every village in India should be provided with personal computers, a good room with functional furniture, power and telephone connections, to facilitate the smooth flow of information which would be easily accessible to the rural population.

The emerging Information and Communication Technologies (ICTs) have a significant role to play in evolving a paradigm to take advantage of knowledge availability to achieve the triple goal of increased income, jobs and food, reiterated **Balaji et al (2000)**. In this connection, they carried out a detailed survey among the poorer households covering 10 percent of the resident families in the proposed area during April to June 1998 to get a clear picture of the existing communication habits and channels in the rural areas of Pondicherry.

The result of the survey indicated that the predominant sources of information were the petty local shopkeepers, the market place and the agri-input suppliers. It was also found that the channels of development information available through the Agricultural Officers and Block Development Officers were not very effective, as information through these channels did not correspond much to the material benefits of the rural people. The reach of electronic media, however, especially television was found very high considering the prevalence of poverty in the villages surveyed.

In this connection, they also made an attempt to assess the effectiveness of the experimental project called 'village knowledge centres,' which had been set up in Kizhur, Embalam and Veerampattinam with Villianur as the operational centre--- a programme launched in 1998 to determine the way in which ICTs make an impact on rural livelihood in Pondicherry. The key element of the project was to create content suitable to the local needs by holding extensive consultations with the participating village communities.

Analysis of the user's registers as maintained in the village knowledge centres revealed that maximum number of people using the services were those of asset less families and the use by illiterates and dalits were low.

The most sought information was on government welfare schemes followed by education, agriculture, fisheries, health and employment among others. It was also found that women in rural families were also interested in obtaining health related information, particularly concerning the disorder in the reproductive tract and child health. In Veerampattinam, a Christian village, information required included safety of fishermen at sea, fish occurrence, post-harvesting techniques and wave height.

Finally, they came up with the conclusion that a rural information network can only be meaningful when there is a considerable local content. Therefore they suggested that:

- (i) The volunteers of village information centre should be trained not only in the use of computers and networks, but also needed to be trained in smoothening the flow of information to those

information seekers. For instance, having a basic knowledge on the local language and understanding the socio-economic factors that affects and shapes the life of the community were found very essential for providing effective information services to the rural people.

- (ii) Social and gender barriers need to be downsized through proper education and awareness programmes that equal access to appropriate information, irrespective of caste, sex, economic status, etc., can greatly contribute towards the all round development in the life of the rural society.

### **2.3 Conclusion:**

In the light of the related literature reviewed above, several conclusions emerge which reflect the state of affairs in so far as information flow and access in rural areas is concerned. They have been summed up as below:

- (i) Information is a key resource in all the development processes equally essential both in the urban as well as the rural settings.

- (ii) There is a general consensus that the benefit derived from the adequate information flow and access transcends all geographical and cultural boundaries.
- (iii) There exist wide gaps in the information flow and access between the urban and rural areas, which today has become a major area of concern for the information professionals, policy makers, researchers, administrators and others.
- (iv) Though the extent and intensity of the information needs and seeking behaviour varies from person to person, in any given socio-economic and political environment, it is generally accepted that the need for information relating to all aspects of life is felt more acutely by the rural dwellers.
- (v) Considering the multi-dimensional nature and role of information, institutions and professionals, involved in information services are faced with increasingly demanding roles in providing appropriate and concerted information services to the rural populace.
- (vi) A complete understanding of the community in terms of their physical environments, socio-economic and political

circumstances, their beliefs, traditions, values, life-styles, habits and their psychological outlook has been considered as a very crucial factor in providing effective and efficient information services to the rural public.

- (vii) The indigenous knowledge base and its applications have to be taken into consideration in attempting to provide effective information services to the rural folks.
- (viii) Knowledge of the existing information sources, channels and services in the rural setting has been found very vital for the success of any attempt to provide effective information services.

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## **CHAPTER - III**

### **METHODOLOGY**

### **3.0 Introduction**

The methodology adopted for the study include the following considerations:

#### **3.1 Objectives:**

The objectives of the study were:

- (i) To identify the sources and channels of information flow and access in the villages.
- (ii) To undertake a comparative analysis of the information flow and access patterns in Meghalaya and Nagaland.
- (iii) To propose suggestions and recommendations for effective information services in the rural areas.

#### **3.2 Hypotheses:**

The study was carried out with consideration to the following hypotheses:

- (i) The interpersonal communication among members of a social system serves as an important source and channel of information flow and access.

(ii) Use of information sources and channels vary across socio-economic variables.

(iii) Information flow and access vary across geographical variations.

### **3.3 Research sites and sampling**

Personal familiarity and accessibility of the research sites were considered essential in selecting the research areas. Accordingly, two North Eastern states of Meghalaya and Nagaland were selected. Further, one district from each state, located at a distance of not less than 150 kilometers from the state capital were selected. Following this, two villages from each district were selected with one village located within the radius of 5 kilometers and another located at a distance of not less than 60 kilometers from the district headquarters. The total number of households was also considered in selecting the villages. Only the villages having between 100 to 400 households were considered for the purpose of the present study. Finally, 20 percent of the total households from each selected village were taken as the sample population and the heads of the families or anyone from the family who can provide necessary information were chosen as the respondents. All together, 155 observations have been made taken from <sup>all</sup> the four selected villages.

### **3.4 Data collection**

A pilot survey was carried out using structured-interview and observation methods to assess the relevance of the study. Keeping in mind the objectives of the study and on the basis of the information gathered through the pilot survey, the final schedules were constructed and the data were collected personally. This was supplemented by personal observations and discussions with the villagers.

### **3.5 Data analysis**

Data were tabulated, analysed and consolidated using SPSS Ver. 7.5. Testing of hypotheses has been made using appropriate statistical tools such as Chi Square and t- Test.

### **3.6 Definition of the terms used**

*Sources and channels:* These two terms are used synonymously to indicate intermediaries of information flow and access.

*Interpersonal communication:* It refers to two-way interactive information communication. In this study, *teachers, educated persons,*

*relatives and friends, co-farmers and co-traders* who permanently stay in the village are considered as interpersonal (IP) sources and channels of information. Availability and accessibility are the two main attributes of these sources and channels considered in this grouping.

***Non-interpersonal communication:*** This refers to one-way information communication, in which information flows in a uni-directional manner and may not necessarily involve reciprocity. The following sources and channels have been identified and grouped as non-interpersonal (NIP) sources and channels. These include, *mass media, church, Non-governmental organisations, health workers, Agricultural extension officers, village level extension workers, Veterinary doctors, field assistants, banks and co-operatives.*

The above grouping of various information sources and channels is based on the findings of the pilot survey and personal observation.

## **CHAPTER - IV**

### **ANALYSIS AND INTERPRETATION**

## **4.0 Introduction**

The following analyses and interpretations have been incorporated to test the hypotheses considered for the study.

### **4.1 First hypothesis**

The extent of information flow and access and use of various information sources and channels depend greatly on the availability and accessibility of information sources and channels. For the purpose of this study, various information sources and channels have been grouped into two categories as interpersonal (IP) and non-interpersonal (NIP) sources and channels. The following analysis and interpretation seek to test the hypothesis that **'the interpersonal communication among members of a social system serves as an important source and channel of information flow and access.'**

In this analysis, the responses received against each channel in the five point scale were first tabulated and analysed by frequency of responses and, thereby, percentages obtained. A sample table is given as below:

**Sample table: Frequency and percentage of responses with regard to access to information through relatives and friends (IP) for education of family members**

<b>Extent of use</b>	<b>Frequency</b>	<b>Percent</b>
<b>Never</b>	<b>5</b>	<b>3.23</b>
<b>Rarely</b>	<b>16</b>	<b>10.32</b>
<b>Sometimes</b>	<b>112</b>	<b>72.26</b>
<b>Frequently</b>	<b>16</b>	<b>10.32</b>
<b>Always</b>	<b>6</b>	<b>3.87</b>
<b>Total</b>	<b>155</b>	<b>100.00</b>

The composite average scores against IP and NIP sources and channels of information as shown in the tables given below have been obtained by adding up the total scores of all the three components of IP and NIP sources and channels for each purpose and further dividing by three. Again, for the purpose of determining the extent and volume of information flow and access, the five point scale has been grouped into three categories as **low=never** and **rarely**, **moderate=sometimes** and, **high=frequently** and **always**. The frequency distribution of the respondents against the three groups has been shown by means of percentage.

#### 4.1.1 Educational purposes

Table 1 depicts the volume of information flow and access in the villages under study and the extent of use of various information sources and channels with regard to educational purposes.

**Table 1: Total percentages of information access obtained against IP and NIP sources and channels of information for educational purposes.**

Information flow and access	Extent of use	Education for family members (%)		Education for employment benefits (%)	
		IP	NIP	IP	NIP
L o w	Never	37.42	34.19	15.05	35.91
	Rarely	13.12	44.52	18.49	43.44
	<b>Total</b>	<b>50.54</b>	<b>78.71</b>	<b>33.54</b>	<b>79.35</b>
Moderate	Sometimes	39.35	21.29	49.25	20.65
H i g h	Frequently	8.17	0.0	10.97	0.0
	Always	1.94	0.0	6.24	0.0
	<b>Total</b>	<b>10.11</b>	<b>0.0</b>	<b>17.21</b>	<b>0.0</b>
<b>Grand total</b>		<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>

The percentages of 50.54 percent and 33.54 percent of the respondents respectively against IP sources and channels and 78.71 percent and 79.35 percent of the respondents respectively against NIP sources and channels of information falling in the low category indicate a low volume of information flow and access in the villages. It is

also observed that information flow and access through IP sources and channels of information far exceeds that of NIP sources and channels when it comes to moderate and high categories of information flow and access. This is evident from frequency distribution table that 39.35 percent and 49.25 percent respectively against IP sources and channels as compared to 21.29 percent and 20.65 percent respectively against NIP sources and channels falling under moderate category and 10.11 percent and 17.21 percent respectively against IP falling under high category in so far as educational purposes are concerned. This tendency indicates that the villagers under study have more access to information through IP sources and channels of information. It also reveals that the volume of information flow and access is very low particularly through NIP sources and channels, which speaks about the non-availability and inaccessibility of NIP sources and channels of information at the reach of the villagers. It is, therefore, observed that interpersonal communication among members of a social set-up play a very important role in information communication as far as educational purposes are concerned.

#### 4.1.2 Health care purposes

**Table 2: Total percentages of information access obtained against IP and NIP sources and channels with regard to health care purposes.**

Information flow and access	Extent of use	Health care for self		Health care for family members		Making use of health programs and services	
		IP	NIP	IP	NIP	IP	NIP
Low	Never	15.26	28.17	20.43	30.17	18.71	23.22
	Rarely	33.76	34.11	23.87	30.16	29.03	49.03
	Total	49.02	62.28	44.3	60.33	47.74	72.25
Moderate	Sometimes	39.79	33.33	35.70	30.09	44.73	26.67
High	Frequently	6.47	3.74	14.41	8.39	4.95	1.08
	Always	4.72	0.65	5.59	1.29	2.58	0.0
	Total	11.19	4.39	20.00	9.58	7.53	1.08
Grand total		100.00	100.00	100.00	100.00	100.00	100.00

As evident from the above table 2, the percentages of 62.28 percent, 60.33 percent and 72.25 percent of the respondents respectively obtained against NIP sources and channels falling under the low category of information flow and access indicate a low volume of information flow and access in the villages particularly through NIP sources and channels of information. It is also observed that the villagers have more access to health care related information through IP sources and channels than through NIP sources and channels of information as evident from the frequency distribution of 39.79 percent, 35.70 percent and 44.73 percent

respectively obtained against IP sources and channels under moderate category of information flow and access as compared with 33.33 percent, 30.09 percent and 26.67 percent obtained against NIP sources and channels.

It is also obvious from frequency distribution table that 11.19 percent, 20.00 percent and 7.53 percent against IP sources and channels falling under the high category as compared with 4.39 percent, 9.58 percent and 1.08 percent obtained against NIP sources and channels. This authenticates that NIP sources and channels have not been effective in reaching the villagers with relevant information in so far as various health care purposes are concerned. Further, it is observed that interpersonal communication among the villagers play a very important role in disseminating health care related information in the villages under study.

#### ***4.1.3 Agricultural purposes***

As shown on the Table 3, the average scores obtained against both IP and NIP sources and channels of information indicate a low volume of information flow and access in the villages pertaining to agricultural

purposes particularly that of farming activities and agricultural credit facilities.

**Table 3: Total percentages of information access obtained against IP and NIP sources and channels of information for various agricultural purposes**

Information flow and access	Extent of use	Agricultural extension services		Adoption of modern agricultural technology		Farming activities		Agricultural credit facilities	
		IP	NIP	IP	NIP	IP	NIP	IP	NIP
Low	Never	37.42	36.56	37.41	36.56	65.80	75.06	74.62	88.17
	Rarely	13.12	36.34	6.67	44.52	8.17	18.06	16.56	10.97
	Total	50.54	72.9	44.08	81.08	73.97	93.12	91.18	99.14
Moderate	Sometimes	32.90	27.10	37.42	18.92	20.86	6.88	6.88	0.86
High	Frequently	13.76	0.00	16.13	0.00	4.52	0.00	1.94	0.00
	Always	2.80	0.00	2.37	0.00	0.65	0.00	0.00	0.00
	Total	16.56	0.00	18.5	0.00	5.17	0.00	1.94	0.00
Grand total		100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

This is evident from the frequency distribution that 50.54 percent, 44.08 percent, 73.97 percent and 91.18 percent of the respondents respectively obtained against IP and 72.9 percent, 81.08 percent, 93.12 percent and 99.14 percent respectively against NIP sources and channels of information falling under the low category of information flow and access. It is, however, observed that the villagers under study have more

access to agricultural information through IP sources and channels than through NIP sources and channels of information. This is obvious from the percentages of 32.90 percent, 37.42 percent, 20.86 percent and 6.88 percent obtained against IP sources and channels falling under moderate category as compared with 27.10 percent, 18.92 percent, 6.88 percent and 0.86 percent respectively obtained against NIP sources and channels of information. This is also indicated from the percentages of 16.56 percent, 18.5 percent 5.17 percent and 1.94 percent respectively obtained against IP sources and channels constituting the high category as compared with 0.00 percent obtained against NIP sources and channels for various agricultural purposes. This reflects that information flow and access in the villages through NIP sources and channels are very ineffective as far as agricultural purpose are concerned. Hence, it is observed that interpersonal communication among the villagers has a prominent place in agriculture related information communication in the villages under study.

