A research problem is selected and segregated into sub problems. Objectives are delineated and justified. Research methods are selected and validated. Parameters and indicators are chosen. Data is clearly delineated. Research questions are raised. Limitations and delimitations are specified. Data base is constructed. Methods and techniques of research to follow are given. Data constraints and approach to data analysis is mentioned. Rationality behind selecting study area is given together with an account of the study area. Questions to be addressed are selected. Operational definitions and conceptual frameworks of certain terms are given. The concepts are used as building blocks to meet research objective for lack of a priori model. Idea about the area, literature survey to have firm ideas on research topic and ideas have been given. "Man in environment" is relatively recent concept. Prior to 1980's man is to be alienated from physical environment and its component. Basis for the previous notion is that man has a culture which is distinct from the basic instincts of other living components of environment. In resource studies quantification of resource is very important. But population resource is differentiated on the basis of quality. Population resource is identified on the basis of customs, rituals, norms, traits, morals, cultural attainment and ability to perceive or exploit resources. Number factor is important but quality of population can not be neglected.
CHAPTER - 1

Research problem and related issues

1.1 Problem

Problem selected for this PhD dissertation is “Socio geographical Perspectives of Environmental resources and Hazards in Bishnupur and Sonamukhi Police Stations, Bankura District, West Bengal”.

1.2 Rationale

Since 1970 environment related issues have become significant at regional, national and global levels. Different disciplines at academic level are conducting research on various aspects of environment. Geographers are also observing, describing and explaining different facets of environment from spatial perspective.

But from the very conception of the subject geography has given emphasis on the resource study. At the initial stage ‘geography’ was divided into two; physical geography and human geography. Human geography has explored the patterns of human adjustment or interaction with the physical world in different physical background. From the hunting gathering stage, human beings have spent time to find out resources for their sustenance. Initially this search for resources was restricted to the physical world. In a contemporary geographic language it can be stated those resources were physical environmental resources.

With the emergence of ‘economic geography’ as a dominant sub discipline in geography, resource study intensified and Zimmerman, an economist made a remarkable contribution in this study. Various classifications of resources were proposed by different authors.

The recent paradigm in resource study is conservation of resources or rational uses of resources for sustainable development. It can be stated thus that resource study has always been significant in geography. For this reason one of the central themes of this research is ‘environmental resources’. Central theme is also ‘environmental hazards’. Hazards study has its beginning in the seventies. In these studies hazards from extreme physical events with risk potentialities have been observed and analyzed. They have been referred to as environmental hazards or disasters; though way back in 1864, G.P.Marsh warned society against wanton destruction of natural resource base. Very recently we have started realizing the effects of over and irrational use of natural
resource base. 1990 was declared as the International Decade of Natural Disaster Reduction (IDNDR). So environmental hazard study is the current research frontier. Resourcisation of environmental resources and hazards are correlated in many ways. Utilization of forest resource may lead to degradation of forests if proper measures are not taken. Over utilization of non-renewable resources may totally destroy the resource base. Depletion of ground water is posing problems both in developing and developed countries. Vandana Shiva (2002) has made us conscious about forthcoming wars on water issues. After the Tsunami of 2004 we have to rethink about extension of beach tourism.

Such example can be multiplied. What needs to be stated is that for all these reasons mentioned in above paragraphs ‘environmental resources and environmental hazards’ have been selected as central theme of this research.

1.3 Objective

Objectives of this research are

1. To identify cultural characteristics of a society in changing historical environment within a broad spatial framework.
2. To select fundamental components from physical environment, resourcisation of these components conditioned by spatial and cultural processes.
3. To focus on selected handlooms and cottage industrial products or artifacts, which are, place-specific but linked with physical and socio-cultural environment through spatial linkages.
4. To highlight certain cultural concepts or social norms which are transferred into folk rituals and folk festivals.
5. To study the dynamic behavioral environment in which resourcisation of fundamental components and concepts takes place and economic opportunities are created in an emergent economic environment and finally to trace the hazardous consequences of resourcisation on space and society.

To elaborate the first objective, our effort will be to focus on major historical periodization and socio-cultural belief system in different historical periods, as history of a society or historical event often shapes the cultural environment and resourcisation process.

Physical environment in the study area offers hundreds of components, which are capable to meet socio-economic needs. Their potential usability however is screened through cultural environment. Our objective is to select a few such fundamental components, which
are significant not only in economic environment but also in the cultural environment. In this section laterites, sands, clays, surface and ground water and a few others have been chosen to trace resourcisation process and their impacts, positive, negative or neutral whatever they may be on space and society.

Culture is basically a sociological or social anthropological term. Culture is a neutral term and every person has a culture. But the term ‘cultured person’ usually denotes a person adept in music, dance, literature, and paintings etc. We often segregate rural cultural environment from urban cultural environment on the basis of certain economic activities such as agriculture, industry and tertiary activities. Cottage industries, handicrafts and handlooms are usually associated with rural or semi-urban cultural environment. Some times they are found in historically rooted urban centers. Bishnupur, a municipal town is rich in handicrafts and handlooms. So is Sonamukhi, another municipal town in the study area. Our objective is therefore to focus on selected cottage industrial products and silk weaving in changing historical and cultural environment.

In resource studies in geography, resourcisation of fundamental components from physical environment has always been given emphasis. All these years, folk rituals, folk festivals have been studied in Sociology, Anthropology, and History or in Bengali. But these rituals or festivals have a geographic dimension too. They are place-specific within a spatial network. Our objective is therefore to highlight some festivals and rituals of local significance.

What to do and what not to do that very decision takes place within a behavioral environment where concepts and ideas of the decision makers enters into resourcisation process. Concepts and ideas on different aspects of resource and resourcisation processes change and thus change the behavioral environment, at the same time changes are noticed in the emergent economic environment. One of the objectives of the study, therefore, is to define and evaluate the changing behavioral and economic environment.

Resourcisation, it is presumed, has both negative and positive impacts. Impacts may be neutral also. Impact means its effects on space and society. Our final objective is to study these impacts from socio-geographical perspective.

1.4 Study area

For empirical observation Sonamukhi and Bishnupur police station of Bankura district, West Bengal has been selected.
Environment is not location specific. Environment has no boundary. It is absolutely an open system starting from the atmosphere to the space below the surface. Similarly it has no east, west, north or south boundaries. Then a valid question may be raised, why Bishnupur and Sonamukhi have been selected for empirical observation? This has been clarified in previous paragraphs that geographical environment embraces society and the society exists not only within a physical environment but also within socio cultural, economic, political, medical and administrative environments also. Within a homogeneous physical environment, heterogeneity may be imparted due to variance in other environments just mentioned. Particularly culture and cultural environment are time, society and place specific. Bishnupur and Sonamukhi police stations can be distinguished from other police stations of Bankura District for their observable cultural characteristics. Folk rituals, festivals, folk artisans and handloom sector of Bishnupur and Sonamukhi are well-defined and can be distinguished from the rest of West Bengal in general and Bankura district in particular. This will be clarified in course of discussion but these are the reason behind selecting these two police stations as study area.

1.5 Perspective

The problem selected for this dissertation can be addressed by various other disciplines other than geography and this has been stated at the very beginning of this chapter. The point to be noted here is that each discipline addresses environmental resources and hazards from their very own disciplinary perspective. Economists, for example, define and explain environment related issues in terms of money, whereas sociologists give emphasis on society, societal needs, societal benefits etc. Geography as a social science interacts with these two eminent branches of social science in environmental studies. On the other hand, many geographical questions have a very strong physical bias. Perspective for reasons obvious then becomes physical scientist's perspective to address those questions arising from the physical environment. From the above statements it may appear that in environmental studies geography, as a discipline, lacks a perspective of its own. In reality it is not so. Geographical perspective is spatial perspective. Space comes tangentially in some other disciplines but in geography it is an essential mode of thought since antiquity. It is neither an abstract space of economists nor a perceived social space of sociologists. Geographical space is complex but concrete, coherent and predictable as well.

Second, any research on environmental resources and hazards takes a welfare stance. In fact a new sub discipline; welfare geography like
welfare economics is coming up within geography. In this welfare approach society takes the central position right from the collection and compilation of data and in the final analysis of research findings, an investigator keeps in mind whether his or her research work will ultimately benefit society or whether research findings will help in reducing specific socio-economic problems. In geography space is meaningless without society and society exists within a spatial framework. Therefore in this investigation of environmental resources and hazards our perspective is socio-geographic. The terms like socio-cultural, socio-economic, socio-political etc., clearly indicate that society is equally important as culture, economy or politics. In this investigation culture, cultural environment and resources coming from cultural environment or hazardous consequences of resuscitation on cultural environment have been observed, analyzed and discussed. But the whole gamut of culture has been treated within society and social environment.

“There is no society without methods of production, distribution, consumption and some form of exchange” (Herskovits, 1974). Thus economics and society are inter-related. In this research therefore economy and economic environment have been treated under social environment. Conclusion from the above discussion is that, the society in the study area is the society embracing both culture and economy. Neither culture nor economy has separate entity.