#### 4.1.4 Business purposes

**Table 4: Total percentages of information access obtained against IP and NIP channels of information for business purposes.**

Information flow and access	Extent of use	Business operation		Business credit facilities	
		IP	NIP	IP	NIP
Low	Never	78.70	81.07	82.59	85.38
	Rarely	1.94	13.55	9.46	14.62
	<b>Total</b>	<b>80.64</b>	<b>94.62</b>	<b>92.05</b>	<b>100.00</b>
Moderate	Sometimes	15.27	5.38	7.95	0.00
High	Frequently	4.09	0.00	0.00	0.00
	Always	0.00	0.00	0.00	0.00
	<b>Total</b>	<b>4.09</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>Grand total</b>		<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>

In so far as information flow and access with regard to business purposes are concerned, the percentages of 80.64 percent and 92.05 percent of the respondents respectively obtained against IP sources and channels with 94.62 percent and 100 percent respectively against NIP sources and channels falling under the low category indicates the existence of a very low volume of information flow and access in the villages under study.

It is also observed that the villagers have very less access to business related information both through IP and NIP sources and channels of information with only 15.27 percent and 7.95 percent of the respondents respectively obtained against IP sources and channels and 5.38 percent and 0.00 percent respectively against NIP sources and channels falling under the moderate category of information flow and access. This is also indicated from frequency distribution table that 4.09 percent only against IP sources and channels pertaining to business operation constituting the high category of information flow and access. The overall poor response rate speaks about the inadequacy of business information flow into the villages. It is also observed that the villagers have more access to information through IP sources and channels as evident from the total percentages obtained against IP sources and channels, which are higher than those of NIP sources and channels of information. Therefore, even in this regard, interpersonal communication plays an important role in information flow and access in the villages.

#### 4.1.5 General information

**Table 5: Total percentages of information access obtained against IP and NIP sources and channels of information for the purpose of general information.**

Information flow and access	Extent of use	General information (%)	
		IP	NIP
L o w	Never	12.47	31.83
	Rarely	28.82	52.26
	Total	41.29	84.09
Moderate	Sometimes	43.23	15.91
H i g h	Frequently	10.75	0.00
	Always	4.73	0.00
	Total	15.48	0.00
Grand total		100.00	100.00

Table 5 provides information about the volume of information flow and access in the villages under study and the extent of use of various information sources and channels with regard to general information. The percentages against IP and NIP sources and channels of information indicate a low volume of information flow and access in the villages, particularly through NIP sources and channels of information with 84.09 percent falling under the low category.

Further, percentage of 43.23 percent of the respondents for IP sources and channels as against 15.91 percent for NIP sources and channels falling under the moderate category of information flow and access reflects that the villagers have more access to general information through IP sources and channels than through NIP sources and channels of information. This is also evident from frequency distribution table that 15.48 percent of the respondents against IP sources and channels falling under the high category of information flow and access as compared with 0.00 percent against NIP sources and channels of information. Hence, it is observed that interpersonal communication among the villagers has a prominent place in information flow and access as far as general information is concerned.

#### ***4.1.6 Concluding remarks on the first hypothesis***

As evident from the above analysis and interpretation, it can be concluded that 'interpersonal communication among members of a social system serves as an important source and channel of information,' *has* been proved to be true. This is because of the availability and accessibility of the interpersonal sources and channels of information to the villagers.

Further, it is obvious that information flow and access through non-interpersonal sources and channels of information have been found to be very low. This is because non-interpersonal sources and channels are not in constant contact by the villagers and are not readily available when needed. Moreover, non-interpersonal sources and channels of information also lack accessibility. As for instance, most of the television and radio programmes and newspapers do not meet local requirements. At the same time, governmental as well as non-governmental functionaries such as health workers, agricultural extension workers, co-operatives and others do not make themselves available to the villagers when they are really required.

Thus, information flow and access through interpersonal sources and channels have been found more effective in the villages as compared to non-interpersonal sources and channels of information. However, the result of the study does not give a reasonable picture regarding the volume of information flow and access in the villages even through IP sources and channels of information. This has been mainly due to the lack of exposure of the interpersonal sources and channels to various

developments in information communication technologies and media available as they usually remain confined to the villages and depend on the same means of acquiring information, which include folk knowledge and experiences. Apart from the problems discussed above, poor communication infrastructures in the villages remained a major drawback responsible for the poor rate of information flow and access.

#### **4.2 Second hypothesis**

The choice and use of information sources and channels vary from person to person. People usually prefer particular sources and channels of information depending upon their socio-economic environment. Besides, the use of any source or channel varies greatly upon the specific context. The following analysis and interpretation have been incorporated as an attempt to test the hypothesis that **'use of information sources and channels vary across socio-economic variables.'** As mentioned earlier, for the purpose of analysis, various information sources and channels incorporated in this study are grouped into two broad categories as interpersonal (IP) and non-interpersonal (NIP) sources and channels. The

socio-economic variables considered in this study include *literacy*, *occupation* and *income level*.

The average scores of the individual responses obtained against various sources and channels for different purposes have been grouped into four groups on the basis of the quartile scores. To find out the association between the socio-economic variables incorporated in this study and the extent of use of various information sources and channels, Chi Square was computed and tested at 5 % level of significance with the degrees of freedom shown against each table. The following analysis and interpretation have been made on the basis of the summary tables in which the values of  $\chi^2$  values with their respective degrees of freedom are incorporated showing whether there exist any association between socio-economic variables and extent of use of various information sources and channels. Further, contingency tables showing the details of the frequency distribution are given in the annexure II for reference and verification.

#### 4.2.1 *Educational purposes*

Table 6 shows the summary of the analysis of the association between socio-economic characteristics of the respondents and the extent of their use of various information sources and channels for educational purposes. The  $\chi^2$  values as shown in the table indicate that there is no association between literacy and use of IP sources and channels, whereas it is observed that there is association between literacy and use of NIP sources and channels with regard to educational purposes. This attests the fact that both literate and illiterate villagers use IP sources and channels to a more or less the same extent, whereas literate villagers use NIP sources and channels to a greater extent than those who are illiterate in so far as educational purposes are concerned.

**Table 6: Association between socio-economic variables and use of information sources and channels with regard to educational purposes**

Sources and channels with socio-economic variables and remarks	Purposes				df.
	Education for family members		Education for employment benefits		
	$\chi^2$ Computed	$\chi^2$ Tabulated	$\chi^2$ Computed	$\chi^2$ Tabulated	
<b>Literacy and IP</b>	<b>5.70</b>	<b>7.81</b>	<b>1.89</b>	<b>7.81</b>	<b>3</b>
<b>Remarks</b>	<b>Rejected</b>		<b>Rejected</b>		
<b>Literacy and NIP</b>	<b>13.63</b>	<b>7.81</b>	<b>12.12</b>	<b>7.81</b>	<b>3</b>
<b>Remarks</b>	<b>Accepted</b>		<b>Accepted</b>		
<b>Occupation and IP</b>	<b>20.45</b>	<b>12.59</b>	<b>8.57</b>	<b>12.59</b>	<b>6</b>
<b>Remarks</b>	<b>Accepted</b>		<b>Rejected</b>		
<b>Occupation and NIP</b>	<b>6.12</b>	<b>12.59</b>	<b>8.57</b>	<b>12.59</b>	<b>6</b>
<b>Remarks</b>	<b>Rejected</b>		<b>Rejected</b>		
<b>Income and IP</b>	<b>5.27</b>	<b>12.59</b>	<b>8.58</b>	<b>12.59</b>	<b>6</b>
<b>Remarks</b>	<b>Rejected</b>		<b>Rejected</b>		
<b>Income and NIP</b>	<b>21.38</b>	<b>12.59</b>	<b>10.84</b>	<b>12.59</b>	<b>6</b>
<b>Remarks</b>	<b>Accepted</b>		<b>Rejected</b>		

Note: df. = Degrees of freedom

It is also observed that there is association between occupation and use of IP sources and channels with regard to education for family members. This indicates that the extent of use of IP sources and channels vary according to the occupational status of the respondents as far as education for family members is concerned. Further, it is found that there is no association between occupation and use of IP sources and channels for the purpose of education for employment benefits and use of NIP

sources and channels for both the educational purposes. With regard to income and use of various information sources and channels, it is observed that there is no association between use of IP sources and channels in so far as educational purposes are concerned and NIP sources and channels with regard to education for employment benefits. However, it is found that there is association between income and use of NIP sources and channels with regard to education for family members. This indicates that use of NIP sources and channels vary across the income levels of the villagers when it comes to education for family members.

#### 4.2.2 Health care purposes

**Table 7: Association between socio-economic variables and use of information sources and channels with regard to health care purposes**

Sources and channels with variables and remarks	Purposes						df.
	Health care for self		Health care for family members		Making use of various health programs and services		
	$\chi^2$ Com.	$\chi^2$ Tab.	$\chi^2$ Com.	$\chi^2$ Tab.	$\chi^2$ Com.	$\chi^2$ Tab.	
Literacy and IP	14.21	7.81	3.18	7.81	4.74	7.81	3
Remarks	Accepted		Rejected		Rejected		
Literacy and NIP	9.09	7.81	0.51	7.81	2.23	7.81	3
Remarks	Accepted		Rejected		Rejected		
Occupation and IP	5.47	12.59	10.91	12.59	3.88	12.59	6
Remarks	Rejected		Rejected		Rejected		
Occupation and NIP	10.00	12.59	4.22	12.59	5.88	12.59	6
Remarks	Rejected		Rejected		Rejected		
Income and IP	16.26	12.59	7.72	12.59	5.37	12.59	6
Remarks	Accepted		Rejected		Rejected		
Income and NIP	14.15	12.59	7.48	12.59	6.16	12.59	6
Remarks	Accepted		Rejected		Rejected		

Note:  $\chi^2$  Com. =  $\chi^2$  Computed     $\chi^2$  Tab. =  $\chi^2$  Tabulated    df. = Degrees of freedom

As evident from the Table 7, it is observed that in most cases there exist no association between socio-economic variables and the extent of use of various information sources and channels in so far as health care purposes are concerned. However, the  $\chi^2$  values as shown in the table reveals that there is association between literacy and income and the extent of use of both IP and NIP sources and channels of information pertaining to health care for self. This indicates that the extent of use of various information sources and channels for the purpose of health care for self vary across the educational status and the income level of the villagers.

It is also observed from the table that there is no association between occupation and use of various information sources and channels with regard to health care for self. Further, it is observed that there exist no association between use of various information sources and channels and socio-economic variables when it comes to health care for family members and making use of various health programs and services. This indicates that the villagers use both IP and NIP information sources

and channels to an equal extent regardless of variations in their socio-economic status.

### 4.2.3 Agricultural purposes

Table 8: Association between socio-economic variables and use of information sources and channels with regard to agricultural purposes

Sources and channels with remarks	Purposes								df.
	Agricultural extension services		Adoption of modern agricultural technology		Farming activities		Agricultural credit facilities		
	$\chi^2$ Com.	$\chi^2$ Tab.	$\chi^2$ Com.	$\chi^2$ Tab.	$\chi^2$ Com.	$\chi^2$ Tab.	$\chi^2$ Com.	$\chi^2$ Tab.	
Literacy and IP	12.85	7.81	21.01	7.81	5.16	7.81	10.88	7.81	3
Remarks	Accepted		Accepted		Rejected		Accepted		
Literacy and NIP	16.36	7.81	17.12	7.81	5.85	7.81	0.06	7.81	3
Remarks	Accepted		Accepted		Rejected		Rejected		
Occupation and IP	21.03	12.59	31.31	12.59	11.03	12.59	24.5	12.59	6
Remarks	Accepted		Accepted		Rejected		Accepted		
Occupation and NIP	16.27	12.59	14.91	12.59	15.01	12.59	2.98	12.59	6
Remarks	Accepted		Accepted		Accepted		Rejected		
Income and IP	4.46	12.59	10.59	12.59	11.90	12.59	28.65	12.59	6
Remarks	Rejected		Rejected		Rejected		Accepted		
Income and NIP	5.63	12.59	9.47	12.59	18.91	12.59	1.32	12.59	6
Remarks	Rejected		Rejected		Accepted		Rejected		

Note:  $\chi^2$  Com. =  $\chi^2$  Computed       $\chi^2$  Tab. =  $\chi^2$  Tabulated      df. = Degrees of freedom

Table 8 has been incorporated to reflect whether there exist association between socio-economic variables and the extent of use of various information sources and channels with regard to agricultural purposes. It is observed from the table that there is association between literacy and use of both IP and NIP sources and channels of information with regard to agricultural extension services and adoption of modern agricultural technology. It is also revealed that there is association between literacy and use of IP sources and channels pertaining to agricultural credit facilities.

This shows that both literate and illiterate villagers depend equally on IP sources and channels which include teachers, co-farmers, relatives and friends when it comes to agricultural extension services, adoption of modern agricultural technology and agricultural credit facilities. This also indicates that the villagers have very less constant access to agricultural information through NIP sources and channels including agricultural extension workers, mass media, etc., as reflected in the Table 8.1 and Table 8.2 of the annexure II.

Further, it is also observed that there is no association between literacy and use of various information sources and channels with regard to farming activities, which include poultry, piggery, dairy and pisciculture, and use of NIP sources and channels with regard to agricultural credit facilities. This shows that both literate and illiterate villagers use IP and NIP sources and channels to a more or less the same extent for their farming activities and NIP sources and channels relating to agricultural credit facilities. This tendency also indicates the poor volume of constant information flow and access in the villages through various information sources and channels pertaining to farming activities and agricultural credit facilities as reflected in the Table 8.3 and Table 8.4 of the annexure II.

Interestingly, it is observed that there is a positive association between occupation and the extent of use of both IP and NIP information sources and channels with regard to agricultural extension services, adoption of modern agricultural technology and use of NIP sources and channels pertaining to farming activities and use of IP sources and channels relating to agricultural credit facilities. This relates that the

villagers use IP sources and channels more than NIP sources and channels of information for the above-mentioned agricultural purposes. However, there is no association between occupation and use of IP sources and channels with regard to farming activities and use of NIP sources and channels relating to agricultural credit facilities, which indicates that the villagers use IP sources and channels to a more less the same extent when it comes to farming activities and use of NIP sources and channels with regard to agricultural credit facilities. Table 8 also indicates that there is no association between income and use of IP and NIP sources and channels in so far as agricultural extension services and adoption of modern agricultural technology are concerned. It is also observed that there is no association between income and use of IP sources and channels pertaining to farming activities and use of NIP sources and channels with regard to agricultural credit facilities. This reflects that the villagers of all income groups use IP and NIP sources and channels for agricultural extension services and adoption of modern agricultural technology and IP sources and channels with regard to farming activities and NIP sources and channels relating to agricultural activities to an equal extent. Further, it is observed that there is association between income and use of NIP

sources and channels with regard to farming activities and IP sources and channels pertaining to agricultural credit facilities. This indicates that the villagers use IP sources and channels to a greater extent than NIP sources and channels as far as farming activities and agricultural credit facilities are concerned as reflected in Table 8.11 and Table 8.12 of the annexure II.

#### 4.2.4 Business purposes

**Table 9: Association between socio-economic variables and use of information sources and channels with regard to business purposes**

Sources and channels and remarks	Purposes				df.
	Business activities		Business credit facilities		
	$\chi^2$ Compute	$\chi^2$ Tabulated	$\chi^2$ Computed	$\chi^2$ Tabulated	
<b>IP and Literacy</b>	0.76	7.81	0.17	7.81	3
<b>Remarks</b>	Rejected		Rejected		
<b>NIP and Literacy</b>	0.76	7.81	1.69	7.81	3
<b>Remarks</b>	Rejected		Rejected		
<b>IP and Occupation</b>	29.14	12.59	22.33	12.59	6
<b>Remarks</b>	Accepted		Accepted		
<b>NIP and Occupation</b>	26.85	12.59	27.21	12.59	6
<b>Remarks</b>	Accepted		Accepted		
<b>IP and Income</b>	2.62	12.59	4.03	12.59	6
<b>Remarks</b>	Rejected		Rejected		
<b>NIP and Income</b>	2.01	12.59	1.59	12.59	6
<b>Remarks</b>	Rejected		Rejected		

Note: df. = Degrees of freedom

As evident from the Table 9, there is no association between literacy and use of both IP and NIP sources and channels in so far as business purposes are concerned. This indicates that the villagers use both IP and NIP sources and channels to a more or less the same extent regardless of their educational status. It is also observed that there is a positive association between occupation and use of both IP and NIP sources and channels when it comes to business purposes. This signifies that use of various information sources and channels vary across occupational status of the villagers.

Further, it is also indicated that there is no association between income and use of various information sources and channels with regard to business purposes. This reflects that the villagers use both IP and NIP sources and channels to a more or less the same extent for business purposes regardless of the variations in their income.

In this regard, it is imperative to emphasise that Table 9.1 to Table 9.6 of the annexure II depict a very low volume of business information

flow and access in the villages through both IP and NIP sources and channels of information.

#### 4.2.5 General information

**Table 10: Association between socio-economic variables and use of information sources and channels with regard to general information**

Sources and channels with variables	Purpose: General information			
	$\chi^2$ Computed	$\chi^2$ Tabulated	Degrees of freedom	Remarks
<b>IP and Literacy</b>	<b>4.26</b>	<b>7.81</b>	<b>3</b>	<b>Rejected</b>
<b>NIP and Literacy</b>	<b>12.42</b>	<b>7.81</b>	<b>3</b>	<b>Accepted</b>
<b>IP and Occupation</b>	<b>8.92</b>	<b>12.59</b>	<b>6</b>	<b>Rejected</b>
<b>NIP and occupation</b>	<b>4.72</b>	<b>12.59</b>	<b>6</b>	<b>Rejected</b>
<b>IP and Income</b>	<b>6.00</b>	<b>12.59</b>	<b>6</b>	<b>Rejected</b>
<b>NIP and Income</b>	<b>22.88</b>	<b>12.59</b>	<b>6</b>	<b>Accepted</b>

The above Table 10 depicts the values of  $\chi^2$  to reflect on the association between socio-economic variables and use of various information sources and channels with regard to general information. It is observed that there is no association between literacy and use of IP sources and channels. It is further observed that there is no association between occupation and use of various information sources and channels and between income and use of IP sources and channels with regard to

general information. Interestingly, it is observed that there is a positive association between literacy and income and the extent of use of NIP sources and channels. This indicates that both literate and illiterate villagers use IP sources and channels to a more or less the same extent and more constantly than that of NIP sources and channels in so far as general information is concerned.

#### ***4.2.6 Concluding remarks on the second hypothesis***

From the above analysis and interpretation, it is revealed that in most of the purposes, use of information sources and channels do not vary across socio-economic variables though it varies in certain purposes. The variations are indicated mostly against the extent of use of NIP sources and channels, which indicates that NIP sources and channels are used by the villagers only to a limited context. This also reflects that the villagers use IP sources and channels to a greater extent for all purposes regardless of their socio-economic characteristics. In other words, IP sources and channels are more effective in catering to the information needs of the villagers for various purposes than NIP sources and channels of information.

Therefore, the hypothesis, i.e., 'use of information sources and channels vary across socio-economic variables' has been rejected partially.

#### **4.3 Third hypothesis**

The generation and dissemination of information and utilization of various information sources and channels vary across geographical variations. It also varies from purpose to purpose. Therefore, it is necessary to probe into the variations that occur between Nagaland and Meghalaya with regard to the extent of use of various information sources and channels for different purposes. Even in this respect, various information sources and channels incorporated in the study are grouped into two broad categories as interpersonal (IP) and non-interpersonal (NIP) sources and channels for the purpose of analysis.

The following analysis and interpretation as reflected in the tables given below have been incorporated to test the hypothesis that **'information flow and access vary across geographical variations'** with the related purposes for which information is required. By

geographical variations may be understood to indicate the villages of both Meghalaya and Nagaland selected for the present study. In this regard, after obtaining the average scores and the standard deviations, 't' test was applied and tested at 5 % level of significance in order to determine the statistical difference with regard to information flow and access through various information sources and channels across geographical variations.

#### 4.3.1 State wise comparison - Educational purposes

**Table 11: State wise differential use of sources and channels of information for educational purposes.**

Purposes	Sources and channels	Mean Score 1	Mean Score 2	Standard deviation 1	Standard deviation 2	Computed t value.
Education for family members	IP	2.84	3.01	0.52	0.63	1.86
	NIP	1.59	2.14	0.35	0.53	7.74*
Education for employment benefits	IP	2.61	2.88	0.61	0.66	2.58*
	NIP	1.58	2.11	0.42	0.46	7.47*

**Note:** \* t value exceeds the expected t value at 5% level of significance  
 Mean Score 1 and Standard deviation 1 stands for villages of Meghalaya.  
 Mean Score 2 and Standard deviation 2 stands for villages of Nagaland.

In so far as the extent of use of various sources and channels of information pertaining to educational needs of the respondents are concerned, it is evident from the Table 11 that the average scores of the

villagers of Nagaland computed for various educational purposes are greater than the respective average scores of the villagers of Meghalaya. This indicates that the villagers of Nagaland have access to information through both IP and NIP sources and channels of information to a greater extent than the villagers of Meghalaya when it comes to educational purposes.

The result of the analysis also indicates that information flow and access through IP sources and channels in the villages is higher than that of NIP sources and channels in both the states. However, it is obvious from the above table that the volume of information flow and access in the villages of both the states are moderately low as far as education for family members is concerned.

In order to test the statistical significance between the average scores obtained for the two states for various educational purposes with respect to both the sources and channels a 't' test was performed and the computed values of t were compared with the expected values of t at 5 % level of significance. On comparison, it is found that there is no

significant difference between the average scores of the two states obtained against IP for the purpose of education for family members where as the average score against the IP for Nagaland significantly differs from that of Meghalaya when it comes to education for employment benefits. Further, it is found that the average scores obtained for Nagaland against the NIP differ significantly from that of Meghalaya for both the educational purposes. Hence, it is revealed in this study that the villagers in Nagaland use the NIP sources and channels more than the villagers of Meghalaya for both the educational purposes and IP for the purpose of employment benefits.

#### 4.3.2 Health care purposes

**Table 12: State wise differential use of sources and channels of information for health care purposes.**

Purposes	Sources and channels	Mean Score 1	Mean Score 2	Standard deviation 1	Standard deviation 2	Computed t value.
Self health care	IP	2.42	2.61	0.58	0.54	2.06*
	NIP	1.93	2.51	0.44	0.56	7.17*
Health care for family members	IP	2.39	2.82	0.64	0.70	3.96*
	NIP	2.35	2.60	0.42	0.41	3.80*
Making use of health programs and services	IP	2.34	2.53	0.53	0.60	2.14*
	NIP	1.84	2.26	0.53	0.43	5.42*

Table 12 has been incorporated to depict the differential use of various information sources and channels between the villages of Nagaland and Meghalaya. In this regard, the average scores of Nagaland computed for various health care purposes are greater than the respective average scores of Meghalaya. This indicates that the villagers of Nagaland relatively use both IP and NIP information sources and channels to a greater extent than the villagers of Meghalaya for various health care purposes.

To test the statistical significance between the average scores obtained for both the states for various health care purposes with respect to IP and NIP sources and channels of information 't' test was applied. The computed values of t when compared with the expected values of t at 5 percent level of significance shows that there is significant difference between the average scores of the two states obtained against IP and NIP sources and channels of information for the purpose of various health care systems. Hence, it can be concluded in this regard that the villagers in Nagaland use both the IP and NIP sources and channels of information to

a greater extent than the villagers of Meghalaya with regard to various health care purposes.

### 4.3.3 Agricultural purposes

**Table 13: State wise differential use of sources and channels of information for agricultural purposes.**

Purposes	Sources and channels	Mean Score	Mean Score	Standard deviation	Standard deviation	Computed t value.
		1	2	1	2	
Making use of agricultural extension services	IP	2.11	2.52	1.14	1.06	2.31*
	NIP	1.76	2.05	0.79	0.67	2.51*
Adoption of modern agricultural techniques	IP	2.22	2.57	1.27	1.07	1.86
	NIP	1.70	1.95	0.73	0.60	2.31*
Farm activities	IP	1.72	1.66	0.87	0.94	0.45
	NIP	1.30	1.34	0.45	0.54	0.49
Agricultural credit facilities	IP	1.13	1.27	0.27	0.40	2.52*
	NIP	1.04	1.10	0.12	0.24	2.23*

Table 13 depicts that the average scores of Nagaland computed for various agricultural purposes are greater than the respective average scores of Meghalaya except that of IP sources and channels on farm activities. This signifies that villagers of Nagaland use both IP and NIP

information sources and channels to a greater extent than villagers of Meghalaya for various agricultural purposes other than their farm activities.

In order to test the statistical significance between the average scores obtained for the two states for various agricultural purposes with respect to both the IP and NIP sources and channels, a 't' test was employed and compared with the expected values of t. It was found that the average scores obtained for Nagaland against IP and NIP information sources and channels for the purpose of making use of various agricultural extension services and on availing agricultural credit facilities and the average score obtained against NIP on adoption of modern agricultural technology is greater than that of Meghalaya.

However, there is no significant difference on the use of IP for the purpose of adoption of modern agricultural technology. Also there exist no significant difference on the use of both IP and NIP sources and channels of information for the purpose of farming activities. Hence it is concluded that villagers in Nagaland use both the IP and NIP sources and

channels to a greater extent than villagers of Meghalaya for various agricultural purposes other than their farming activities.

#### 4.3.4 *Business purposes*

As evident from the Table 14, there is only a negligible difference in the average scores obtained against the extent of use of both the IP and NIP information sources and channels for business purposes between Nagaland and Meghalaya.

**Table 14: State wise differential use of sources and channels of information for Business purposes.**

Purposes	Sources and channels	Mean Score	Mean Score	Standard deviation	Standard deviation	Computed t value.
		1	2	1	2	
Business operations	IP	1.53	1.45	1.01	0.92	0.51
	NIP	1.26	1.27	0.51	0.58	0.17
Business loan facilities	IP	1.11	1.16	0.26	0.38	1.04
	NIP	1.11	1.10	0.28	0.26	0.39

To determine the statistical significance between the average scores obtained for the two states for business purposes with respect to the extent of use of both the IP and NIP sources and channels, 't' test was applied and the computed values of t were compared with the expected values

of t. The comparison reveals that there is no significant difference on the use of IP and NIP sources and channels of information relating to business purposes. Hence, the result of the study reveals that the villagers in both the states use IP and NIP sources and channels of information to an equal extent for business purposes.

#### 4.3.5 *General information*

**Table 15: State wise differential use of sources and channels of information for general information.**

Purpose	Sources and channels	Mean Score	Mean Score	Standard deviation	Standard deviation	Computed T value.
		1	2	1	2	
General information	IP	2.86	2.48	0.69	0.89	2.93*
	NIP	1.63	2.04	0.44	0.51	5.41*

Table 15 depicts that the average score obtained for Meghalaya against the extent of use of IP sources and channels of information for general information is greater than that of Nagaland, where as the average score obtained for Nagaland against the extent of use of NIP sources and channels is greater than that of Meghalaya.

To test the statistical significance between the average scores obtained for the two states for general information with respect to the extent of use of both the IP and NIP sources and channels, 't' test was applied and the computed values of t when compared with the expected values of t shows that there is a significant difference on the use of IP and NIP sources and channels relating to general information. The result of the study reveals that the villagers in Meghalaya use IP sources and channels of information more than the villagers of Nagaland, where as the villagers of Nagaland use NIP sources and channels of information more than those of Meghalaya for the purpose of general information. The result of the analysis also shows that the villagers in both the states use IP sources and channels of information more than those of NIP for the purpose of general information.

#### ***4.3.6 Concluding remarks on the state wise comparison***

The result of the above analysis reveals that information flow and access patterns vary between Meghalaya and Nagaland in most of the purposes. However, there are few instances where no variations have been indicated, particularly that of business purposes as depicted in the

Table 14. The result also reflects that the villagers of Nagaland have access to information through IP and NIP sources and channels to a greater extent than the villagers of Meghalaya for various purposes.