1.6 Model and method

Resource study in geography usually follows Zimmerman statement "resource is not resource". This investigation on environmental resources of Sonamukhi, Bishnupur police stations of Bankura districts, West Bengal makes an attempt to explore the resource process through human decision in a behavioral environment. Zimmerman's statement, a kind of model can be well applied in the transformation of fundamental components into functional entities. But the present study also explores the strength of concepts and ideas on resource processes on the one hand and gives emphasis on folk rituals and festivals as cultural resources on the other. In geography there is no such model, which can be followed in the second part of the research. In environmental studies ecosystem model, energy model etc are applied but such studies deal with physical environment only. As the present investigation also studies social and behavioral environments, selection of a model really poses a problem.

In hazard research either White-Burton's model or the model given by sociological school of O'Keefe, Susman et al is followed. Present research adheres to the second school of thought.
As it is a study in applied environment in general and welfare geography in specific, the method of enquiry is ideographic. Conclusions are tentative and based on empiricism. Incidentally it can be mentioned here that concept of space has been rejuvenated in post modernistic approach in geography. The doctrine is that there can't be any absolute truth. All truths are relative and space specific.

1.7 Indicators and variables

This research makes an effort to identify characteristics of social, cultural and behavioral environmental of the study area. But how do we define these environments? What are the indicators chosen for identification of these environments? For the identification of socio-cultural environment, population composition, level of literacy, nature of economic activities, types of folk rituals and festivals, religion, dress codes, language spoken and food habits have been taken as variables and indicators as well.

David. M. Smith (1971) in his book "Industrial Location" has mentioned about growing interest in behavioral aspects in industrial locational understanding. He has criticized geographers, in a very subtle way, for their apparent reluctance to generalize or theorize industrial location but has confessed that a decision maker often takes a decision under imperfect knowledge or on the basis of bounded rationality.

I. G. Simmons (1981) has stated about this behavioral approach in the study of resources and resource processes. Ian Burton (1978) has shown how in the face of a hazard people take bounded rational method as a method of choice to cope with hazards. Cultural anthropologist M. J. Herskovits (1955) in explaining reality of culture has emphasized on modes of behavior in experience of culture. Way back in 1975 W. Kirk mentioned about this behavioral environment in the classification of geographic environment. But none of the authors has ever mentioned about the delineation criteria of a behavioral environment. It's a subjective environment. It depends on the capability of a decision maker to read the environment in the context of locational decision. More perfect is the knowledge; more rational would be the locational decision. In this research, intensity or richness of concepts and ideas on various aspects socio-cultural and economic environments have been taken as subjective indicators of behavioral environment. This environment is time, place and culture specific.
1.8 Technique

To assess cultural environmental resources and place specificity of resourcisation within a behavioral environment, an intensive field survey has been conducted. Field survey technique has been widely adopted to study the effects of resourcisation on space and society. Often group interview has been taken to verify the role of concepts and ideas in identification and resourcisation of cultural norms and practices. Physical and social effects of quarrying activities have been studied in field. Lack of recorded and institutionalized data has made application of field survey technique almost compulsory in the construction of database to meet research objectives.

Statistical technique has been applied sporadically. Scuttled application of G.I.S technique is not mention worthy.

To collect information, various offices have been visited as part of fieldwork.

To build up the structure of arguments, academicians and subject-experts have been consulted. To strengthen the conceptual backgrounds, National Library, Kolkata, Libraries of the University of Burdwan, Barddhaman, Vidyasagar University, Medinipur (W), (W.B.) and J.N.U., New Delhi, Bishnupur Subdivisional Library, Bishnupur have been visited several times.

1.9 Limitation

Non-availability of quantified data on folk culture and artifacts is the major limitation of this study. Folk festivals are randomly scattered. Therefore, generation of primary data through field survey was not possible for a single researcher. For this, information on folk festival could not be shown on much required relevant maps, the strongest tool in geographical investigation, and at the same time vertical and horizontal transmission of concepts and ideas could not be clarified with maps. Moreover scanty and discontinuous data on physical parameters of fundamental components is another limitation of the study.

Non-availability of latest census data poses another problem. Above all, many government and semi-government organizations have imposed restrictions on the publication of data supplied by them. Despite such limitations an attempt has been made to meet research objective with surrogate data.
1.10 Delimitation

Environment is an all-embracing term and it cannot be compartmentalized. But for convenience of study it has been divided into two: physical environment and cultural environment. Both the environments contain hundreds of resources either as fundamental compartments or as conceptual resources. But for the present study a few has been selected for evaluation. From atmospheric resources, rainfall has been selected to review its role on agriculture against other sources of irrigation. From geological and pedagogical resources, only laterites, sands and clays have been chosen as they form bondage between physical and cultural environment.

Studied police stations do not have an industrial base; but its handloom sector has significance even at national level. From that sector, only silk weaving has been selected to assess its role in resourcisation process. Bell metal, lantern and making of dasavatar cards are significant only at Bishnupur. Therefore, these three have been chosen for empirical observations in resourcisation processes within a behavioral environment.

Similarly the entire Bankura district is rich in folk festivals. Our study area has a rich cultural heritage. But only Manasa puja and Kartik puja have been focused in detail as Manasa puja is deeply rooted in the cultural environment of the study area, whereas Kartik puja is a classic example of social climbing of a deity from red-light areas to community pandals. Like resources, hazards are also multidimensional; but in this research only health hazards associated with resourcisation process have been evaluated. Truncation of job opportunities has been treated as hazard. Non-accessibility to certain facilities or corrosion of some norms and concepts has been viewed as hazardous consequences.

1.11 Data Base and approach to data analysis.

In the previous section it has been mentioned that data have been collected through field survey. Some official data collected from Government and Semi-Government offices have also been processed. The central theme of this research is environmental resources and hazards but relevant data was not available even at district level. Therefore, all the information qualified or quantified have been moderated from socio-geographical perspective. Information on the previous extent of laterite is available but no information is available on the quality of laterites used in temple construction. Data is not available on the extent of soil-eroded surface caused by the removal of
laterites. All these limitations have been kept in mind in the data analysis.

Indian epics and mythologies provide a large volume of qualified data on Hindu culture. In the analysis of cultural environment and socio-cultural processes the information gathered from epics and mythologies have been used. Bengali proverbs often give information of geographical merit. Bishnupur was once known for tobacco culture of good quality, known as "Ambury tobacco". This information has been gathered from a Bengali proverb. Ornamentation on terracotta tablets and woven designs on Baluchari Sarees, when evaluated, throw light on cultural environment of a particular historical time.

1.12 Organizational setup

This research is divided into four sections.

These are:

Section – I: Introduction
Section – II: Physical environmental resource base and related issues on hazards
Section-III: Cultural environment, behavioral environment, resourcisation and interrelated hazard issues.
Section-IV: Conclusion.

Each section is divided into chapters. Each chapter is devoted to specific objective or problem selected for analysis. For example

Section – I: Introduction

Chapter – 1: Research problem and related issues.

Chapter – 2: Conceptual framework.

Chapter – 3: Environmental characteristics of the study area.

Section – II: Physical environmental resource base and related issues on hazards

Chapter-4: Geological and Pedological resource, resourcisation and consequences.
Chapter-5: Forest resource as a freely available environmental commodity, commoditization and consequences.

Chapter-6: Water resource, socio-economic environment and agriculture, the main socio-economic activity.

Section-III: Cultural environment, behavioral environment, resourcisation and interrelated hazard issues.

Chapter-7: Silk industry at the interface between historical and cultural environment.

Chapter-8: Conch shell industry.

Chapter-9: Bell metal, Lantern and Dashavatar play cards.

Chapter-10: Manasa Puja and Jhapan, Kartik Puja and their relevance on society and space.

Chapter-11: Bishnupur Festival.

Section-IV: Conclusion.

Chapter-12: Thesis
Chapter-13: Implication, recommendation and summary.
CHAPTER - 2

Conceptual framework

Any research investigation becomes easier if there is a relevant model before a researcher. A model acts as building block. It helps in formulating the initial structure. Therefore a model is a building block and structure as well. For a novice in research field, these building blocks are of crucial importance. In Geography space is accepted as model. Any geographical enquiry takes space as a model. There are several branches and sub-disciplines in geography and each has specific model. I have followed some concepts with their ramifications, which are widely used in this dissertation. There is not any *a priori* model in front of me. So with the help of some concepts and definitions I would like to establish my model on environmental resource and environmental hazard and its impact on society and space. Space is the platform or base of Geographers; so I have taken the concept of space as a model. There are conventional meanings of the terms like environmental resource and environmental hazard. Most of the books, journals and articles mean tangible things as resource or hazard. In my research work I would like to give emphasis on concept as resource or concept as hazard which was embedded in some works. By the term environmental hazard one has to mean loss of life or loss of property. But it also depends on the social position of that person. So I have taken into account the concept of society in this research endeavor. In analyzing the physical environmental resources and hazard issues, models on geomorphology, slope, ecology, soil, agriculture, industry, and population have been taken. In cultural environmental resources and hazard issues, concept of culture, behavior, society has been taken. Environment in its totality has been taken as a concept in this dissertation. These concepts helped me to meet my research objectives and answer all those questions raised at the time of analysis. Here is a brief description of these concepts used in this Ph.D. dissertation.