#### 4.3.7 Village wise comparison

The subsequent analysis and interpretation have been made village wise i.e., villages far from town against villages near to town within the respective states.

#### 4.3.8 Villages of Meghalaya- Educational purposes

Table 16: Village wise differential use of sources and channels of information for educational purposes in Meghalaya.

Purposes	Sources and channels	Mean 1	Mean 2	Standard deviation 1	Standard deviation 2	Computed t value
Education for family members	IP	2.73	2.90	0.60	0.45	1.29
	NIP	1.45	1.67	0.17	0.41	3.23*
Education for employment benefits	IP	2.58	2.63	0.74	0.53	0.31
	NIP	1.32	1.73	0.27	0.42	5.17*

**Note:** \* t value exceeds the expected t value at 5% level of significance

Mean Score 1 and Standard deviation 1 stands for village far from town

Mean Score 2 and Standard deviation 2 stands for village near to town

As evident from the Table 16, the average scores of the village near to town computed against the extent of use of both IP and NIP sources and channels of information for various educational purposes are greater than the respective average scores of the village far from town. This indicates that the villagers who live nearer to town use IP and NIP sources and channels of information to a greater extent than those villagers who live far from town with regard to educational purposes.

For testing the statistical significance between the average scores obtained for the two villages with regard to the extent of use of both IP and NIP sources and channels for various educational purposes, 't' test was applied. The computed values of t was compared with the expected values of t at 5 % level of significance, which reveals that there is no significant difference on the extent of use of IP sources and channels of information between the villagers of the two villages. However, there is significant difference in the use of NIP sources and channels in so far as educational purposes are concerned. In this regard, it is observed that villagers who live near to town use NIP sources and channels to a greater extent than those who live far form town. This is because NIP sources and

channels are more accessible to villagers who live near to town as the overall environment facilitates the reach of television programmes, newspapers and other NIP sources and channels.

#### 4.3.9 Health care purposes

**Table 17: Village wise differential use of sources and channels of information for health care purposes in Meghalaya.**

Purposes	Sources and channels	Mean 1	Mean 2	Standard deviation 1	Standard deviation 2	Computed t value
Health care for self	IP	2.42	2.42	0.73	0.48	0.04
	NIP	1.75	2.04	0.33	0.46	3.09*
Health care for family members	IP	2.14	2.54	0.71	0.56	2.49*
	NIP	2.18	2.45	0.46	0.36	2.68*
Making use of health programs and services	IP	2.36	2.33	0.57	0.52	0.24
	NIP	1.58	1.99	0.64	0.38	3.09*

From the Table 17, it is evident that the overall average scores of village near to town computed against the extent of use of both IP and NIP sources and channels of information for various health care purposes are greater than the respective average scores of village far from town. The table also indicates that the use of IP sources and channels is greater than that of NIP sources and channels of information by the villagers of both the villages.

To determine the statistical significance between the average scores obtained for the two villages with regard to the extent of use of both the IP and NIP sources and channels of information for various health care purposes, 't' value was computed and tested at 5 % level of significance. The result of the test reveals that there exist significant difference on the extent of use of NIP sources and channels of information among the villagers of the two villages for various health care purposes. It is also observed that there is significant difference on the extent of use of IP sources and channels with regard to family health care. However, there exist no significant difference among the villagers on the extent of use of IP sources and channels relating to health care for self and in making use of various health programs and services. Therefore, it can be concluded that villagers living near to town use NIP sources and channels to a greater extent with regard to various health care purposes and IP sources and channels relating to family health care than those living far from town mainly because of the overall conducive infrastructure of being near to town.

#### 4.3.10 Agricultural purposes

As Shown in the Table 18, the average scores of the village located far from town obtained against the extent of use of both the IP and NIP information sources and channels for various agricultural purposes are greater than that of the village near to town.

**Table 18: Village wise differential use of sources and channels of information for agricultural purposes in Meghalaya.**

Purposes	Sources and channels	Mean Score	Mean Score	Standard deviation	Standard deviation	Computed t value
		1	2	1	2	
Making use of agricultural extension services	IP	2.48	1.89	1.11	1.11	2.23*
	NIP	2.00	1.61	0.78	0.77	2.10*
Adoption of modern agricultural techniques	IP	2.66	1.96	1.25	1.21	2.37*
	NIP	1.92	1.57	0.70	0.72	2.07*
Farm activities	IP	1.73	1.72	0.94	0.84	0.02
	NIP	1.17	1.38	0.25	0.52	2.37*
Agricultural credit facilities	IP	1.15	1.11	0.33	0.23	0.60
	NIP	1.02	1.04	0.09	0.13	0.68

The table also indicates that the extent of use of IP sources and channels by the villagers of both the villages are greater than that of NIP sources and channels of information. Further, though information access

by the villagers of the village far from town through both IP and NIP sources and channels with regard to agricultural extension services and IP sources and channels of information relating to adoption of modern agricultural technology are moderately higher, it is observed that information access through both IP and NIP sources and channels is very low with respect to farming activities and agricultural credit facilities.

It is also observed that access to information by the villagers living near to town through both IP and NIP sources and channels are very low. This indicates that there is not much flow of agricultural related information into the villages, particularly through NIP sources and channels.

To find out the statistical significance of the difference between the average scores obtained for the two villages for various agricultural purposes with respect to the extent of use of both the IP and NIP sources and channels, 't' test was applied. The computed values of t, when compared with the expected values of t at 5 % level of significance reveals that there is significant difference on the use of IP and NIP

sources and channels of information relating to agricultural purposes amongst the villagers of both the villages. It is, therefore, observed that villagers living far from town use of both IP and NIP sources and channels more than those villagers living near to town with regard to making use of agricultural extension services and adoption of modern agricultural technology. On the other hand, it is also observed that villagers living near to town use NIP sources and channels relating to farming activities more than those villagers living far from town. However, it may be noted that there is no significant difference on the use of IP sources and channels with respect to farming activities and both IP and NIP sources and channels of information relating to agricultural credit facilities. Therefore, it can be concluded that villagers living far from town use both IP and NIP sources and channels to a greater extent than the villagers living near to town in so far as various agricultural purposes are concerned.

#### ***4.3.11 Business purposes***

It is evident from the Table 19 that the average scores of the village located near to town are greater than the average scores of the village far

from town. The table also indicates that the villagers of both the villages use IP sources and channels to a greater extent than NIP sources and channels with respect to business purposes.

**Table 19: Village wise differential use of sources and channels of information for business purposes in Meghalaya.**

Purposes	Sources and channels	Mean Score 1	Mean Score 2	Standard deviation 1	Standard deviation 2	Computed t value
Business operation	IP	1.25	1.69	0.75	1.10	2.05*
	NIP	1.13	1.33	0.40	0.55	1.79
Business credit facilities	IP	1.06	1.13	0.22	0.28	1.23
	NIP	1.07	1.14	0.26	0.29	1.05

Further, it is also observed that the volume information flow and access in the villages through both IP and NIP sources and channels with regard to business purposes have been found to be very low.

To understand the statistical significance between the average scores obtained for the two villages with respect to the extent of use of both IP and NIP sources and channels for business purposes, 't' test was used and the computed values of t were compared with the expected values of t at 5% level of significance. The result of the test reveals that there is significant statistical difference in the use of IP sources and

channels of information relating to business operation. However, it is observed that there exists no significant difference on the use of NIP sources and channels regarding business operation and both IP and NIP sources and channels of information with regard to business credit facilities. Further, it is also observed that the villagers living near to town use IP sources and channels for business operation to a greater extent than those villagers living far from town. However, the result of the analysis indicates that the villagers of both the villages use both IP and NIP sources and channels of information to a more or less the same extent when it comes to business credit facilities. Finally, as evident from the table, it is concluded that there is a very low volume of business related information flow and access in the villages.

#### 4.3.12 General information

**Table 20: Village wise differential use of sources and channels of information for general information in Meghalaya.**

Purpose	Sources and channels	Mean Score 1	Mean Score 2	Standard deviation 1	Standard deviation 2	Computed T value
General information	IP	2.76	2.91	0.56	0.75	0.98
	NIP	1.48	1.72	0.40	0.44	2.50*

As evident from the Table 20, the average scores obtained for villagers living far from town with regard to extent of use of both IP and NIP sources and channels indicates are greater than that of those villagers living far from the town in so far as general information purpose is concerned. The table also reflects a very low volume of information flow and access, in this regard, through NIP sources and channels.

The use of NIP sources and channels of information in this regard is very low which indicates that the villagers of both the villages do not have much access to information for their general information. It is also observed that information access through NIP sources and channels in the villages are very low though it is moderate with regard to information access through IP sources and channels of information. This behaviour indicates that there is relatively very poor rate of information flow into the villages regardless of the geographical distances for the purpose of general information.

For testing the statistical difference between the mean scores obtained for the two villages with respect to the extent of use of both the

IP and NIP sources and channels of information for general information, 't' test was applied. The computed values of t when compared with the expected values of t at 5 % level of significance reveals that there is no significant difference between the villagers of the two villages with regard to extent of use of IP sources and channels for the purpose of general information. Relating to the use of NIP sources and channels, however, there exists a significant difference. The analysis indicates that villagers of the village located near to town use NIP sources and channels to a greater extent than those of the village far from town. Hence, it can be concluded that villagers of the village nearer to town have better access to NIP sources and channels of information than those of the village far from town in so far as general information is concerned.

#### ***4.3.13 Concluding remarks on the villages of Meghalaya***

It is evident from the above analysis that there exist variations in information flow and access between the villages in most of the purposes. It is found that the villagers living near to town have more access to information through both IP and NIP sources and channels than those villagers living far from town in all the purposes except that of

agricultural purposes. With regard to various agricultural purposes, it is indicated that villagers living far from town have access to information to a greater extent than those living near to town. However, interestingly, the extent of use of NIP sources and channels by the villagers living near to town has been shown greater when it comes to farming activities and agricultural credit facilities. Thus, it can be concluded that living nearer to town has the advantage of getting more access to information for various purposes pertinent in life.

#### 4.3.14 Villages of Nagaland- Educational purposes

**Table 21: Village wise differential use of sources and channels of information for educational purposes in Nagaland.**

Purposes	Sources and channels	Mean Score 1	Mean Score 2	Standard deviation 1	Standard deviation 2	Computed t value
Education for family members	IP	3.51	2.87	0.49	0.60	4.56*
	NIP	1.94	2.20	0.43	0.54	2.07*
Education for employment benefits	IP	3.04	2.83	0.88	0.59	0.91
	NIP	1.73	2.21	0.43	0.41	4.17*

**Note: \* t value exceeds the expected t value at 5% level of significance**

**Mean Score 1 and Standard deviation 1 stands for village far from town and Mean Score 2 and Standard deviation 2 stands for village near to town**

As evident from the Table 21, the average scores of village far from town computed to show the extent of use of IP sources and channels of information for various educational purposes are greater than the respective mean scores of village near to town. This indicates that the villagers far from town use IP sources and channels of information to a greater extent than those villagers who reside near to town with regard to educational purposes. This also reflects that NIP sources and channels do not reach the villagers who live far from town. However, the NIP sources and channels are used relatively to a greater extent by the villagers of village near to town for educational purposes. This shows that NIP sources and channels including mass media are more accessible to those villagers who live near to town.

For determining the statistical significance between the average scores obtained for the two villages with regard to the extent of use of both the IP and NIP sources and channels for various educational purposes 't' test was computed and compared with the expected values of t, which reveals that there is significant difference on the extent of use of IP and NIP sources and channels of information between the villagers of

the two villages. It is observed that the villagers of village far from town use IP sources and channels more than those who live near to town in so far as education for family members is concerned. Further, the result of the analysis also shows that villagers who live near to town use NIP sources and channels more than those villagers who live far from town as far as educational purposes are concerned. However, the result of the analysis depicts that there is no significant difference on the use of IP with regard to education for employment purposes amongst the villagers.

Therefore, it is concluded that villagers who are far away from town depend more on interpersonal sources and channels, while NIP sources and channels are found more accessible to villagers who live near to town as far as educational purposes are concerned.

#### ***4.3.15 Health care purposes***

From the Table 22, it is evident that the average scores of village far from town computed against the extent of use of both IP and NIP sources and channels of information for various health care purposes are greater than the respective average scores of village near to town. The

table also indicates that use of IP sources and channels is greater than that of NIP sources and channels of information by the villagers of both the villages.

**Table 22: Village wise differential use of sources and channels of information for health care purposes in Nagaland.**

Purposes	Sources and channels	Mean Score	Mean Score	Standard deviation	Standard deviation	Computed T value
		1	2	1	2	
Health care for self	IP	2.92	2.52	0.40	0.54	3.38*
	NIP	2.06	2.63	0.63	0.48	3.52*
Health care for family members	IP	3.47	2.64	0.88	0.53	3.73*
	NIP	2.61	2.60	0.36	0.42	0.04
Making use of health programs and services	IP	2.82	2.45	0.54	0.59	2.45*
	NIP	2.29	2.25	0.44	0.43	0.34

In order to establish statistically significant difference between the average scores obtained for the two villages with regard to the extent of use of both IP and NIP sources and channels for various health care purposes, 't' test was applied. The computed values of t when compared with the expected values of t reveals that there exist significant difference on the extent of use of various information sources and channels among the villagers of the two villages. It is, therefore, observed that the villagers of the village far from town use both IP and NIP sources and channels of information to a greater extent than those of village near to town for

various health care purposes other than health care for self for which the villagers who live near to town use NIP sources and channels more than those villagers far from town. The result of the analysis also depicts that there is no significant difference on the use of NIP sources and channels relating to health care for family members and making use of health programs and services. Hence, it is concluded that villagers who live far from town use various information sources and channels to a greater extent than those villagers who live near to town in so far as health care purposes are concerned.