2.1 Concept of Space

Space is the basic organizing concept of the Geographer (Whittlesey, cited in James and Jones, 1954). In Geography the term 'Space' refers to a container in which environmental phenomena are described. Environmental phenomena not only include physical environmental phenomena but cultural/social environmental phenomena are also included within Geographical space. Richard Hartshorne in 'The Nature of Geography' (1939) stated about the position of space in modern geographical discourses though there was a little or vague discussion about the spatial science. Hartshornian space was 'a universal human existence within which objects exist and events occur. It is referred to as absolute space by Smith, 1984. Schaefer (1953)
defined space as nothing but the relationship between objects and events which is known as relative which changes over time and space. In contrast to Schaefer’s philosophical argument on space he gave emphasis on basic spatial concepts like distance, pattern, relative position, site and accessibility. He gave emphasis on social organization to analyze space as the impact can only be seen on space. Like other disciplines geographical space is not an abstract space. It is concrete, coherent, complex and predictable. wrote ‘Geography as a science of space with a logic space (geometry) as sharp tool.’ Harvey (1973) conceptualized that space is resolved through human practice with respect to it. The human practices create distinctive character of space. Nytsuen (1963) also draws attention to the social organization of space and argued that all sorts of social enquiry are complete when they consider spatial concepts. This represents the relational view of space, according to which space is contained in objects in the sense that an object can be said to exist only in so far as it contains and represents itself in relation to other objects (Gregory, 1994). Thus the concept of objective and subjective space arises. Present research work is an applied geographical work and emphasis is given on the subjectivity of space. Alternation of social structure with changing technological changes makes more complex interrelationship and the effect is seen on space. Utilization of space depends on ones concept on education, concepts on technology or concepts vertically gained. Space as simple extent of the earth is a resource base (Hagget, 1972).

2.2 Concept of place

In ordinary meaning place includes mainly two things (a) ones position in society and (b) ones position in spatial location. The study on place started in Sociology. ‘Place’ is ones position in society rather than the more abstract understanding of location in space (Greene, 1968 cited at Tuan, 1974). Spatial location derived from position in society rather than vice versa. (Sorokin, 1964). Place is more than location and spatial of socio-economic status (Tuan, 1974). It can be said that combination of natural environment and successive modification of human beings gave rise to a particular place. Vidal da la Blache (1903), Cyril Fox (1932), Carl O Sauer (1941) stated about different faces of place. The term ‘Geographicite’ is used to describe the pre-reflective or pre-conceptual experience of space, place and landscape (Dardel, 1953 cited at Harvey, 2002).This Geographicite translated into ‘Geographicality’ which binds people to their surroundings, manifesting them in a sense of place and in sensitivity of landscape. Yi-Fu-Tuan (1974-77) used the term Topophilia to elucidate the sentiment and feeling about places. This topophilia results in varieties of cultural landscapes in different places. In the study area the cultural phenomenon especially the folk
culture creates distinct cultural landscapes which can be referred to as personality of place. People demonstrate their sense of place by applying various cultures through moral and aesthetic discernment (Tuan, 1977).

2.3 Concept of Culture

There is no comprehensive consensus about culture. Culture is the central theme of cultural geography. Culture is a shared set of meanings that are lived through the material and symbolic practices of everyday life. From myriads of definition about culture, some are taken to clear the concept of culture.

i. A specific culture is the total way of life of a people (Brock and Webb 1968:25)

ii. Culture is the structure of feeling that defines the life of people (or perhaps is constructed out of the lives of people) and a set of production that reflect upon, speak to or attempt to mould that structure of feeling through various strategies of representation (Williams 1973:13)

iii. Culture, then is an all-embracing concept. In effect, the entire thing we do and say with the exception of a few instinctive acts such as eating, drinking, blinking and mating are culturally conditioned. The language we speak, the religion we practise, the food we eat, the style of our homes are learned behavior, all can be referred to as cultural elements or traits.
   a. artifacts - tools, factories, housing
   b. sociofacts - family, education
   c. mentifacts - language, religion, arts (Zelinsky, 1973:73)

iv. Culture is the sum total of historically learned human behaviour and ways of doing things. (Spencer and Thomas, 1978:1)

v. Culture is the very medium through which change is experienced, contested and constituted (Cosgrove and Jackson, 1987:95)

vi. Culture is the level at which sociological groups develop distinct patterns of life

vii. The capacity to use tools and symbols (Bahaman, 1992:320)

viii. The behavior ideas and institutions that are acquired by people as members of a society (Gross, 1992:15)
ix. Learned set of behaviors, belief and attitude, values or ideas that are characteristic of a particular society of populations

(Ember & Ember 1990: 357)

x. The complex behavior and beliefs we learn from being members of our group

(Moore 1992:11)

xi. The customary manner in which human groups learn to organize their behavior in relation to their environment

(Howard and Dunaif Halter 1992:622)

xii. A shared way of life that includes material products, values, belief, and norms that are transmitted within a particular society from generation to generation

(Seupin 1992:414)

xiii. A way of life that is common to a group of people, including a collection of beliefs and attitude, shared understanding and patterns of behavior that allow those people to live together in relative harmony but let them apart from other peoples.

(Whiteford & Frides 1992:80)

xiv. The learned pattern of behavior and thought characteristic of a societal group

(Harris 1993:483)

xv. The patterned and learned ways of life and thought shared by a human society

(Bodley 1994: 7)

xvi. Every thing that people have thought and do as a member of a society.

(Hicks and Gwaynne 1994:391)

xvii. a. Culture is opposite to nature
b. Culture is actual
c. It is the process by which patterns are developed
d. The term indicates a set of markers that set one people off from another
e. Culture is the way that all these patterns, processes and markers are represented.
f. The idea of culture often indicates a hierarchical ordering of all these processes, activities, way of life and cultural production. Culture is understood both as a way of life encompassing ideas, attitudes, languages, practices, institutions and structure of power and whole range of cultural practices, artistic forms, text, cannons, architecture, mass produced commodities and so forth.

xviii. Culture is an incredibly complex word. The word seems to signify a total way of life of a people encompassing long range food habits, music, housing, style, religion, family structure and most importantly values.

(Don. Mitchell)
Culture is a set of learned behavior and ideas that human beings acquire as members of society (Schultz and Lavenda 1995:372)

A learned system of beliefs, feelings and rules of living around which a group of people organize their lives, a way of life of a particular society (Crapo 1996:17)

The socially transmitted knowledge and behavior shared by some group of people. (Peoples and Bailey 1997:412)

The system of meanings about the nature of expense that are shared by a people and passed on from one generation to another.

The way of life of a people including the behavior, the things they make and the ideas (Rosman and Rubel 1998:372)

The learned behaviors and symbols that allow people to live in-group, the primary means by which human adopt their environments. The way of life characteristic of a particular human society (Nanda & Warms 1998:381)

According to E.B.Tylor "The complex whole which includes knowledge, belief, art, law, morals, customs and any other capability and habits acquired by man as a member of society (1871).

(Sited in Womack 1998:420)
(Sited in Cronk, 1999)

From these definitions one may say that culture means values, beliefs, practices and ideas about religion, language, family, gender, sexuality and other important identities.

Culture is used differently by different disciplines. Anthropologists believe in material culture or material practices. Sociological culture related to the culture of a particular society. A historian, Political scientists, Sociologists and Geographers' view about culture is that it is a complex concept. Culture is a particular way of life, such as a set of skilled activities, values and meaning surrounding particular economic practices. The term 'Culture' describes that characterizes a particular group. Culture applied to the activities that are necessary or helpful in producing the cultivation of human sensitivity and conduct. Thus to fine art, music, poetry, literature and dance, culture is opposite to nature (Johnston et al, 2005)

Sauer (1941) was interested to understand the material expressions of culture by their manifestation on landscape which is known as cultural
Cultural landscape is a tangible outcome of the complex interaction between human groups with its own practice, preferences, values, aspirations and a natural or modified environment (Knox & Manston, 1987). The definition given by Taylor is well accepted where he includes all acquired knowledge as culture.

Cultural geography analyses how space, place and landscape are shaped by culture. They focus their attention on people's relationship to the natural world. It depends on Sauer's concept of cultural landscape which reflects the lives of ordinary people as well as more powerful and they reflect their dream and ideas and their material lives.