#### 4.3.16 Agricultural purposes

**Table 23: Village wise differential use of sources and channels of information for agricultural purposes in Nagaland.**

Purposes	Sources and channels	Mean Score 1	Mean Score 2	Standard deviation 1	Standard deviation 2	Computed t value
Making use of agricultural extension services	IP	2.43	2.54	0.99	1.09	0.39
	NIP	2.24	2.00	0.70	0.65	1.25
Adoption of modern agricultural technology	IP	2.53	2.58	1.03	1.09	0.17
	NIP	2.14	1.89	0.61	0.60	1.47
Farming activities	IP	1.57	1.68	0.98	0.94	0.43
	NIP	1.27	1.35	0.57	0.54	0.52
Agricultural credit facilities	IP	1.27	1.26	0.41	0.40	0.10
	NIP	1.04	1.12	0.11	0.26	1.87

As evident from the Table 23, there is only a negligible difference in the average scores obtained against the extent of use of both IP and NIP sources and channels for various agricultural purposes between the two villages. It is also observed that the extent the villagers use information from both IP and NIP sources and channels for agricultural extension services and adoption of modern agricultural technology far exceeds the extent they use for the purpose of farming activities and agricultural credit facilities.

For testing the statistical significance between the average scores obtained for the two villages for various agricultural purposes with respect to the extent of use of both the IP and NIP sources and channels, 't' test was applied and the computed values of t were compared with the expected values of t at 5 % level of significance. The comparison reveals that there is no significant difference on the use of IP and NIP sources and channels of information relating to agricultural purposes amongst the villagers of both the villages. It is also observed that IP sources and channels are used to a greater extent than that of NIP sources and channels by the villagers of both the villages. Therefore, it is concluded

that the villagers of both the villages use IP and NIP sources and channels of information to a more or less the same extent for various agricultural purposes.

#### 4.3.17 *Business purposes*

**Table 24: Village wise differential use of sources and channels of information for business purposes in Nagaland.**

Purposes	Sources and channels	Mean Score 1	Mean Score 2	Standard deviation 1	Standard deviation 2	Computed t value
Business operation	IP	1.29	1.49	0.85	0.94	0.82
	NIP	1.20	1.29	0.56	0.59	0.61
Business credit facilitie	IP	1.14	1.17	0.49	0.36	0.24
	NIP	1.06	1.11	0.24	0.27	0.72

As shown in the Table 24, the average scores of village near to town are slightly greater than those of village far from town with regard to the extent of use of both the IP and NIP information sources and channels for business purposes. It is also observed that the average scores obtained against IP sources and channels are greater than those of NIP sources and channels though the difference is marginal.

Using ‘t’ test, the statistical difference between the average scores obtained for the two villages with respect to the extent of use of both the IP and NIP sources and channels for business purposes was tested. The result of the test reveals that there is no significant difference in the use of IP and NIP sources and channels of information in so far as business purposes are concerned amongst the villagers of both the villages. Hence, it is concluded that the villagers of both the villages use IP and NIP sources and channels of information to a more or less the same extent for various business purposes.

#### 4.3.18 *General information*

**Table 25: Village wise differential use of sources and channels of information for general awareness in Nagaland.**

Purpose	Sources and channels	Mean Score	Mean Score	Standard deviation	Standard deviation	Computed t value
		1	2	1	2	
General information	IP	2.94	2.36	0.60	0.92	3.13*
	NIP	2.16	2.01	0.46	0.52	1.14

Table 25 depicts that the average scores of village far from town with regard to the extent of use of both IP and NIP sources and channels

of information for general information are greater than those of village near to town.

To determine the statistical difference between the average scores obtained for the two villages with respect to the extent of use of both the IP and NIP sources and channels of information for general information, 't' test was applied. The computed values of t when compared with the expected values of t reveals that there is significant difference with regard to use of IP sources and channels as far as general information is concerned. However, there is no significant difference regarding use of NIP sources and channels. This indicates that villagers who live far from town have access to information through IP sources and channels to a greater extent than those villagers who live near to town. It is also observed that villagers of both the villages use NIP sources and channels to an equal extent. Further, going by the average scores obtained against IP and NIP sources and channels, it can be concluded that the villagers of both the villages have more access to information than through NIP sources and channels as far as general information purpose is concerned.

#### ***4.3.19 Concluding remarks on the villages of Nagaland***

It is obvious from the result of the above analysis that there exist differences in information flow and access across distance variations as far as the villages in Nagaland are concerned. It is also indicated that villagers living far from town use IP sources and channels to a greater extent than the villagers living near to town when it comes to educational purposes. Whereas villagers living near to town use NIP sources and channels to a greater extent than those living far from town as far as educational purposes are concerned.

It is also revealed that the villagers living far from town have access to information through both IP and NIP sources and channels to a greater extent than those living near to town when it comes to health care and general information purposes. However, with regard to agricultural and business purposes, the villagers of both the villages are found to have access to information to an equal degree.

Hence, it is concluded that the hypothesis 'information flow and access vary across geographical variations' has been partially rejected.

**CHAPTER - V**

**CONCLUSION**

## **5.0 Introduction**

The emphasis of the present study is on information as a key resource in all the development processes and its role in improving the quality of human life. In the present-day information-intensive society, every individual needs to have access to information that is pertinent to all spheres of life. The role and value of information in modern society has been increasingly recognised, which has become apparent even in the rural settings. In fact, the need for information relating to all aspects of life is felt more acutely by the rural masses. It is, therefore, very crucial to provide the rural populace with appropriate information for individual as well as national progress. Against this backdrop, the present study was carried out to assess the volume of information flow and access in the rural areas of the two North Eastern states of Meghalaya and Nagaland.

### **5.1 Summary of Findings**

The findings of the study may be outlined as below:

- (i) Villagers in Meghalaya and Nagaland need more information pertaining to all aspects of life.

- (ii) The interpersonal (IP) communication sources and channels are more effective than the non-interpersonal (NIP) communication sources and channels in meeting the information needs of the villagers. It has been found that the villagers, irrespective of their socio-economic backgrounds, use IP sources and channels to a greater extent than NIP sources and channels. This has been primarily because of the ready availability and accessibility of the interpersonal sources and channels to the villagers. Thus, the hypothesis that 'interpersonal communication among members of a social system serves as an important source and channel of information flow and access' has been proved to be true.
- (iii) The non-interpersonal communication sources and channels considered in the study do not have constant touch with the villagers and are not readily available when needed. This is why information flow and access through these sources and channels have been inadequate in information dissemination to the villagers.
- (iv) It has also been found that for most of the purposes, the extent of use of various information sources and channels do not vary across socio-economic variables though it varies in certain cases. The

variations are indicated mostly in the extent of use of NIP sources and channels, which indicates that the villagers use NIP sources and channels only to a limited extent. Therefore, the hypothesis that 'use of information sources and channels vary across socio-economic variables' has been partially rejected.

- (v) There are no differences on information flow and access and the extent of use of various information sources and channels across geographical variations for most of the purposes though negligible differences exist for certain purposes. Therefore, the hypothesis that 'information flow and access vary across geographical variations' has been partially rejected.
- (vi) The total volume of information flow and access through both interpersonal and non-interpersonal sources and channels in the villages for various purposes are found to be very low.
- (vii) Poor communication infrastructure existing in the villages remains a major drawback in information flow and access in the villages.

## **5.2 Suggestions:**

The findings of the study have necessitated certain suggestions as follows:

- (i) It is suggested that there should be a Village Information Centre (VIC) in every village through which integrated and concerted information services can be provided to the villagers.
- (ii) The study also strongly suggests the need for an integrated rural information system established specifically for the purpose of providing information tailored to meet the requirements of rural masses of the North Eastern states. Such need can only be ignored at the cost of individual as well as national progress. In this regard, a model for the North Eastern Integrated Rural Information System (NEIRIS) has been proposed.

### ***5.2.1 Organisational Structure, Functions and Services of NEIRIS***

As shown in the Figure 1, the NEIRIS can be set up under the auspices of the North Eastern Council (NEC) which will be the apex of the hierarchy responsible for planning, coordinating and funding the system. The NEC would also take up the tasks of selectively collecting,

evaluating, organizing, consolidating and archiving all relevant data and information pertaining to developmental issues concerning rural areas that can be transmitted to the respective states. The concerned states can further repackage and transmit all data and relevant information to the concerned districts. Each district will identify each information package in terms of suitability, demand and specific allocations at each block within its jurisdiction. All prepackaged data and information made available at the block level will be reorganized, stored, publicized and disseminated through the Village Information Centre (VIC) which will assume direct contact with the end users – the villagers. This way, the rural masses can be provided with useful, timely, valuable and accurate information to ensure individual as well as national progress.

The Village Information Centres will report directly to the state coordinating body without going through various hierarchical levels whenever necessary, so that any breakdown in the system can be identified and corrective measures adopted accordingly. This will ensure transparency in the system. It is also crucial that the VIC be established on the lines of standard practices as that of any organisation involved with

the organisation and dissemination of information. A sound organizational, financial, and manpower infrastructure with greater emphasis on the village level can ensure optimization of available information resources.

The success of an integrated system such as the one proposed depends to a very great extent on the existence of an efficient and affordable telecommunication infrastructure connecting all the villages. Any appreciable success in this regard will contribute immensely towards achieving all round development, especially the much needed rural development.

### ***5.2.2 Manpower resources***

**NEC:** As the apex body responsible for the implementation of the proposed NEIRIS, the NEC must set up a separate division directly under the supervision and control of a senior administrator not below the rank of Joint Secretary. A minimum supporting staff strength of at least 10 trained and experienced information professionals would be required. An

Information Scientist or a Documentation Officer having at least 8 years of experience in the field may directly supervise the team.

**STATE:** At the state level, the Rural Development Information Centre (RDIC) may be headed by a Director having at least 12 to 15 years of experience as Information Scientist or Documentation Officer in handling information systems and services. An adequate supporting staff must be recruited from the information profession, with emphasis on prior experience in similar organisations.

**DISTRICT:** The work at the district level can be handled by an Information Scientist recruited from any information-based organisation. Sound knowledge of computer applications and at least 8 years of prior experience in handling information products and services at the block level may be insisted. The Information Scientist may be supported by Information Officers and Information Assistants as may be required.

**BLOCK:** An Information Officer of the rank of Class I Gazetted officer having at least 5 years of experience in a similar organisation or

related field experience as Information Assistant can handle the work at the block level. At least 5 supporting staff may need to be recruited at this level in order to ensure adequate coverage of all the villages under the block.

**VILLAGE:** An Information Assistant of the rank of a Class II gazetted officer with a minimum qualification of Master's Degree in Information Studies, Documentation Science, or Library and Information Science preferably with knowledge in computer applications may be recruited and posted at each village. At least two Field Assistants belonging to the respective villages and having a minimum qualification of Higher Secondary Certificate may be recruited to actually implement the field work at the grassroots level.

In order to ensure speedy disposal of projects and to also maintain transparency in all matters, the village information centre must also be authorized to report and put up proposals directly to the concerned wing of the state when warranted, so that bureaucratic red-tapism may also be avoided in the working of the system.

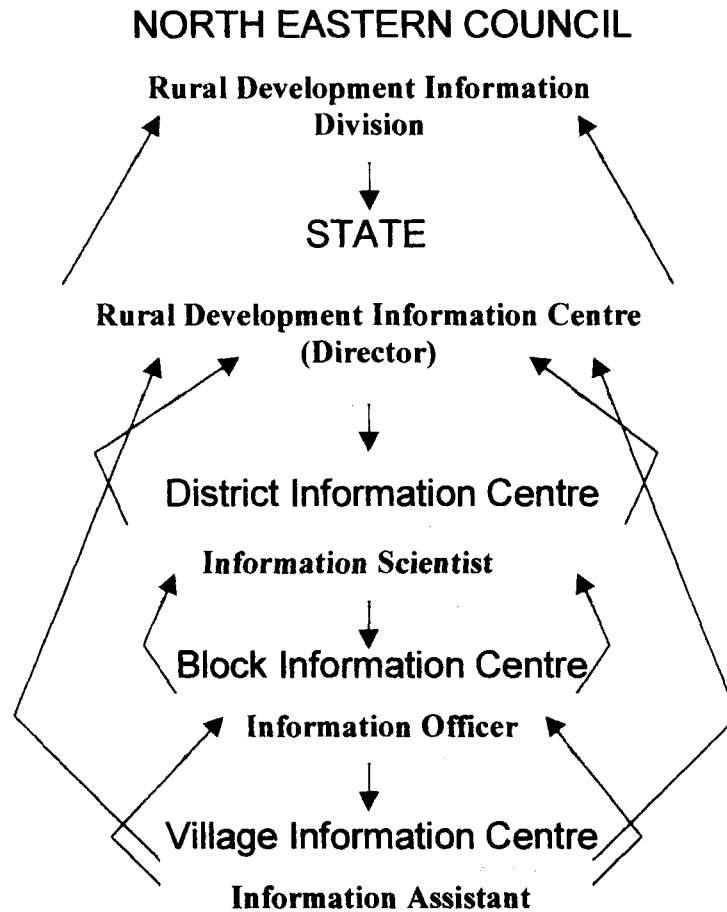
### **5.2.3 *Pay structure***

The salary and allowances payable to the personnel recruited by NEIRIS would be governed as per the pay and salary admissible in the case of all central government employees serving within the union of India.

### **5.3 Suggestions for further research**

The present study was an attempt to assess the volume of information flow and access in the villages covering a wide range of factors. It was an attempt at the macro level leaving a lot of rooms for further researches at the micro level.

## NORTH EASTERN INTEGRATED RURAL INFORMATION SYSTEM (NEIRIS)



↓ = Funds and Information Resources

↑ = Reports and Proposals

Fig. 1. Model for North Eastern Integrated Rural Information System (NEIRIS)

# **ANNEXURE**

## ANNEXURE-I

### Schedules

1. Name.....
2. Name of the village.....
4. Educational status: Tick (✓) the appropriate one  
(i) Illiterate                      (ii) Literate
5. Occupation.....
6. Total annual income (in rupees).....

### Use of various information sources and channels

#### ON EDUCATION:

The extent of use of various information sources and channels are to be indicated on the following scale: **Never (1), Rarely (2), Sometimes (3), Frequently (4), Always (5)**

7. **How often do you make use of the following sources of information for the education of your family members?**
  - (i) Teachers                      1    2    3    4    5
  - (ii) Educated persons            1    2    3    4    5
  - (iii) Church                      1    2    3    4    5
  - (iv) Mass Media  
(Radio, T.V., News papers, etc.) 1    2    3    4    5
  - (v) Relatives and friends            1    2    3    4    5
  - (vi) Non-Governmental Organisations  
(NGOs)                      1    2    3    4    5
  - (vii) Any other:
    - (a).....1    2    3    4    5
    - (b).....1    2    3    4    5
    - (c).....1    2    3    4    5

**8. How often do you consult the following sources of information on the benefits (specially employment opportunities) of education?**

(i)	Teachers	1	2	3	4	5
(ii)	Educated persons	1	2	3	4	5
(iii)	Church	1	2	3	4	5
(iv)	Mass Media (Radio, T.V., Newspapers, etc.)	1	2	3	4	5
(v)	Relatives and friends	1	2	3	4	5
(vi)	Non-Governmental Organisations (NGOs)	1	2	3	4	5
(vii)	Any other :					
	(a).....	1	2	3	4	5
	(b).....	1	2	3	4	5
	(c).....	1	2	3	4	5

**ON HEALTH**

**9. How often do you make use of the following information sources for your health care?**

(i)	Teachers	1	2	3	4	5
(ii)	Health workers (Medical Officers, Nurses, Mid Wives, etc.)	1	2	3	4	5
(iii)	Non-Governmental Organisations (NGOs)	1	2	3	4	5
(iv)	Mass Media (Radio, T.V., News papers, etc.)	1	2	3	4	5
(v)	Relatives and friends	1	2	3	4	5
(vi)	Educated persons	1	2	3	4	5
(vii)	Any other :					
	(a).....	1	2	3	4	5
	(b).....	1	2	3	4	5
	(c).....	1	2	3	4	5

**10. How often do you make use of the following information sources on family health and welfare?**

(i)	Teachers	1	2	3	4	5
(ii)	Health workers (Medical Officers, Nurses, Mid Wives, etc.)	1	2	3	4	5

- (iii) Non-Governmental Organisations(NGOs)
- (iv) Mass Media  
(Radio, T.V., News papers, etc.) 1 2 3 4 5
- (v) Relatives and friends 1 2 3 4 5
- (vi) Educated persons 1 2 3 4 5
- (vii) Any other :
  - (a)..... 1 2 3 4 5
  - (b)..... 1 2 3 4 5
  - (c)..... 1 2 3 4 5

**11. How often do you make use of the following information sources on various health services and programs (such as sanitation, immunization, rural periodic check-ups, free medical aids camps, family planning, etc.)?**

- (i) Teachers 1 2 3 4 5
- (ii) Health workers  
(Medical Officers, Nurses, Mid Wives, etc.) 1 2 3 4 5
- (iii) Non-Governmental Organisations  
(NGOs) 1 2 3 4 5
- (iv) Mass Media  
(Radio, T.V., News papers, etc.) 1 2 3 4 5
- (v) Relatives and friends 1 2 3 4 5
- (vi) Educated persons 1 2 3 4 5
- (vii) Any other :
  - (a)..... 1 2 3 4 5
  - (b)..... 1 2 3 4 5
  - (c)..... 1 2 3 4 5

**ON AGRICULTURE**

**12. How often do you make use of the following information sources for various agricultural extension services (such as multiple cropping, cultivation of commercial crops, farmers training in weeding and harvesting, paddy minikit, farm fairs, etc.)?**

- (i) Agricultural Extension Officers 1 2 3 4 5
- (ii) Village-level extension workers 1 2 3 4 5
- (iii) Mass Media  
(Radio, T.V., News papers, etc.) 1 2 3 4 5

- (iv) Teachers 1 2 3 4 5
- (v) Relatives and friends 1 2 3 4 5
- (vi) Co-farmers 1 2 3 4 5
- (vii) Any other :
  - (a)..... 1 2 3 4 5.
  - (b)..... 1 2 3 4 5.
  - (c)..... 1 2 3 4 5

**13. How often do you make use of the following information sources for adoption of modern agricultural techniques (which includes use of High Yielding Variety Seeds, pesticides and insecticides, chemical fertilizers, etc.) for cultivation?**

- (i) Agricultural Extension Officers 1 2 3 4 5
- (ii) Village-level extension workers 1 2 3 4 5
- (iii) Mass Media  
(Radio, T.V., News papers, etc.) 1 2 3 4 5
- (iv) Teachers 1 2 3 4 5
- (v) Relatives and friends 1 2 3 4 5
- (vi) Co-farmers
- (vii) Any other :
  - (a)..... 1 2 3 4 5
  - (b)..... 1 2 3 4 5
  - (c)..... 1 2 3 4 5

**14. How often do you make use of the following information sources for various farming activities (which includes poultry, piggery, dairy, pisciculture, etc.)?**

- (i) Veterinary Doctors 1 2 3 4 5
- (ii) Field Assistants 1 2 3 4 5
- (iii) Relatives and friends 1 2 3 4 5
- (iv) Co-farmers 1 2 3 4 5
- (v) Mass Media  
(Radio, T.V., News papers, etc.) 1 2 3 4 5
- (vi) Teachers 1 2 3 4 5
- (vii) Any other :
  - (a)..... 1 2 3 4 5
  - (b)..... 1 2 3 4 5
  - (c)..... 1 2 3 4 5

**15. How often do you make use of the following information sources for agricultural loans and credits?**

- |  |   |   |   |   |   |
|--|---|---|---|---|---|
| (i) Banks                                  | 1 | 2 | 3 | 4 | 5 |
| (ii) Non-Governmental Organisations (NGOs) | 1 | 2 | 3 | 4 | 5 |
| (iii) Co-operatives                        | 1 | 2 | 3 | 4 | 5 |
| (iv) Teachers                              | 1 | 2 | 3 | 4 | 5 |
| (v) Relatives and friends                  | 1 | 2 | 3 | 4 | 5 |
| (vi) Co-farmers                            | 1 | 2 | 3 | 4 | 5 |
| (vii) Any other :                          |   |   |   |   |   |
| (a).....                                   | 1 | 2 | 3 | 4 | 5 |
| (b).....                                   | 1 | 2 | 3 | 4 | 5 |
| (c).....                                   | 1 | 2 | 3 | 4 | 5 |

**ON BUSINESS**

**16. How often do you make use of the following information sources for your day-to-day business transactions?**

- |  |   |   |   |   |   |
|--|---|---|---|---|---|
| (i) Business/Sales Agents                          | 1 | 2 | 3 | 4 | 5 |
| (ii) Co-operatives                                 | 1 | 2 | 3 | 4 | 5 |
| (iii) Relatives and friends                        | 1 | 2 | 3 | 4 | 5 |
| (iv) Teachers                                      | 1 | 2 | 3 | 4 | 5 |
| (v) Mass Media<br>(Radio, T.V., News papers, etc.) | 1 | 2 | 3 | 4 | 5 |
| (vi) Co-traders                                    | 1 | 2 | 3 | 4 | 5 |
| (vii) Any other :                                  |   |   |   |   |   |
| (a).....   | 1 | 2 | 3 | 4 | 5 |
| (b).....   | 1 | 2 | 3 | 4 | 5 |
| (c).....   | 1 | 2 | 3 | 4 | 5 |

**17. How often do you make use of the following information sources for business loans and subsidies?**

- (i) Banks
- (ii) Co-operatives
- (iii) Non-Governmental Organisations (NGOs)
- (iv) Teachers
- (v) Relatives and friends
- (vi) Co-traders

- (vii) Any other :
  - (a).....
  - (b).....
  - (c).....

**GENERAL INFORMATION**

**18. How often do you make use of the following information sources to keep yourself up-to-date with the latest and adequate information on various aspects?**

- (i) Teachers      1      2      3      4      5
- (ii) Educated persons                      1      2      3      4      5
- (iii) Church      1      2      3      4      5
- (iv) Mass Media  
(Radio, T.V., News papers, etc.) 1      2      3      4      5
- (v) Relatives and friends                      1      2      3      4      5
- (vi) Non-Governmental Organisations  
(NGOs)      1      2      3      4      5
- (vii) Any other :
  - (a).....      1      2      3      4      5
  - (b).....      1      2      3      4      5
  - (c).....      1      2      3      4      5

## ANNEXURE- II

**Table 6.1: Literacy and information access score on interpersonal (IP) and non-interpersonal (NIP) sources and channels of information with regard to education for family members**

Purpose: Education for family members								
Scores	Literacy and IP				Literacy and NIP			
	Illiterate	Literate	Total	%	Illiterate	Literate	Total	%
Up to Q1	27	30	57	36.77	7	39	46	29.68
Q1-Q2	16	42	58	37.42	31	36	67	43.23
Q2-Q3	6	15	21	13.55	12	12	24	15.48
>Q3	8	11	19	12.26	7	11	18	11.61
<b>Total</b>	<b>57</b>	<b>98</b>	<b>155</b>	<b>100.00</b>	<b>57</b>	<b>98</b>	<b>155</b>	<b>100.00</b>
<b>%</b>	<b>36.77</b>	<b>63.23</b>	<b>100.00</b>		<b>36.77</b>	<b>63.23</b>	<b>100.00</b>	

Degrees of freedom= 3

**Table 6.2: Literacy and information access score on interpersonal (IP) and non-interpersonal (NIP) sources and channels of information with regard to education for employment benefits.**

Purpose: Education for employment benefits								
Scores	Literacy and IP				Literacy and NIP			
	Illiterate	Literate	Total	%	Illiterate	Literate	Total	%
Up to Q1	25	33	58	37.42	10	34	44	28.39
Q1-Q2	9	16	25	16.13	27	41	68	43.87
Q2-Q3	11	26	37	23.87	18	13	31	20.00
>Q3	12	23	35	22.58	2	10	12	7.74
<b>Total</b>	<b>57</b>	<b>98</b>	<b>155</b>	<b>100.00</b>	<b>57</b>	<b>98</b>	<b>155</b>	<b>100.00</b>
<b>%</b>	<b>36.77</b>	<b>63.23</b>	<b>100.00</b>		<b>36.77</b>	<b>63.23</b>	<b>100.00</b>	

Degrees of freedom=3

**Table 6.3: Occupation and information access score on interpersonal (IP) and non-interpersonal (NIP) sources and channels of information with regard to education for family members.**

Purpose: Education for family members										
Scores	Occupation and IP					Occupation and NIP				
	01	02	03	Total	%	01	02	03	Total	%
Up to Q1	8	6	43	57	36.77	8	9	29	46	29.68
Q1-Q2	16	9	33	58	37.42	19	14	34	67	43.23
Q2-Q3	6	8	7	21	13.55	5	5	14	24	15.48
>Q3	3	8	8	19	12.26	1	3	14	18	11.61
<b>Total</b>	<b>33</b>	<b>31</b>	<b>91</b>	<b>155</b>	<b>100.00</b>	<b>33</b>	<b>31</b>	<b>91</b>	<b>155</b>	<b>100.00</b>
<b>%</b>	<b>21.29</b>	<b>20.00</b>	<b>58.71</b>	<b>100.00</b>		<b>21.29</b>	<b>20.00</b>	<b>58.71</b>	<b>100.00</b>	

Degrees of freedom= 6

Note: 01=Government employees, 02= Business persons, 03= Farmers

**Table 6.4: Occupation and information access score on interpersonal (IP) and non-interpersonal (NIP) sources and channels of information with regard to education for employment benefits.**

<b>Purpose: Education for employment benefits</b>										
<b>Scores</b>	<b>Occupation and IP</b>					<b>Occupation and NIP</b>				
	<b>01</b>	<b>02</b>	<b>03</b>	<b>Total</b>	<b>%</b>	<b>01</b>	<b>02</b>	<b>03</b>	<b>Total</b>	<b>%</b>
<b>Up to Q1</b>	11	11	36	58	37.42	8	10	26	44	28.39
<b>Q1-Q2</b>	4	7	14	25	16.13	16	16	36	68	43.87
<b>Q2-Q3</b>	8	3	26	37	23.87	9	4	18	31	20.00
<b>&gt;Q3</b>	10	10	15	35	22.58	0	1	11	12	7.74
<b>Total</b>	33	31	91	155	100.00	33	31	91	155	100.00
<b>%</b>	21.29	20.00	58.71	100.00		21.29	20.00	58.71	100.00	

Degrees of freedom=6

**Table 6.5: Income and information access score on interpersonal (IP) and non-interpersonal (NIP) sources and channels of information with regard to education for family members.**

<b>Purpose: Education for family members</b>										
<b>Scores</b>	<b>Income and IP</b>					<b>Income and NIP</b>				
	<b>L</b>	<b>M</b>	<b>H</b>	<b>Total</b>	<b>%</b>	<b>L</b>	<b>M</b>	<b>H</b>	<b>Total</b>	<b>%</b>
<b>Up to Q1</b>	30	25	2	57	36.77	14	27	5	46	29.68
<b>Q1-Q2</b>	28	27	3	58	37.42	42	24	1	67	43.23
<b>Q2-Q3</b>	12	9	0	21	13.55	14	10	0	24	15.48
<b>&gt;Q3</b>	14	4	1	19	12.26	14	4	0	18	11.61
<b>Total</b>	84	65	6	155	100.00	84	65	6	155	100.00
<b>%</b>	54.19	41.94	3.87	100.00		54.19	41.94	3.87	100.00	

Degrees of freedom=6

Note: L = Low (i.e., less than Rs. 20,000 per year) M = Middle (i.e., Rs. 20,000 to 50,000 per year)  
H = High (i.e., Rs. 50, 000 and above per year)

**Table 6.6: Income and information access score on interpersonal (IP) and non-interpersonal (NIP) sources and channels of information with regard to education for employment benefits.**

<b>Purpose: Education for employment benefits</b>										
<b>Scores</b>	<b>Income and IP</b>					<b>Income and NIP</b>				
	<b>L</b>	<b>M</b>	<b>H</b>	<b>Total</b>	<b>%</b>	<b>L</b>	<b>M</b>	<b>H</b>	<b>Total</b>	<b>%</b>
<b>Up to Q1</b>	30	25	2	57	36.77	14	27	5	46	29.68
<b>Q1-Q2</b>	28	27	3	58	37.42	42	24	1	67	43.23
<b>Q2-Q3</b>	12	9	0	21	13.55	14	10	0	24	15.48
<b>&gt;Q3</b>	14	4	1	19	12.26	14	4	0	18	11.61
<b>Total</b>	84	65	6	155	100.00	84	65	6	155	100.00
<b>%</b>	54.19	41.94	3.87	100.00		54.19	41.94	3.87	100.00	

Degrees of freedom=6

**Table 7.1: Literacy and information access score on interpersonal (IP) and non-interpersonal (NIP) sources and channels of information with regard to health care for self.**