2.4 Behavioral Geography

Human behavior is the central theme of behavioral geography. It is determined by how man perceives and understands his surroundings i.e., environment both physical and cultural. Behavioral geographers explore how individuals and groups acquire knowledge of their environment and how this knowledge shapes their attitude and behavior. Perception on environment changes with changing place and space, changing culture. Behavior is shaped or constrained by wider process in the social, political and economic spheres (Daniels, reprint 2003). Behavioral research in human geography began in 1960's. In recent years the scope of behavioral geography is widened and includes attitudes of decision making, learning and personality as well as humanistic examinations of the attitudes of place and landscape (Walmsley & Lewis, 1989). Golledge stated how physical and man made environment perceived and understood by human beings or how this knowledge shapes their attitude and behavior (Golledge, 1981, cited in Johnston et al, 2004). Impact of behavior can be seen on space and it is called spatial behavior. Spatial behavior is controlled by differential use of space. An example of spatial behavior is migration which involves a complex decision regarding current location, movement, new location, employment, transfer to job etc (C. Murray et al, 1987). Behavior of the weavers of the study area is related to this concept. Behavioral geography in space focuses on acts, decision making, spatial cognition, cognitive mapping, spatial knowledge acquisition uncertainty, habit, search and earning, emotional state attends cognitive representation values and beliefs (Smelser et al, 2001). Behavioral environment gives rise to the concept of phenomenal environment. Phenomenal environment suggests how mental images are formed by the cultural definitions and physical space (Jones, 1977).
i. An emphasis upon the psychology underpinning individual spatial behavior that has emphasized the role of cognitive and decision making factors that intervene in the relations between a multidimensional environment and human action; cognition in this sense is understood as the active mental process of learning about places.

(Downs and Stea: 1977)

ii. Behavioral geography is more and more concerned with the representation of distance and space

(Baillie, Antoines: 1986)

iii. Behavioral Geography includes the study of the process involved in spatial decision making and the consequent traces of human decisions and movements in the environment.

2.5 Environment

Environment is a comprehensive term requires holistic approach. Environment means the surroundings. It not only includes the physical environment i.e., topography soil, vegetation or river but also includes manmade environment. Since 1970’s the term environment is in official use in academic circles. The term is also used by non-academics but there is no universal consensus of the definition of the term. Physical scientists believe that environment is their prerogative and they define the term from physical environmental perspectives which is governed by physical laws, processes and factors. Social science has a late entrant in the study of environment and they yet to define environment from their own disciplinary perspectives. The modern concept of environment encompasses ecological economic, aesthetic and ethical concerns. Component of physical environment entered into resourcisation process. Concept of technology, education mold physical environment into cultural environment. Different cultural characteristics impinge on space differently and create different cultural landscape. So environment not only mean physical environment. There is no meaning of the term without human beings. Some definitions of environment are:

i. Environment is derived from the French word Environ or Environner, meaning ‘around, found about, to surround to encompass’ these intern original from the old French virer and viron which mean a circle, around or circuit.

ii. Einstein is reported to have defined Environment is everything that ‘isn’t me’. This aphorism symbolized one feature of the environmental dilemma (Kuper et al, 1996).
iii. Environment is a metaphor for the enduring contradiction in the human condition, the power of domination yet the obligation for responsibility, the drive for betterment, and manipulation of nature to improve the changes of survival. (Kuper et al, 1996)

iv. Environment refers to the entire range of external influences, natural and man made that can impinge on the life support system essential for health and survival.

v. Environment refers not just to biophysical context but to human interaction with an interpretation of that context (Barnard et al., 1996)

vi. The dictionary meaning of the word 'Environment' is a surrounding, external conditions influencing development of growth of people, animals or plants living or working conditions etc.

vii. Environment refers to the sum total of conditions which surrounded man at a given point of space and time (C. C. Park, 1980).

viii. The whole sum of the surrounding external conditions within which an organism, a community or a subject exists often used in limited way in geography. Example, natural environment meaning either the non cultural and non social environment, or land space before man came, geographical environment means factors of the earth whose relationship are considered in terms of spatial location. The physical environment includes all phenomena apart from man and the things he creates, while the non human environment includes everything not in social system, whether made by man or not. These are all slightly different and unqualified use of the term environment and can be misleading. (Monkhouse et al, 1978).

2.6 Environmental Resource

Erich Zimmerman states that 'Resources are not, they become'. The implication is that natural resources are not pre given, natural factors around which society fashions its production process but rather their usefulness is conditioned by cultural, historical, technological (and other knowledge), and geographical circumstances (Henink, 2001). So the utility of a component makes it a resource. Resource can be classified according to its origin, availability; distribution etc. on the basis of renewability resource can be classified as
Physical environmental resource base can be divided on the basis of renewability as shown above. Based on this model, resources of the study area can be analyzed. Like physical environmental resource cultural environmental resource also is analyzed. Though the time scale in case of cultural environmental resource is limited years to century. Here in these table components of cultural environment are analyzed.

These components which change within 25 years are stated as Dynamic cultural resources and the culture which is standstill for more than 25 years are static resources in this table.

Bortman et al (2003) defines resource as any material, service or information from the environment that is valuable to society. Emphasis has been given on information while doing this research work. Concept is the main factor behind formation of a component into a resource. Concept on technology, knowledge, education controls ones decision making process. There are many limitations or constraints in the process of resourcisation. These are not only climatic or topographic factors but the political structure, economic status and demography occupied important role behind resourcisation (Guha, 1997). But most important is the concept. Concept on economic status, demography or political structure takes part in resourcisation process.
i. 'Resources are not, they become' (Zimmerman, 1951)

ii. Resources are a cultural concept. The utility of a stock make it a resource....resources are bounded by concepts of human utility.

   (Hagget, 1972)

iii. Atmosphere, water, forest and land are natural resources which posses to distinguishing properties in comparison to the other natural resources. They are regenerative in the sense that they are not depleted if we do not use them beyond their natural regenerative levels.

   (Bhattacharya, 2001)

iv. Parts of the physical environment that are considered useful for satisfying human needs and wants are referred to as resource.

v. An environmental resource is any material service or information from environment that is valuable to society.

   (Marci Bortman et al, 2003)

2.7 Environmental Hazard

1990's decade has been declared as International Decade for Natural Disaster Reduction (IDNDR). In most books and journals hazards refer to the physical hazards which mean an occurrence causing damage to ecological description, loss of human life or other economic services on a scale which demand an extraordinary intervention from outside the affected community. Hazard may be classified as

<table>
<thead>
<tr>
<th>Natural Phenomena</th>
<th>Natural Phenomena of Complex physical origin at the earth</th>
<th>Meteorologic al Hydrological</th>
<th>Biologica l</th>
<th>Man-made Hazard</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Earthquake</td>
<td>a) Land slide b) Avalanche</td>
<td>a) Windstorm b) Tornados c) Hailstorm &amp; snowstorm d) Sea surges e) Floods f) Draught</td>
<td>a) Epidemics of communicable disease</td>
<td>a) Conventional including Siege / blockade b) Non-conventional nuclear/biological/chemical</td>
</tr>
<tr>
<td>b) Tsunami</td>
<td></td>
<td></td>
<td></td>
<td>a) Vehicular b) Collapse of building c) Explosion d) Fire e) Biological f) Chemicals used as pesticides and pollutants g) Drowning</td>
</tr>
<tr>
<td>c) Volcanic eruption</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Fig.2.3

It is clear from this classification that all hazardous phenomena are tangible and the effect quantified in terms of loss of life or loss of property. But gradual deterioration of health or joblessness due to lack

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of demand might also be hazardous. Cutter (1993) defines hazards simply as 'hazard are threats to people and the things they value'. The term hazard is subjective. It can vary by culture, gender, race, socio-economic status and political structure as well.

There are two schools of hazard studies. The first one is American School of hazard studies which is pioneered by White, Burton and Kates. They gave emphasis on physical parameters like magnitude, frequency, duration, set of onset, areal extension, exposure and vulnerability etc. Another school is known as Socialistic School. They believe that an event become hazardous not on physical parameters but the population characteristics and the characteristic of the society. Vulnerability depends on who you are and what is your position in society. The main proponents of this school are Susman, O'Keefe and Wilson. They believe that all hazards have social connotation which is measured in terms of society, vulnerability depending on one's nutrition level and economic level. Factors affecting human response to hazard/disaster are

<table>
<thead>
<tr>
<th>Population</th>
<th>Social Diversity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size</td>
<td>Age</td>
</tr>
<tr>
<td>Distribution</td>
<td>Race/Ethnicity</td>
</tr>
<tr>
<td>Displacement</td>
<td>Gender</td>
</tr>
<tr>
<td>Economic System</td>
<td>Physical impairment</td>
</tr>
<tr>
<td>Cultural Values</td>
<td>Political system</td>
</tr>
<tr>
<td>Built Environment</td>
<td>Participatory</td>
</tr>
<tr>
<td>Structure</td>
<td>Democracy</td>
</tr>
<tr>
<td>Lifelines (Transportation, Utilities, Communication)</td>
<td>Local vs. National /State</td>
</tr>
<tr>
<td></td>
<td>Control regulatory regimes &amp; frame-works internal/international security</td>
</tr>
</tbody>
</table>

Fig.2.4

Conventional definition on environmental hazard:

i. 'Continue to contaminate our bed and you will one day lay in your own waste' (ChiefSeattled Panned, 1854 sited in Conrad, 1999).

ii. Problem of compliancy and dangerousness, hazards to people and places and catastrophes resulting from both technological and
social causes. (Susan L Cutter et al, 1994)

iii. The ultimate cause of environmental problems may well traceable to the structural imbalances between rich and poor countries and we would be right to replace the term natural with the more appropriate term social or political disaster.


iv. Environmental solution as the sum of all social, biological & physical or chemical factors which compose the surroundings of man.

(U.S. Presidents Science Advisory Committee, 1965)

Both these two schools analyzed hazard in terms of loss of life or loss of property. In this PhD work I would like to say that not only loss of life or loss of property is hazardous in terms of quantification. But gradual deterioration of health condition is also hazardous. The term hazard is subjective in time space continuum. The meaning varies from culture to culture and society to society. Sometimes concept itself becomes hazardous. My thrust in the PhD dissertation is on this new concept of gradual deterioration as a hazard and its consequences on space.

2.8 Man- Environment relationship

In the geographical concepts there are various approaches and schools of thought for studying man-nature interaction. The main two concepts are the deterministic concept and the Possibilistic concept. The essence of Deterministic concept is that the history, culture, living style and stage of development of a social group or nation one largely governed by the physical factors of environment. The main proponents of this concept are Hippocrates, Aristotle, Thucydides, and Herodotus. But in Possibilistic approach they take man as an active agent in environment, i.e., natural environment provides options, the number of which increases as the knowledge and technology of a culture group develop. From these two concepts it can be said that in deterministic approach man and environment are treated as separate entity but in possibilistic approach man is treated as a part of environment, not a separate thing. Vidal de La Blache, Jean Brunches, Borrow, Sauer et al, was the supporters of possibilism in Geography.

But why previously man was separated from environment in spite of being a part of environment is a topic of discussion. Man is the last comer in this world but something makes him segregated from other animals. It is his ‘culture’ which differentiate him from the rest animal world. Culture makes man more mobile. Man can transform his
environment for his own need. Environment provides some fundamental components but man transforms these fundamental components to functional components. For the sake of food man can move from one place to another... This movement makes man more mobile than other animals. Man's curiosity about the environment, his habitat also makes him more mobile. The interaction of human beings with the natural environment is much greater than other animals. With this increasing impact on environment man also creates many problem or bad effects which may cause some hazardous conditions. In one hand he creates some new modes, paths; on the other hand he is the destroyer, i.e., man playing a dual role in environment.
CHAPTER - 3

Environmental characteristics of the study area

For empirical observation to meet research objectives, Bishnupur & Sonamukhi Police Station of Bankura District, West Bengal has been selected. Let us give a brief introduction of our study area. As this is a study in Geography our discussion begins with locational references.

3.1 Introduction
3.1.1 Administrative location

Bishnupur Police Station is a Sub-division under Bankura District, West Bengal. The Police Station Sonamukhi delimits the north and northeast side of Bishnupur. Jaipur Police Station, Onda Police Station and Taldangra Police Station delimit eastern part. The district West Midnapore delimits southern part. On the other hand Sonamukhi Police Station another Police Station of the study area lies under the same district. The boundary of this Police Station is delimited by Bardhaman district in the northeast, Barjora Police Station of Bankura district in the southwest. Onda, Bishnupur & Patrasair Police Stations of Bankura, in the south, southeast & east respectively (Fig.3.1).

3.1.2 Latitudinal & longitudinal references

Bishnupur subdivision of District Bankura lies within 23 degree and 35 min north latitude and 87 degree and 36 min east longitude. Sonamukhi Police Station lies within 23 degree and 36 min north latitude and 87 degree and 19 min east longitude.

3.1.3 Total area

Police Station Bishnupur consists of 163 villages. There is only one Municipality i.e. Bishnupur Municipality which was established in the year 1873. Another Police Station of the study area is Sonamukhi. It consists of 188 villages. Sonamukhi Police Station has only one municipality named Sonamukhi Municipality established in 1886.

Bishnupur and Sonamukhi Police Station lie under the district of Bankura. Bankura is one of the 19 districts of West Bengal. The shape of Bankura is almost like a triangle. The total area of this district is 6882 Sq. Meter and it is the 4th biggest district in the West Bengal. Bankura was once known as Jungle Mahal because entire district was covered by forest. There are three municipal towns in Bankura district. These are
Location map of the study area

Fig. No.3.1
Bankura, Bishnupur and Sonamukhi. Besides that Bankura district consists of three sub-divisions. These are Bankura Sadar, Bishnupur, and Khatra. Under Bankura Sadar Sub-division there are seven police stations. These are Bankura, Borjora, Chhatna, Gangajalgathi, Mejia, Saltora and Onda. There are six police stations under Bishnupur Sub-division. These are Bishnupur, Sonamukhi, Patrasair, Indus, Kotalpur and Jaipur. Khatra Sub-division consists of Khatra, Ranibandh, Raipur, Simlapal, Sarenga, Tandangra, Indpur Police stations.

The study area lies under Bishnupur Sub-division. There are only two urban centers namely Bishnupur and Sonamukhi in the study area.

Environment cannot be theoretically segregated or compartmentalized; but for convenience of study this is decomposed in our discussion.

3.2 Physical environmental characteristics

3.2.1 Climate

Climate mainly depends on rainfall, temperature, humidity and altitude. In Bankura two types of agro-climatic zones are found. The first type of climate found in the red laterite and lateritic tracts of Sonamukhi, Jaipur, Bishnupur, Ranibandh, Gangajalgathi, Simlapal, Khatra, Hirbandh, Bankura - I & Bankura - II blocks. The second type i.e Vindhyan alluvial zone is found in Patrasair, Indus and Kotalpur blocks.

The study area is under first type of climate. The rainfall ranging from 1100mm - 1400mm. and the maximum temperature is 45° C and the minimum temperature is 12-13° C. During April & May a few spells of nor'wester shower rush in. The average rainfall during June and September constitutes mainly 78 % of the annual precipitation. The monsoon rainfall recorded as 634.1 mm. Relative humidity is high during the monsoon season but after that the relative humidity declines in the month of early January and in the end of December and May. Heavy thunder showers and heat waves are found during winter and summer seasons. The climate is of extreme type. In West Bengal Bankura district is one of the main drought prone area. In the past 60 years the average rainfall in the study area is 1329.2 mm. There are several scanty rainfall years in the study area. For example-

<table>
<thead>
<tr>
<th>Year</th>
<th>Rainfall (cm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1955</td>
<td>883 cm</td>
</tr>
<tr>
<td>1966</td>
<td>832 cm</td>
</tr>
<tr>
<td>1976</td>
<td>825 cm</td>
</tr>
<tr>
<td>1977</td>
<td>785 cm</td>
</tr>
<tr>
<td>1982</td>
<td>859 cm</td>
</tr>
</tbody>
</table>
The area is mainly of scanty rainfall but there are exceptions also where the rainfall crosses the normal scale. For example

<table>
<thead>
<tr>
<th>Year</th>
<th>Rainfall (cm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1919</td>
<td>2244 cm</td>
</tr>
<tr>
<td>1922</td>
<td>2093 cm</td>
</tr>
</tbody>
</table>

In the year 1978 flood situation arose in Bishnupur due to heavy rainfall. During the last ten years rainfall and temperature calendar is given from which we can get an atmospheric picture of the study area.

(Source: Agricultural Census, Principal Agricultural Officer, Bankura, 2001)

3.2.2 Biosphere

3.2.2.1 Flora

The forest of the study area came under the forest department only in the year 1953 after the abolition of the Zamindari system. The whole district has more or less forest cover. Total forest cover is 1404 Sq.Km. in all or 20.4% of the total area of the district. In Sonamukhi 10660.64 ha area is covered by forest and Bishnupur is covered by 13276.87 ha forested area in 1991 (source - District census handbook, Bankura District 1991). The study area is rich in floristic composition. Bishnupur was once known as jungle Mahal, because of dense forest cover mainly of Sal trees (L.S.S.O'Malley: Bengal District Gazetteers, Bankura: P.P 42-44).

Total floristic composition can be divided into two main division, these are A) Plants of alluvial soil and B) Plants of Laterite soil.

The plants are sub-divided as

a) Plants of alluvial soil
b) Plants of lateritic region
c) Plants growing on hills and their vicinity
d) Plants growing on wet sandy beds of rivers
e) Hydrophytes
f) Epiphytes and parasites
g) Plants growing in the rice fields

The floristic composition consists of both natural and men made flora. The main species of the study area are Sal, Shegun, Mahua, Aam, Jam, Kul, Asan, Kadam, Peasal, Haldu, Kend, Akashmoni, Eucaliptus, Arjun, Neem, Asan, Khejur, Tal, Swarnalata and Sisoo, different types of grasses with bamboo etc.
3.2.2.2 Fauna

Most part of the district covered by jungles mainly of Sal and other indigenous species. Like Flora, the faunal diversity can be found here. The fauna of the study area are divided as a) Wild animal, b) Birds, c) Fish and d) Reptiles.

a) The wild animals include wild elephants both migratory and residential, fox, Jackal, wild Cat, wild Bear, Chital, Hare, Mongoose, Porcupine, Civet, Pangolin, Wolf etc.

b) The game and other birds include jungle Fowl, Peacock, Partridge, Water Hen, Copper, Pipet, Dronggo, Dove, Woodpicker, Tereepie, Koel, Bulbul, Munia, Magpie, Robin, and Eagle.

c) The fish are of common species like all other parts of Bengal. These are mostly found in Ponds, Tanks or Bandhs. The common species are Rui, Mrigel and Katla. During freshets Hilsa found in Damodar river.

d) Reptiles of the study area mainly include snakes. These are Kobra, Kraits, Russel Viper, Rat Snake, Water Snake, and Banded Kraits etc.