Purpose: Health care for self								
Scores	Literacy and IP				Literacy and NIP			
	Illiterate	Literate	Total	%	Illiterate	Literate	Total	%
Up to Q1	18	30	48	30.97	11	42	53	34.19
Q1-Q2	17	47	64	41.29	26	34	60	38.71
Q2-Q3	18	9	27	17.42	8	9	17	10.97
>Q3	4	12	16	10.32	12	13	25	16.13
Total	57	98	155	100.00	57	98	155	100.00
%	36.77	63.23	100.00	64.52	36.77	63.23	100.00	64.52

Degrees of freedom=3

**Table 7.2: Literacy and information access score on interpersonal (IP) and non-interpersonal (NIP) sources and channels of information with regard to health care for family members.**

Purpose: Health care for family members								
Scores	Literacy and IP				Literacy and NIP			
	Illiterate	Literate	Total	%	Illiterate	Literate	Total	%
Up to Q1	14	32	46	29.68	28	49	77	49.68
Q1-Q2	21	28	49	31.61	16	31	47	30.32
Q2-Q3	9	22	31	20.00	13	18	31	20.00
>Q3	13	16	29	18.71	0	0	0	0.0
Total	57	98	155	100.00	57	98	155	100.00
%	36.77	63.23	100.00		36.77	63.23	100.00	

Degrees of freedom=3

**Table 7.3: Literacy and information access score on interpersonal (IP) and non-interpersonal (NIP) sources and channels of information with regard to making use of various health programs and services.**

Purpose: Making use of various health programs and services								
Scores	Literacy and IP				Literacy and NIP			
	Illiterate	Literate	Total	%	Illiterate	Literate	Total	%
Up to Q1	21	36	57	36.77	15	34	49	31.61
Q1-Q2	10	17	27	17.42	13	18	31	20.00
Q2-Q3	16	38	54	34.84	15	29	44	28.39
>Q3	10	7	17	10.97	14	17	31	20.00
Total	57	98	155	100.00	57	98	155	100.00
%	36.77	63.23	100.00	64.52	36.77	63.23	100.00	

Degrees of freedom=3

**Table 7.4: Occupation and information access score on interpersonal (IP) and non-interpersonal (NIP) sources and channels of information with regard to Health care for self.**

<b>Purpose: Health care for self</b>										
<b>Scores</b>	<b>Occupation and IP</b>					<b>Occupation and NIP</b>				
	<b>01</b>	<b>02</b>	<b>03</b>	<b>Total</b>	<b>%</b>	<b>01</b>	<b>02</b>	<b>03</b>	<b>Total</b>	<b>%</b>
<b>Up to Q1</b>	23	23	2	48	30.97	20	30	3	53	34.19
<b>Q1-Q2</b>	29	32	3	64	41.29	36	23	1	60	38.71
<b>Q2-Q3</b>	24	3	0	27	17.42	10	5	2	17	10.97
<b>&gt;Q3</b>	8	7	1	16	10.32	18	7	0	25	16.13
<b>Total</b>	84	65	6	155	100.00	84	65	6	155	100.00
<b>%</b>	54.19	41.94	3.87	100.00		54.19	41.94	3.87	100.00	

Degrees of freedom=6

**Table 7.5: Occupation and information access score on interpersonal (IP) and non-interpersonal (NIP) sources and channels of information with regard to health care for family members.**

<b>Purpose: Health care for family members</b>										
<b>Scores</b>	<b>Occupation and IP</b>					<b>Occupation and NIP</b>				
	<b>01</b>	<b>02</b>	<b>03</b>	<b>Total</b>	<b>%</b>	<b>01</b>	<b>02</b>	<b>03</b>	<b>Total</b>	<b>%</b>
<b>Up to Q1</b>	9	8	29	46	29.68	18	17	42	77	49.68
<b>Q1-Q2</b>	12	7	30	49	31.61	10	11	26	47	30.32
<b>Q2-Q3</b>	8	4	19	31	20.00	5	3	23	31	20.00
<b>&gt;Q3</b>	4	12	13	29	18.71	0	0	0	0	0.00
<b>Total</b>	33	31	91	155	100.00	33	31	91	155	100.00
<b>%</b>	21.29	20.00	58.71	100.00	0.00	21.29	20.00	58.71	100.00	

Degrees of freedom=6

**Table 7.6: Occupation and information access score on interpersonal (IP) and non-interpersonal (NIP) sources and channels of information with regard to making use of various health programs and services.**

<b>Purpose: Making use of various health programs and services</b>										
<b>Scores</b>	<b>Occupation and IP</b>					<b>Occupation and NIP</b>				
	<b>01</b>	<b>02</b>	<b>03</b>	<b>Total</b>	<b>%</b>	<b>01</b>	<b>02</b>	<b>03</b>	<b>Total</b>	<b>%</b>
<b>Up to Q1</b>	9	8	29	46	29.68	18	17	42	77	49.68
<b>Q1-Q2</b>	12	7	30	49	31.61	10	11	26	47	30.32
<b>Q2-Q3</b>	8	4	19	31	20.00	5	3	23	31	20.00
<b>&gt;Q3</b>	4	12	13	29	18.71	0	0	0	0	0.00
<b>Total</b>	33	31	91	155	100.00	33	31	91	155	100.00
<b>%</b>	21.29	20.00	58.71	100.00	0.00	21.29	20.00	58.71	100.00	

Degrees of freedom=6

**Table 7.7: Income and information access score on interpersonal (IP) and non-interpersonal (NIP) sources and channels of information with regard to health care for self.**

<b>Purpose: Health care for self</b>										
<b>Scores</b>	<b>Income and IP</b>					<b>Income and NIP</b>				
	<b>L</b>	<b>M</b>	<b>H</b>	<b>Total</b>	<b>%</b>	<b>L</b>	<b>M</b>	<b>H</b>	<b>Total</b>	<b>%</b>
<b>Up to Q1</b>	23	23	2	48	30.97	20	30	3	53	34.19
<b>Q1-Q2</b>	29	32	3	64	41.29	36	23	1	60	38.71
<b>Q2-Q3</b>	24	3	0	27	17.42	10	5	2	17	10.97
<b>&gt;Q3</b>	8	7	1	16	10.32	18	7	0	25	16.13
<b>Total</b>	84	65	6	155	100.00	84	65	6	155	100.00
<b>%</b>	54.19	41.94	3.87	100.00		54.19	41.94	3.87	100.00	

Degrees of freedom=6

**Table 7.8: Income and information access score on interpersonal (IP) and non-interpersonal (NIP) sources and channels of information with regard to health care for family members.**

<b>Purpose: Health care for family member</b>										
<b>Scores</b>	<b>Income and IP</b>					<b>Income and NIP</b>				
	<b>L</b>	<b>M</b>	<b>H</b>	<b>Total</b>	<b>%</b>	<b>L</b>	<b>M</b>	<b>H</b>	<b>Total</b>	<b>%</b>
<b>Up to Q1</b>	19	24	3	46	29.68	28	32	3	63	40.65
<b>Q1-Q2</b>	30	18	1	49	31.61	20	16	1	37	23.87
<b>Q2-Q3</b>	15	15	1	31	20.00	17	8	2	27	17.42
<b>&gt;Q3</b>	20	8	1	29	18.71	19	9	0	28	18.06
<b>Total</b>	84	65	6	155	100.00	84	65	6	155	100.00
<b>%</b>	54.19	41.94	3.87	100.00		54.19	41.94	3.87	100.00	

Degrees of freedom=6

**Table 7.9: Income and information access score on interpersonal (IP) and non-interpersonal (NIP) sources and channels of information with regard to making use of various health programs and services.**

<b>Purpose: Making use of various health programs and services</b>										
<b>Scores</b>	<b>Income and IP</b>					<b>Income and NIP</b>				
	<b>L</b>	<b>M</b>	<b>H</b>	<b>Total</b>	<b>%</b>	<b>L</b>	<b>M</b>	<b>H</b>	<b>Total</b>	<b>%</b>
<b>Up to Q1</b>	29	26	2	57	36.77	21	25	3	49	31.61
<b>Q1-Q2</b>	15	10	2	27	17.42	19	11	1	31	20.00
<b>Q2-Q3</b>	27	25	2	54	34.84	23	20	1	44	28.39
<b>&gt;Q3</b>	13	4	0	17	10.97	21	9	1	31	20.00
<b>Total</b>	84	65	6	155	100.00	84	65	6	155	100.00
<b>%</b>	54.19	41.94	3.87	100.00		54.19	41.94	3.87	100.00	

Degrees of freedom=6

**Table 8.1: Literacy and information access score on interpersonal (IP) and non-interpersonal (NIP) sources and channels of information with regard to agricultural extension services.**

Purpose: Agricultural extension services								
Scores	Literacy and IP				Literacy and NIP			
	Illiterate	Literate	Total	%	Illiterate	Literate	Total	%
Up to Q1	11	47	58	37.42	9	47	56	36.13
Q1-Q2	11	14	25	16.13	18	17	35	22.58
Q2-Q3	21	23	44	28.39	23	26	49	31.61
>Q3	14	14	28	18.06	7	8	15	9.68
Total	57	98	155	100.00	57	98	155	100.00
%	36.77	63.23	100.00		36.77	63.23	100.00	

Degrees of freedom=3

**Table 8.2: Literacy and information access score on interpersonal (IP) and non-interpersonal (NIP) sources and channels of information with regard to adoption of modern agricultural technology.**

Purpose: Adoption of modern agricultural technology								
Scores	Literacy and IP				Literacy and NIP			
	Illiterate	Literate	Total	%	Illiterate	Literate	Total	%
Up to Q1	11	47	58	37.42	9	47	56	36.13
Q1-Q2	27	30	57	36.77	29	26	55	35.48
Q2-Q3	6	0	6	3.87	19	25	44	28.39
>Q3	13	21	34	21.94	0	0	0	0.00
Total	57	98	155	100.00	57	98	155	100.00
%	36.77	63.23	100.00		36.77	63.23	100.00	

Degrees of freedom=3

**Table 8.3: Literacy and information access score on interpersonal (IP) and non-interpersonal (NIP) sources and channels of information with regard to farming activities.**

Purpose: Farming activities								
Scores	Literacy and IP				Literacy and NIP			
	Illiterate	Literate	Total	%	Illiterate	Literate	Total	%
Up to Q1	38	48	86	55.48	40	57	97	62.58
Q1-Q2	7	24	31	20.00	5	24	29	18.71
Q2-Q3	12	26	38	24.52	12	17	29	18.71
>Q3				0.00				0.0
Total	57	98	155	100.00	57	98	155	100.00
%	36.77	63.23	100.00	64.52	36.77	63.23	100.00	

Degrees of freedom=3

**Table 8.4: Literacy and information access score on interpersonal (IP) and non-interpersonal (NIP) sources and channels of information with regard to agricultural credit facilities.**

Purpose: Agricultural credit facilities								
Scores	Literacy and IP				Literacy and NIP			
	Illiterate	Literate	Total	%	Illiterate	Literate	Total	%
Up to Q1	30	76	106	68.39	48	84	132	85.16
Q1-Q2	12	12	24	15.48	9	14	23	14.84
Q2-Q3	15	10	25	16.13	0	0	0	0.0
>Q3	0	0	0	0.0	0	0	0	0.0
<b>Total</b>	<b>57</b>	<b>98</b>	<b>155</b>	<b>100.00</b>	<b>57</b>	<b>98</b>	<b>155</b>	<b>100.00</b>
<b>%</b>	<b>36.77</b>	<b>63.23</b>	<b>100.00</b>		<b>36.77</b>	<b>63.23</b>	<b>100.00</b>	

Degrees of freedom=3

**Table 8.5: Occupation and information access score on interpersonal (IP) and non-interpersonal (NIP) sources and channels of information with regard to agricultural extension services.**

Purpose: Agricultural extension services										
Scores	Occupation and IP					Occupation and NIP				
	01	02	03	Total	%	01	02	03	Total	%
Up to Q1	18	17	23	58	37.42	18	16	22	56	36.13
Q1-Q2	5	5	15	25	16.13	5	6	24	35	22.58
Q2-Q3	7	9	28	44	28.39	6	6	37	49	31.61
>Q3	3	0	25	28	18.06	4	3	8	15	9.68
<b>Total</b>	<b>33</b>	<b>31</b>	<b>91</b>	<b>155</b>	<b>100.00</b>	<b>33</b>	<b>31</b>	<b>91</b>	<b>155</b>	<b>100.00</b>
<b>%</b>	<b>21.29</b>	<b>20.00</b>	<b>58.71</b>	<b>100.00</b>		<b>21.29</b>	<b>20.00</b>	<b>58.71</b>	<b>100.00</b>	

Degrees of freedom=6

**Table 8.6: Occupation and information access score on interpersonal (IP) and non-interpersonal (NIP) sources and channels of information with regard to adoption of modern agricultural technology.**

Purpose: Adoption of modern agricultural technology										
Scores	Occupation and IP					Occupation and NIP				
	01	02	03	Total	%	01	02	03	Total	%
Up to Q1	18	17	23	58	37.42	18	16	22	56	36.13
Q1-Q2	9	10	38	57	36.77	7	7	41	55	35.48
Q2-Q3	3	3	0	6	3.87	8	8	28	44	28.39
>Q3	3	1	30	34	21.94	0	0	0	0	0.00
<b>Total</b>	<b>33</b>	<b>31</b>	<b>91</b>	<b>155</b>	<b>100.00</b>	<b>33</b>	<b>31</b>	<b>91</b>	<b>155</b>	<b>100.00</b>
<b>%</b>	<b>21.29</b>	<b>20.00</b>	<b>58.71</b>	<b>100.00</b>		<b>21.29</b>	<b>20.00</b>	<b>58.71</b>	<b>100.00</b>	

Degrees of freedom=6

**Table 8.7: Occupation and information access score on interpersonal (IP) and non-interpersonal (NIP) sources and channels of information with regard to farming activities.**