3.2.3 Geomorphology

The study area is situated in the Middle Eastern part of Bankura district. The district is distinctly divided into two tracts. The western part is recognized as a table and of Chhotonagpur plateau and the middle portion consists of low undulating ridge of laterite. A series of rolling downs found here. The eastern portion formed by the silts brought by the rivers coming from Chhotonagpur plateau and Gangetic Rivers. So the district mainly divided into two parts. One is the rolling plateau in the western part and the other is laterite and lateritic tracts with alluvial patches in the eastern portion. Bishnupur and Sonamukhi lies under the second part. The north eastern portion of Sonamukhi and South western part of Bishnupur lies under alluvial plain and the rest of the two police station lies under laterite and lateritic plateau.

3.2.4 Pedology

The northern part of the study area is covered by very deep sandy loam to sandy clay loam of Mrindihi soil series this type of soil formed
here because of nearness of the river Damodar. The North Eastern part of the study area is covered by very sandy loam to sandy clay loam. The southern part of the north eastern side is covered by sandy loam on late rite mass which is under Bhulanpur soil series. There is a patch clay loam to fine clay of Kantaban series. Middle portion of the study area formed by the river Darakeshwar and its distributaries Berai or Boda. Western part is associated with laterite of Bhulanpur series, covered with sandy loam, loam and the riverine area is covered by clay. Laterite cover is found in the western part, especially in the Bishnupur Municipality and its surrounding areas. The southern part consisting of clay, sandy loam and laterite under sand cover. Eastern part is covered by sandy loam and clay (Ref: Soils, Bankura District NBSS and LUP (ICAR) 1991).

3.2.5 Surface water

There are only two rivers, which flow in the study area. One is Damodar, which covers entire northern part of the study area and another, is Darakeswar, which is a tributary of Damodar. Another important river in the study area is Berai, a tributary of Darakeswar River. Sali a tributary of Damodar is also an important river regarding the irrigation of the study area. Different cannels from river Damodar also meet the irrigation demand. These rivers are non-perennial. River system - besides this river there are so many natural as well as human made ponds in the study area. Among them the tanks of Bishnupur dug by the Malla Kings are famous. These are Chaugan in the south east corner of the Bishnupur Municipality, Lalbandh, east side of Bishnupur Shyambandh, KrishnaBandh, Pokabandh, Kajulia, Jamunabandh, Kalindibandh, Gantait bandh in the east, north east, middle, northern side of Pokabandh, western part and north western part respectively. Among these nine bandhs Chaugan and Kajulia were totally silted. Total 283.76-acre area is covered by this bandhs (L.R. Record 1955) but at present most of the bandhs is shrinking because of poor maintenance. Cannel from Kangsabati is another source of surface water irrigation. Sonamukhi gets it’s water from Damodar, Both the police stations have to depend on surface as well as ground water irrigation for agriculture, the main source of income.

3.2.6 Ground water

The study area is covered by laterite older and younger alluvium. So the quality of ground water varies widely. In general the chloride content is low to moderate, bi-carbonate is moderate to high whereas hardness is 500 ppm. The mineral contents in near surface ground water in alluvium area are moderately hard. The quality of ground
water in the alluvium terrain is good and suitable for agricultural purposes.

3.2.7 Geology

The underlying geology of the study area mainly divided into three. These are younger alluvium on the river belts of Damodar and Darakeshwar. Older alluvium covers in southern Sonamukhi & Northern Bishnupur. Western part of the study area is covered by older alluvium of jaypanda, distributaries of river Damodar and river Darakeshwar. (Ref: Geological map of Bankura district, National Bureau of Soil Survey and Planning ICAR, Nagpur, 1992).

3.3 Cultural environment

The study area comes under rarh of West Bengal. Rarh (Sanskrit word ruin means uneven) refers to that part of Bengal, limited by Bhagarathi in the east and the Ganga in the north. In Jain Acharangasutta, rarh is referred as forested, isolated tract which is inhabited by tribal people. Rarh has a distinct culture from other parts of West Bengal.

3.3.1 Socio-cultural environment

Population characteristics

The word culture means something learned or acquired. This definition about culture is given by Tylor in 1871, where he includes art, law, moral, belief, customs in realm of culture. According to anthropologists culture is all that is non-biological and socially transmitted in society including artistic, social, ideological and religious patterns of behavior and the technique of mastering the environment (Tylor, 1990). Another definition of culture defines it as information, customs and skills, domestic and public life in peace and war, religion science and art. (Kelm, mid 19th Century). Herscavits hens characterized culture as being learned, structured, divisible into aspects, dynamic and variable and stemming from every component of human existence. Culture is non organic and exists only in human life. Not in animals as it does not perpetuate vertically. In the present dissertation education is included as a parameter of culture. Education helps a man to flourish his knowledge in the society.

According to sociological point of view culture refers to the way of life of a particular group of people within a specific environment which is learned or acquired.
According to a layman the parameters of culture include ones voice, body language, spoken language, dress sense, expert in fine arts or an educated person. In a nutshell a cultured person refers to an educated well-dressed person.

In the present dissertation education is included as a parameter of culture as one has to acquire it. Education helps a man to flourish his knowledge in the society. An educated man plays a significant role for the formation as well as transformation of a society.

According to Zimmerman's definition about resource, resource is not it becomes or the utility of a thing makes it resource. An educated person plays a more significant role in a society. So he becomes a resource person in society.

From the definition of culture and resource, a cultured person as a resource refers to a person who is well-educated and utilizing his knowledge for the formation or change of a society.

In the PhD dissertation I would like to include those artisans, weavers, artists as a resource of the study area.

The study area comes under ‘Rarh’ of West Bengal. The word ‘rarh’ does not refer to any physical location or physical condition but it is a cultural term. It has a specific cultural characteristics. The literary meaning of ‘rarh’ (origin ‘roorka’ in Sanskrit) is an uneven place in the west of Bhagirathi river and south of the Ganges(Mukherjee,1979). The Jain tirthankara stated it as a place of uncivilized aborigines. It is because, this region is covered by dense jungles, wild animals and tribal population. Aryan culture diffused here later on. Study area was the capital of Mallah kings. The impact of this culture is seen here. The Malla kings patronised local folk culture and they were also fond of classical music and dance.

Classical music of Bishnupur is known as ‘Bishnupur gharana’. The Malla king Raghunath Singh II in 18th century invited the singers from Delhi. The pioneer of Bishnupur Gharana was Ustad Bahadur Khan and Mridanga player Pirbaksh. The disciple of Bahdur Khan was Gadadhar Chakraborty. The famous classical singers of Bishnupur were Ramsankar Bhattacharya, Ramkeshab Bhattacharya, Kesarblal Chakraborty, Gopeswar Bandopadhyay, Kshetramohan Goswami, Radhinka Prasad Goswami, Ganendraprasad Goswami, Jadunath Bhattacharya and Bindhabaisni Devi. Jadunath Bhattacharya taught songs and was the ‘Sabhagayaka’ in Tripura kingdom. Maharshi Devendranath Thakur invited Radhika Prasad Goswami for singing. Acharya Kshetramohan Goswami was the principal of Bngasangeet
Mahavidyalaya founded by Raja Sourindramohan Thakur in Calcutta (Ghosh, 1957). Rabindranath Tagore has taken Bishnupur Gharana in many songs. For example the music of 'Ananda dhara bahiche bhubane, Aji jato tara tabo akashe' were composed after Bishnupur Gharana (Bandopadhyay, 1994). The singers of this classical school become resource for the study area. Ananta Lal Bandopadhyay established the music college of Bishnupur.

Besides classical school of music the study area is also rich in folk arts. The artisans of Docra, Terracota, Conch shell workers, Pottery workers, Patuas (Dash avatar Card), weavers also enriched the cultural environment. The artisans are awarded with National Awards. Some National Awardees are Biswajit Khan (Weaver, Baluchari), Aswini Nandi (Conch shell artisan), Rashbehari Kumbhakar and Kalipada Kumbhakar (terracotta work), Nayan Karmakar (stone work) and Juddha Karmakar (docra).

Quality of population is an important factor for a group of population for becoming resource. But quantity is also important for given population for becoming resource.

The total population in the district is 3192695 in 2001. District population density is 464/sq.km. Percentage of and female populations are 51.24% and 48.76% respectively. About 92.63% people of the total population are rural population. There are only two urban areas (Bishnupur and Sonamukhi) in the study area. The total population of the study area is 370397 according to 2001 census which takes only 11.61% of the total population of the district. In 1991 the population density of the district was 408/sq.km and the total population of the study area was 238951. Prior to that in 1981 the population is 197389 and in 1971 census the population was 164005. From this data it is seen that the population of the district has increased drastically. With the changing number the density of population (408 in 1991) also changes (Fig.3.5, 3.6, 3.7 & 3.8).

Like other states of India the percentage of male population dominates the female population. In the study area also there is no exception of this fact. Bishnupur has 50.40% male population and 49.60% female population in the year 2001. Sonamukhi has 51.28% male and 48.72% female population in the same year. The study area has a rural agriculture based population. Total rural population of this area is 123366 male and 116585 female while total urban population of two municipalities are 41150 male and 39615 female in 2001. Percentage of population is high in the age group of 30-39(34%) and 5-9(25%). This is because of high birth rate. 61.5% of the total worker are cultivators and 88.1% of total population is agricultural laborers. Though the district
Population density map of Bisnupur Police Station, 1971 and 1981

LEGEND

Population density per hectare
- Less than 1
- 1 - 5
- 5 - 10
- 10 - 15
- More than 15

Uninhabitable
Darakeswar River
Bishnupur Municipality

Area shows:
22° 57' 15" N to 23° 12' 32" N
87° 31' 46" E to 87° 24' 11" E

SCALE
2 0 2 km

Fig. 3.5
Population density map of Bisnupur Police Station, 1991 and 2001

LEGEND

- Less than 1
- 1 - 5
- 5 - 10
- 10 - 15
- More than 15
- Uninhabited
- Darakeswar R
- Bishnupur Municipality

Area shows:
- 22° 57' 15" N to 23° 12' 32" N
- 87° 31' 46" E to 87° 24' 11" E

SCALE

Fig. 3.6
comes under agricultural draught prone area and crop failure is a common factor. But the eastern part especially part of Sonamukhi comes under fertile alluvial tracks. Agriculture is the main occupation. Total forested area of the district in the year 2003-04 is 147.7 hectares which occupies 23% of the total land area. From empirical observation it is seen that total forest cover has been increased. It is due to social forestry by forest department. Area is dominated by tribal population and scheduled class population which characterizes the study area. 16407 people of the study area belongs to schedule tribe and 124983 are scheduled caste population. Tribes usually live in the forest fringe areas. Specific culture of this population enriches Rarh culture. From empirical observation it is seen that concentration of tribal population is higher in the forested area. Bishnupur and Sonamukhi are Hindu dominated. 84.35% of the total population is Hindu while 7.51% are Muslim. Only 0.09% are of Christian community and 0.11% are Jain. Impact of Hindu culture is seen in the culture of the study area.

3.3.1.1 Education

Bishnupur was the capital of the Malla Kingdom. They used to patronize the education system. With their financial help many toll, chatuspathi, moktab and madrasah were developed through out the study area. Later the Christen missionaries also took active role in the development of education in the study area. According to 2001 census report there are one hundred and forty six (146) primary school, eight (8) secondary school, two (2) junior high school, three (3) higher secondary school, one (1) high madrasah, one general degree college, one teachers training college, one diploma engineering college, one degree engineering college in the Bishnupur police station. In Sonamukhi police station there are one hundred and forty eight (148) primary, fourteen(14) junior high,(10 )high ,five(5) higher secondary schools,one general degree college and thirty six(36 )adult literacy centers. Literacy rate is 58.3% in rural areas where as it is 77.1% in urban areas in Bishnupur blocks. In Sonamukhi block rural literacy rate is 58.7% and urban literacy rate is 78.8%. There are 8 libraries in Bishnupur and 7 libraries in Sonamukhi block (DSEO, Bankura & Distrctt Library, Bankura).

3.3.1.2 Health

The study area comes under Rarh plain of Bengal. Agriculture is the main economic activity. Beside agriculture, small scale industry and handloom-handicrafts are another source of income. General health condition depends on income level. A large percentage of population is bellow poverty line (BPL). Malnutrition is the main cause behind ill health. Malarial fever, non malarial fever, cholera, small pox, leprosy are common here. Dermatological problems are also more numerous.
Population density map of Sonamukhi Police Station, 1971 and 1981

Area shows:
23°05'59" N to 23°29'00" N
87°18'45" E to 87°31'28" E

SCALE

LEGEND

Population density per hec
- Less than 1
- 1 - 5
- 5 - 10
- 10 - 15
- More than 15
- Uninhabited
- Damodar River
- Riverine deposition
- Sonamukhi Municipality

Fig. 3.7
Population density map of Sonamukhi Police Station, 1991 and 2001

Area shows:
23° 05' 59" N to 23° 29' 00" N
87° 18' 45" E to 87° 31' 28" E

LEGEND
Less than 1
1 - 5
5 - 10
10 - 15
More than 15
Uninhabited
Damodar River
Reverine deposition
Sonamukhi Municipality

Fig. 3.8
Water borne diseases are also common. The common people mostly depend on hospitals and primary health centre for treatment. There are 2 hospitals, 8 health canters, 42 clinics, 5 dispensaries and 43 family welfare centers in Bishnupur and Sonamukhi block. (District Statistical Handbook, 2004)

3.3.1.3 Caste

Total population of the study area is 370397 in the year 2004. Percentage of Scheduled caste is 33.74% and Scheduled tribe is 4.43% of the total population (District Statistical Hand Book, Bankura, 2004)

3.3.1.4 Religion

The study area was never under any direct control of any Muslim ruler and the Malla Kings were Hindu by religion. So the study area is Hindu dominated. The religion structure of the study area is same as the religion structure of Bankura district.

The religion structure of the district is as follows:

<table>
<thead>
<tr>
<th>Religion</th>
<th>% to total population</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1991</td>
</tr>
<tr>
<td>Hindus</td>
<td>87.15</td>
</tr>
<tr>
<td>Muslims</td>
<td>6.63</td>
</tr>
<tr>
<td>Christians</td>
<td>.10</td>
</tr>
<tr>
<td>Sikhs</td>
<td>0</td>
</tr>
<tr>
<td>Buddhist</td>
<td>0</td>
</tr>
<tr>
<td>Jains</td>
<td>.07</td>
</tr>
<tr>
<td>Others</td>
<td>6.05</td>
</tr>
<tr>
<td>Religion not stated</td>
<td>0</td>
</tr>
</tbody>
</table>

Fig.3.2

(District Statistical Hand Book, Bankura, 2004)

3.3.2 Economic environment

3.3.2.1 Agriculture

In our discussion we have taken into account the natural vegetation of the study area. But to assess the social economic characteristic of an area it is very necessary to know the agricultural background of that area. So in this segment a brief description is given though main thrust is given on the natural vegetation as well as other semi domestic and medicinal plants. Net cultivated area of this district is 4.3 lakh ha. and total numbers of cultivators are 4.47 lakhs (PAO, Bankura 1991). Per
cultivator the availability of net sown area comes to 1.02 ha. Due to continuous division and fragmentation of cultivated land agriculture is becoming less remunerative. About 46% of the net cropped area is under irrigation. The gross cropped area is about six lakhs hectare and cropping intensity is 147% in whole study area (PAO, Bankura, 2000).

Paddy, Wheat, Oil Seeds and Vegetables are the principal crops occupied major of the gross cropped area. Most of the pre kharif and kharif paddy are grown in rainfall condition. HYV crops occupied about 9% in this district considering 100% in Summer Rice (PAO, Bankura 1991).

Wheat is the second most important cereal crop in the district and this crop is cultivated in limited irrigated areas. Among different oil seeds mustard and rape are grown. Beside these Sesame is also cultivated here.

3.3.2.2 Occupation
The main occupation in the Bishnupur and Sonamukhi police station is agriculture. Beside agricultural activity weaving is also an important means of occupation. Waving of silk sari and Baluchari Sari is famous. Besides that a number of people is engaged in conch shell industry, Bell metal industry and making of terracotta and lantern.

3.3.2.3 Main urban centers
To know the economic status of an area we must know about the main urban centers of that area. Bishnupur and Sonamukhi Police Station lie under the district Bankura. Bankura is one of the 19 districts of West Bengal. The shape of Bankura is almost like a triangle. The total area of this district is 6882 Sq. Meter and it is the 4th biggest district in the West Bengal. Bankura was once known as Jungle Mahal because entire district was covered by forest. There are three municipal towns in Bankura district. These are Bankura, Bishnupur and Sonamukhi. Bankura district is consisting of three sub-divisions. These are Bankura Sadar, Bishnupur and Khatra. Under Bankura district there are seven police stations. These are Bankura, Borjora, Chhatna, Gangajalgathi, Mejia, Saltora and Onda. There are six police stations under Bishnupur Sub-division. These are Bishnupur, Soonamukhi, Patrasair, Indus, Kotalpur and Jaipur. Khatra Sub-division consisting of Khatra, Ranibandh, Raipur, Simlapal, Sarenga, Tandangra, Indpur.