<b>Purpose: Farming activities</b>										
<b>Scores</b>	<b>Occupation and IP</b>					<b>Occupation and NIP</b>				
	<b>01</b>	<b>02</b>	<b>03</b>	<b>Total</b>	<b>%</b>	<b>01</b>	<b>02</b>	<b>03</b>	<b>Total</b>	<b>%</b>
<b>Up to Q1</b>	20	17	49	77	49.68	22	20	55	77	49.68
<b>Q1-Q2</b>	3	8	20	47	30.32	4	8	17	47	30.32
<b>Q2-Q3</b>	10	6	22	31	20.00	7	3	19	31	20.00
<b>&gt;Q3</b>	0	0	0	0	0.00	0	0	0	0	0
<b>Total</b>	33	31	91	155	100.00	33	31	91	155	100.00
<b>%</b>	21.29	20.00	58.71	100.00		21.29	20.00	58.71	100.00	

Degrees of freedom=6

**Table 8.8: Occupation and information access score on interpersonal (IP) and non-interpersonal (NIP) sources and channels of information with regard to agricultural credit facilities.**

<b>Purpose: Agricultural credit facilities</b>										
<b>Scores</b>	<b>Occupation and IP</b>					<b>Occupation and NIP</b>				
	<b>01</b>	<b>02</b>	<b>03</b>	<b>Total</b>	<b>%</b>	<b>01</b>	<b>02</b>	<b>03</b>	<b>Total</b>	<b>%</b>
<b>Up to Q1</b>	24	23	59	77	49.68	29	29	74	132	85.16
<b>Q1-Q2</b>	4	4	16	47	30.32	4	2	17	23	14.84
<b>Q2-Q3</b>	5	4	16	31	20.00	0	0	0	0	0.0
<b>&gt;Q3</b>	0	0	0	0	0.0	0	0	0	0	0.0
<b>Total</b>	33	31	91	155	100.00	33	31	91	155	100.00
<b>%</b>	21.29	20.00	58.71	100.00		21.29	20.00	58.71	100.00	

Degrees of freedom=6

**Table 8.9: Income and information access score on interpersonal (IP) and non-interpersonal (NIP) sources and channels of information with regard to agricultural extension services.**

<b>Purpose: Agricultural extension services</b>										
<b>Scores</b>	<b>Income and IP</b>					<b>Income and NIP</b>				
	<b>L</b>	<b>M</b>	<b>H</b>	<b>Total</b>	<b>%</b>	<b>L</b>	<b>M</b>	<b>H</b>	<b>Total</b>	<b>%</b>
<b>Up to Q1</b>	28	28	2	58	37.42	26	28	2	56	36.13
<b>Q1-Q2</b>	14	11	0	25	16.13	20	14	1	35	22.58
<b>Q2-Q3</b>	27	14	3	44	28.39	32	15	2	49	31.61
<b>&gt;Q3</b>	15	12	1	28	18.06	6	8	1	15	9.68
<b>Total</b>	84	65	6	155	100.00	84	65	6	155	100.00
<b>%</b>	54.19	41.94	3.87	100.00		54.19	41.94	3.87	100.00	

Degrees of freedom=6

**Table 8.10: Income and information access score on interpersonal (IP) and non-interpersonal (NIP) sources and channels of information with regard to adoption of modern agricultural technology.**

<b>Purpose: Adoption of modern agricultural technology</b>										
<b>Scores</b>	<b>Income and IP</b>					<b>Income and NIP</b>				
	<b>L</b>	<b>M</b>	<b>H</b>	<b>Total</b>	<b>%</b>	<b>L</b>	<b>M</b>	<b>H</b>	<b>Total</b>	<b>%</b>
<b>Up to Q1</b>	28	28	2	58	37.42	26	30	0	56	36.13
<b>Q1-Q2</b>	35	21	1	57	36.77	36	18	1	55	35.48
<b>Q2-Q3</b>	6	0	0	6	3.87	22	19	3	44	28.39
<b>&gt;Q3</b>	15	16	3	34	21.94	0	0	0	0	0.00
<b>Total</b>	84	65	6	155	100.00	84	67	4	155	100.00
<b>%</b>	54.19	41.94	3.87	100.00		54.19	43.23	2.58	100.00	

Degrees of freedom=6

**Table 8.11: Income and information access score on interpersonal (IP) and non-interpersonal (NIP) sources and channels of information with regard to farming activities.**

<b>Purpose: Farming activities</b>										
<b>Scores</b>	<b>Income and IP</b>					<b>Income and NIP</b>				
	<b>L</b>	<b>M</b>	<b>H</b>	<b>Total</b>	<b>%</b>	<b>L</b>	<b>M</b>	<b>H</b>	<b>Total</b>	<b>%</b>
<b>Up to Q1</b>	50	34	2	77	49.68	56	37	4	77	49.68
<b>Q1-Q2</b>	14	16	1	47	30.32	9	18	2	47	30.32
<b>Q2-Q3</b>	20	15	3	31	20.00	19	10	0	31	20.00
<b>&gt;Q3</b>	0	0	0	0	0.00	0	0	0	0	0.00
<b>Total</b>	84	65	6	155	100.00	84	65	6	155	100.00
<b>%</b>	54.19	41.94	3.87	100.00		54.19	41.94	3.87	100.00	

Degrees of freedom=6

**Table 8.12: Income and information access score on interpersonal (IP) and non-interpersonal (NIP) sources and channels of information with regard to agricultural credit facilities.**

<b>Purpose: Agricultural credit facilities</b>										
<b>Scores</b>	<b>Income and IP</b>					<b>Income and NIP</b>				
	<b>L</b>	<b>M</b>	<b>H</b>	<b>Total</b>	<b>%</b>	<b>L</b>	<b>M</b>	<b>H</b>	<b>Total</b>	<b>%</b>
<b>Up to Q1</b>	53	48	5	77	49.68	70	56	6	132	85.16
<b>Q1-Q2</b>	12	11	1	47	30.32	14	9	0	23	14.84
<b>Q2-Q3</b>	19	6	0	31	20.00	0	0	0	0	0.00
<b>&gt;Q3</b>	0	0	0	0	0.00	0	0	0	0	0.00
<b>Total</b>	84	65	6	155	100.00	84	65	6	155	100.00
<b>%</b>	54.19	41.94	3.87	100.00		54.19	41.94	3.87	100.00	

Degrees of freedom=6

**Table 9.1: Literacy and information access score on interpersonal (IP) and non-interpersonal (NIP) sources and channels of information with regard to business operations.**

Purpose: Business operations								
Scores	Literacy and IP				Literacy and NIP			
	Illiterate	Literate	Total	%	Illiterate	Literate	Total	%
Up to Q1	47	75	122	78.71	47	75	122	78.71
Q1-Q2	10	23	33	21.29	10	23	33	21.29
Q2-Q3	0	0	0	0.0	0	0	0	0.0
>Q3	0	0	0	0.0	0	0	0	0.0
Total	57	98	155	100.00	57	98	155	100.00
%	36.77	63.23	100.00		36.77	63.23	100.00	

Degrees of freedom=3

**Table 9.2: Literacy and information access score on interpersonal (IP) and non-interpersonal (NIP) sources and channels of information with regard to business credit facilities.**

Purpose: Business credit facilities								
Scores	Literacy and IP				Literacy and NIP			
	Illiterate	Literate	Total	%	Illiterate	Literate	Total	%
Up to Q1	48	80	128	82.58	51	80	131	84.52
Q1-Q2	9	18	27	17.42	6	18	24	15.48
Q2-Q3	0	0	0	0.0	0	0	0	0.0
>Q3	0	0	0	0.0	0	0	0	0.0
Total	57	98	155	100.00	57	98	155	100.00
%	36.77	63.23	100.00		36.77	63.23	100.00	

Degrees of freedom=3

**Table 9.3. : Occupation and information access score on interpersonal (IP) and non-interpersonal (NIP) sources and channels of information with regard to business operations.**

Purpose: Business operations										
Scores	Occupation and IP					Occupation and NIP				
	01	02	03	Total	%	01	02	03	Total	%
Up to Q1	16	22	84	122	78.71	16	23	83	122	78.71
Q1-Q2	17	9	7	33	21.29	17	8	8	33	21.29
Q2-Q3	0	0	0	0	0.0	0	0	0	0	0.0
>Q3	0	0	0	0	0.0	0	0	0	0	0.0
Total	33	31	91	155	100.00	33	31	91	155	100.00
%	21.29	20.00	58.71	100.00		21.29	20.00	58.71	100.00	

Degrees of freedom=6

**Table 9.4: Occupation and information access score on interpersonal (IP) and non-interpersonal (NIP) sources and channels of information with regard to business credit facilities.**

Purpose: Business credit facilities										
Scores	Occupation and IP					Occupation and NIP				
	01	02	03	Total	%	01	02	03	Total	%
Up to Q1	19	24	85	128	82.58	19	25	87	131	84.52
Q1-Q2	14	7	6	27	17.42	14	6	4	24	15.48
Q2-Q3	0	0	0	0	0.0	0	0	0	0	0.0
>Q3	0	0	0	0	0.0	0	0	0	0	0.0
<b>Total</b>	<b>33</b>	<b>31</b>	<b>91</b>	<b>155</b>	<b>100.00</b>	<b>33</b>	<b>31</b>	<b>91</b>	<b>155</b>	<b>100.00</b>
<b>%</b>	<b>21.29</b>	<b>20.00</b>	<b>58.71</b>	<b>100.00</b>		<b>21.29</b>	<b>20.00</b>	<b>58.71</b>	<b>100.00</b>	

Degrees of freedom=6

**Table 9.5: Income and information access score on interpersonal (IP) and non-interpersonal (NIP) sources and channels of information with regard to business operations.**

Purpose: Business operations										
Scores	Income and IP					Income and NIP				
	L	M	H	Total	%	L	M	H	Total	%
Up to Q1	63	53	6	122	78.71	64	52	6	122	78.71
Q1-Q2	21	12	0	33	21.29	20	13	0	33	21.29
Q2-Q3	0	0	0	0	0.00	0	0	0	0	0.00
>Q3	0	0	0	0	0.00	0	0	0	0	0.00
<b>Total</b>	<b>84</b>	<b>65</b>	<b>6</b>	<b>155</b>	<b>100.00</b>	<b>84</b>	<b>65</b>	<b>6</b>	<b>155</b>	<b>100.00</b>
<b>%</b>	<b>54.19</b>	<b>41.94</b>	<b>3.87</b>	<b>100.00</b>		<b>54.19</b>	<b>41.94</b>	<b>3.87</b>	<b>100.00</b>	

Degrees of freedom=6

**Table 9.6: Income and information access score on interpersonal (IP) and non-interpersonal (NIP) sources and channels of information with regard to business credit facilities.**

Purpose: Business credit facilities										
Scores	Income and IP					Income and NIP				
	L	M	H	Total	%	L	M	H	Total	%
Up to Q1	65	57	6	128	82.58	69	56	6	131	84.52
Q1-Q2	19	8	0	27	17.42	15	9	0	24	15.48
Q2-Q3	0	0	0	0	0.00	0	0	0	0	0.00
>Q3	0	0	0	0	0.00	0	0	0	0	0.00
<b>Total</b>	<b>84</b>	<b>65</b>	<b>6</b>	<b>155</b>	<b>100.00</b>	<b>84</b>	<b>65</b>	<b>6</b>	<b>155</b>	<b>100.00</b>
<b>%</b>	<b>54.19</b>	<b>41.94</b>	<b>3.87</b>	<b>100.00</b>		<b>54.19</b>	<b>41.94</b>	<b>3.87</b>	<b>100.00</b>	

Degrees of freedom=6

**Table 10.1: Literacy and information access score on interpersonal (IP) and non-interpersonal (NIP) sources and channels of information with regard to general information.**

Purpose: General information								
Scores	Literacy and IP				Literacy and NIP			
	Illiterate	Literate	Total	%	Illiterate	Literate	Total	%
Up to Q1	24	28	52	33.55	19	61	80	51.61
Q1-Q2	8	22	30	19.35	18	20	38	24.52
Q2-Q3	14	32	46	29.68	20	17	37	23.87
>Q3	11	16	27	17.42	0	0	0	0.0
Total	57	98	155	100.00	57	98	155	100.00
%	36.77	63.23	100.00		36.77	63.23	100.00	

Degrees of freedom=3

**Table 10.2: Occupation and information access score on interpersonal (IP) and non-interpersonal (NIP) sources and channels of information with regard to general information.**

Purpose: General information										
Scores	Occupation and IP					Occupation and NIP				
	01	02	03	Total	%	01	02	03	Total	%
Up to Q1	9	9	34	52	33.55	18	13	49	77	49.68
Q1-Q2	11	8	11	30	19.35	8	10	20	47	30.32
Q2-Q3	7	10	29	46	29.68	7	8	22	31	20.00
>Q3	6	4	17	27	17.42	0	0	0	0	0.00
Total	33	31	91	155	100.00	33	31	91	155	100.00
%	21.29	20.00	58.71	100.00		21.29	20.00	58.71	100.00	

Degrees of freedom=6

**Table 10.3: Income and information access score on interpersonal (IP) and non-interpersonal (NIP) sources and channels of information concerned with general information.**

Purpose: General information										
Scores	Income and IP					Income and NIP				
	L	M	H	Total	%	L	M	H	Total	%
Up to Q1	34	16	2	52	33.55	30	45	5	77	49.68
Q1-Q2	13	16	1	30	19.35	27	11	0	47	30.32
Q2-Q3	21	23	2	46	29.68	27	9	1	31	20.00
>Q3	16	10	1	27	17.42	0	0	0	0	0.00
Total	84	65	6	155	100.00	84	65	6	155	100.00
%	54.19	41.94	3.87	100.00		54.19	41.94	3.87	100.00	

Degrees of freedom=6

## BIO-DATA

**Name**                    **Moses M. Naga**

**Date of Birth**        **02-02-1966**

**Occupation**         **Lecturer, Department of Library and Information Science**

**Address**              **Department of Library and Information Science  
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**Marital Status**    **Married**

### **Educational Qualifications**

<b>Matric</b>	<b>1982</b>	<b>MBSE, Manipur</b>	<b>45%</b>
<b>PU</b>	<b>1985</b>	<b>NEHU, Shillong</b>	<b>58%</b>
<b>BA</b>	<b>1988</b>	<b>NEHU, Shillong</b>	<b>51%</b>
<b>MLISC</b>	<b>1990</b>	<b>NEHU, Shillong</b>	<b>61%</b>

**Other Qualifications**    **Cleared JRF NET-UGC**

### **Publications**

**Published 2 articles in National and International Seminar Proceedings**