The study area lies under Bishnupur Sub-division. There are only two urban centers namely Bishnupur and Sonamukhi in the study area. The
amenities available in these urban centers are educational, medical, drinking water, post & telegraph, market and communication i.e. bus stop, railway station etc.

3.3.2.4 Transport & Connectivity

Transport and connectivity is an important factor for the economic and cultural growth of any place. Bishnupur and Sonamukhi are attractive for ancient temples, deep forest in the lateritic track, and its indigenous handicrafts and handlooms. Tourism is an important source of income. So we have taken transport and connectivity in our discussion.

3.3.2.4.1 Rail

Bishnupur is an important rail station in South Eastern Rail Way division. It is well connected with Kolkata and other places of India. It is 200 km. away from Howrah and 84 km from Kharagpur. There are five (5) trains connecting Howrah and Bishnupur. They are Rupasi Bangla Express, Aranyak Express, Purulia Express, Shiromoni Passenger and Howrah Chakradharpur Passenger. Bishnupur is directly connected with Delhi, Uttarpradesh, Bihar, Jharkhand, Assam and Orissa by Nilachal Superfast Express, Patna Ernaculam Express, Guahati Puri Express and Rajdhani Express. Sonamukhi is not well connected by rail. Very recently a new railway track is developed from Bankura to Raina through Sonamukhi. Bishnupur-Tarakeshwar rail line is under construction. This will decrease the distance between Kolkata and Bishnupur(South Eastern Railway Time Table, 2006).

3.3.2.4.2 Road

Both Bishnupur and Sonamukhi are well connected with different parts of the state of West Bengal, Bihar, Jharkhand and Orissa. NH-60 (Baleswar to Ranigang) road passes through Bishnupur town. State High Way 2 directly connects Bishnupur with Kolkata.

The distances of different towns of West Bengal and Bihar from Bishnupur are

<table>
<thead>
<tr>
<th>Town</th>
<th>Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kolkata</td>
<td>155 km</td>
</tr>
<tr>
<td>Patna (Bihar)</td>
<td>230 km</td>
</tr>
<tr>
<td>Durgapur</td>
<td>80 km</td>
</tr>
<tr>
<td>Purulia</td>
<td>110 km</td>
</tr>
<tr>
<td>Ranchi (Jharkhand)</td>
<td>150 km</td>
</tr>
<tr>
<td>Kharagpur</td>
<td>90 km</td>
</tr>
<tr>
<td>Midnapore</td>
<td>80 km</td>
</tr>
<tr>
<td>Burdwan</td>
<td>100 km</td>
</tr>
</tbody>
</table>

(Source: R.T.O, Bankura, 2006).
3.3.2.4.3 Others

Ferry services are another means of transport. They are mainly used for transportation of goods.

3.3.3 Historical environment

In the previous paragraph we discussed about the physical environment subjectively. Later we discuss about the population characteristics of the study area derived from census report. But data from census report does not make conclusion. So we have to delve into historical report micro in specific and macro historical report in general so as to know the social environment.

Bishnupur never came under Muslim Raj. The King of Bishnupur was an aboriginal. So the local people never thought that they are alienated from King. They never came under British rule directly.

Here is a brief history of Malla Kings of Bishnupur

Mr. R.C. Dutt (Dutt, 1874), said that “when Hindus were still reigning in Delhi and the name of Mushalmans yet not heard in India the existence of ancient Rajas of Bishnupur can be found. They could count five centuries of rule over the western frontiers tracts of Bengal before Bakhtiyar Khilji wrested that province from Hindus (Blochmann, 1968). The mushalman conquest of Bengal however made no difference to the Bishnupur Princes. Protected by rapid current like Damodar by extensive tracts of shrub wood and Sal jungle, as well as these jungle kings were little known to Musalman rulers of fertile portion of Bengal. The kings of Bishnupur were supreme within their extensive territories. At the time of Mughal the army made in appearance near Bishnupur with claims of tribute which was probably sometimes paid. The subadars of Murshidabad never had their farm hold over the Rajas of Bishnupur. As the Burdwan Raj grew in power, the Bishnupur finally fell in to decay. Maharaja Kirti Chand of Burdwan attacked the Bishnupur Raj and added to his Zjamindari. The Marathas completed the ruin of the Bishnupur (Malley, 1908).

The country of Malla Raja was known as Mallabhum, which includes Bankura, Onda, Bishnupur, Kotulpur and Indus. The term the Mallabhum means the land of wrestler. The name “Malla” is a Sanskrit term, but it became an aboriginal one and becomes the title of Bishnupur Kings. Bishnupur has been shown as an ancient place in books of Cunningham also (Cunningham, 1871). Malla kingdom was established by Adimalla in the Year 694 A.D.. The main kings are:
1st Stage

Bir Malla
(1501)

Dhir Malla
(1554)

Dhir Malla (2nd) 1620

Raghunath Malla
(Raghunath Singhadev)
1626

2nd Stage

Bir Malla/ Bir Singha (1656)

Durjan Singhadev (1682)

Raghunath Malla/ Singhadev (2nd), 1702
Gopal Singhadev (1712)

3rd Stage

Gopal Singhdev (1712)

Chaitanya Singhdev (1784)

Mahadev Singhdev (1801)

Gopal Singhdev (2nd) (1809)

After that Bishnupur becomes a municipal town in 1873.

Fig.3.3
Sonamukhi was previously called "The village of Weavers". In 'Deshabali Bibriti' of Jaganmohan Pandit in 17th Century, besides tamtubaik it was allocated as the 17th village of 'Swarna Banik' (Gold traders), gandha banik (Spice traders). The name Sonamukhi comes from goddesses Subarnamukhi. Now it is a municipal town since 1886 (Malley, 1908).

**Historical ups and downs**

1757 Before the battle of Palassy the Mallabhum was under Mughal dynasty.

1760 1st relation between British and Malla Kings. Mirkashim was Nawab and the Maratha reign established at Bishnupur.

1765 East India Company get the right of Dewani and Bishnupur comes under Dewani system.

1770 A supervisor appointed for Bishnupur and Birbhum region.

1772 Birbhum, Panchet and Bishnupur are under the supervision of one collector.

1773 Separate collector was appointed for Bishnupur.

1786 Pie Saheb was appointed as collector of Bishnupur on 20th April.

1789-90 2nd paharia revolution and British company abolished from Bishnupur.

1793 Bishnupur paragana was under Bishnupur.

1797 Johncheap was appointed as commercial resident and emphasis was given on small industries.
1801-02 Sir Charls Blunt was appointed as commissioner of Bishnupur.

1805 Jungle Mahal created by 18 Regulation Act and a Magistrate was appointed.

1872 Total area of Bankura district was 1346 sq.miles. Therefore five police stations namely Bankura, Chhatna, Onda, Gangajal Ghati and Bishnupur.

1873 First census operation in Bengal, establishment of Bishnupur Municipality.

1881 Present new Bankura district 14th March 1881. Symmetry between Dewan area and administrative boundary. Induš, Patrasayer and Sonamukhi came under this district. District Magistrate was eminent Historian Ramesh Chandra Dutta.

1886 Establishment of Sonamukhi municipality.

Fig.3.4

3.3.4 Political & Administrative environment

In the year 1858 East India Co. transferred their power to England Queen. After that decentralization of power and self-regulation was started in Bankura with other regions of Bengal. After the establishment of Bankura (1869), Bishnupur (1873) and Sonamukhi (1886) municipality established as a self-governing unit. In 1882 Regulation Act enacted here. In 1871 Bankura District Board Committee was formed mainly to collect Road cess. After independence Bankura District Board Committee was known as Bankura District Board. Road, Bridge, cannel, housing, English and Bengali medium school, water supply were under the supervision of the District Board up to 1906. After Regulation Act the Government decentralized in District, Sub-division, local level etc in 1919. After the rise of Panchayat system in 1964 the self-governing body system was abolished. Panchayat system developed in four levels i.e Zilla Parishad, Anchal Parisad (Permanent committee), Anchal Panchayat and general
people. This system was popular up to 1978. In 1973 the Government of West Bengal constitute Panchayat by Best Ben Act, XII of 1973) which brings drastic change in all levels. The four-tier system changes to three-tier system and the new structure is Village Panchayat ,inplace of Anchal Panchayat. In block level, Panchayat Samiti in place of Anchalik Parisad and Zilla Parisad in District level. At present there are 22 Panchayat Samiti in Bankura District and in the study area there are 14 Panchayat Samiti. In 1973 the Governor of West Bengal constitutes Panchayats (By West Bengal Act, XLI of 1973). At present there are 6 Gram Panchayat in Sonamukhi Block and 8 Gram Panchayat in Bishnupur. According to the constitution of India members of Gram Panchayat are elected by Panchayat election. The two municipal town of the study area are Sonamukhi and Bishnupur and members are selected by municipal election. Last 10 years Panchayat data shows the structure of the elected members of Panchayat general election in the year 2003. Left Front governs most of the panchayats (BDO, Bishnupur, 2004).