

CHAPTER- II

REVIEW OF LITERATURE

2.1 Theoretical Review

Indigenous knowledge (IK) refers to the empirical knowledge of group of long time inhabitants of as specific local and the principles underlying its generation, organization, meaning and diffusion. It consists of dynamic insight and techniques gained through trial and error in responses to the changing environmental and socio-economic circumstances and opportunities (Gurung, 1993 quoted in Bhadrai, 2007). Indigenous knowledge is an important aspect of a society's culture and technology. The rural people in the course of centuries have traditionally utilized the knowledge skills and technologies to exploit the nature. Indigenous knowledge is the sum of experience and knowledge of a given group that forms the basis for decision-making in the face of familiar and unfamiliar problems and challenges (Warren and Cashman, 1992 quoted in Bhadrai, 2007).

Indigenous knowledge can be defined as " the sum of experience and knowledge of given ethnic group that forms the basis for decision making in the face of familiar and unfamiliar problems and challenges " (warren and cashman, 1988 quoted in Joshi 1997)

Indigenous knowledge is the major resources of the poor who have limited access to basic and materials resources. It represents the richness of the poor. The study of indigenous knowledge system would encourage the local people to feel a sense of legitimacy in their knowledge and belief system; such introspection could contribute to the empowerment of local communities, enabling them to take an active role in shaping their own future (Gurung 1994: 27 quoted in Bhandari, 2007). It does not mean that indigenous knowledge systems are always panacea, they do have limitations. Indigenous knowledge and technologies are, in some cases, less effective to solve modern problems and we must always guard against overstating the unique role and relevance of indigenous knowledge (Rohana, 1993 quoted in Bhandari, 2007).

The indigenous knowledge system may appear simple to outsiders but they represent mechanism to ensure minimal livelihoods for their rural dwellers. The diversified

ethnic groups living in the different ecological region of Nepal exhibit profound knowledge about the use and management of plant resources (Bhandari, 2007).

The knowledge of indigenous people, especially in rural domains, is immense and it is this very knowledge system that has sustained them and the rural areas and mountains throughout the ages. Rural people are not only familiar with local plant and animal species but many also understand the ecological interactions of various components better than most formally trained natural scientists. They know which varieties of their crops are resistant to common plant diseases and pests, which are more productive, which taste better or have a better flavor, and which have a ritual or religious significance. They are responsible for collecting, selecting, and storing seeds (Paudel, 2005).

Mountain and rural people have a great wealth of knowledge that is passed orally from one generation to another to protect the environment and conserve diversity (both biological and cultural) in a variety of ways. In many communities, women are the safe keepers of agro-biodiversity and they possess immense knowledge about the food resources and seed banks of their community. Much of this knowledge has never been researched or documented and is in danger of being lost forever as those entrusted with its keeping die and the younger generation either migrate to other developed areas or have less interest in it. This loss is not only detrimental to communities but to society at large. In a time of increasing globalization, nurturing and homogenization, cultural and indigenous knowledge needs not only protection but also perpetuation (Paudel, 2005).

According to Alcorn (1995) ethnobotany is the study of plant human interrelationships embedded in dynamic ecosystems of natural and social components. Ethnobotanical studies specifically oriented towards traditional health care systems and medicinal plants utilize ethnopharmacology as a major field. It is interdisciplinary by nature, encompassing subject areas like anthropology, botany, ecology, economic and linguistic; within these disciplines, there are four interrelated efforts:

- a. Basic documentation of traditional botanical knowledge including ethnobotanical inventory.

- b. Quantitative evaluation of the use and management of botanical resources and impact on the surrounding environment and biosphere;
- c. Experimental assessment of human interaction with plants and the natural environment ;
- d. Applied project which seek to examine the value which local people attain from their ecological knowledge and recourse (Rastogi,1998 quoted in Paudel, 2005)

Ethnicity defines individuals who consider themselves, or are considered by others, to share common characteristics which differentiate them from the other collectives in a society, within which, they develop distinct behavior. Davit Resman firstly used the word 'ethnicity on 1953. This word ethnicity was included on American dictionary from 1973. According to the American dictionary, "Ethnicity means condition of belonging to a particular, ethnic group and ethnic pride." Ethnic is attitude of person to identify with a group and differentiating from others. We are attached with some group because of ethnicity. Oxford dictionary defines, "Ethnicity as having to do with a group of people who have a common national or culture tradition (Parajuli, 2007).

Member of ethnic group see themselves as culturally distinct from other group in a society. Different characteristics may serve to distinguish ethnic group from one another, but the most usual are language, history or ancestry, religion and style of dress. Existing of "We feeling and " "Them" Concept is on them. After the restoration of democracy (1990) these ethnic concept became as a faction. Nepal Government declared 61 nationalities on 1996(Parajuli, 2007).

Every human society has developed medical system that is the pattern of social institution and cultural traditions, which evolve from deliberate behavior to enhance health. Ethno medicine could be understood as "those beliefs and practices relating to diseases which are the product of indigenous cultural development and are not explicitly derived from the conceptual framework of modern medicines".(Hughes: 1968 quoted in Bhandari, 2007).

The rural areas of the Third World, for their misfortune or good luck, are still safe from, or deprived of, modern system of medicine, and treatment through herbal medicine is still in vogue there successfully. Treatment of diseases with botanicals

should be declared a compulsory subject in the curriculum of all medical educational institutions, including those teaching the so-called modern medicine (Adly, 1982).

Tharus, indigenous groups, acquired the knowledge and experience about their natural environment in local classifications and use (Boker, 1999). They are probably the original inhabitants and largest tribes in the Western Terai (UNESCO 2006), having 6.75% of the total population of the country (CBS 2003). The religion and culture of the Tharu, like that of other tribal peoples, is a complex system of beliefs and practices inter-woven with rest of their culture (Rajaure, 2005). Tharu are the disadvantaged groups and even the urbanization Process has not made much impact in their livelihoods (Sharma 2006). The indigenous skills, technologies, and expertise of the Tharus are age-old, which they are still capitalizing as one of their coping strategies. They also have knowledge of herbal medicines for treatment but they are little aware about the modern medicine (Singh, 2006).

Nowadays, these Tharu communities are facing complex problems and relative threats to their livelihood. Not only are they confronted with dispossession of their lands and resources, and physical persecution, but they are also faced with the appropriation of their collective knowledge developed through the ages. Traditional knowledge of medicinal plants and crops is being taken by multinational companies, while traditional songs and designs are being commercialized for the tourism industry. The issue of indigenous cultural property rights is becoming more and more urgent for these indigenous peoples (Bengwayan, 2003). These people are still largely dependent on local food production and agriculture-related incomes. Moreover, these people effectively control a high share of resources and have the greatest capacity and responsibility for environmental husbandry (Scherr, 2003).

The multi- dimensional aspect of health is being accepted in recent years. The definition of which comprises broadly the physical, mental and social aspect may be further elaborated in philosophical, cultural, socio economic, educational, environmental, nutritional, curative and preventive (park and park 1986 quoted in Bhandari, 2007). Health is philosophical aspect because it deals with the principle underlying the action and behavior of human health. Health is influenced by cultural factors e.g. Dietary habits among particular ethnic groups and child rearing practices etc. (Paneru 1980 quoted in Bhandari, 2007). Health is highly influenced by socio

economic and educational status of any individual as well as the community (Bhandari, 2007).

Knowledge on health is contented with a wide range of care/healing or medication techniques or procedure. Series of such techniques or procedure do constitute a system. Health care system is a functional whole where material and non-material components are set. Knowledge and experiences on health care are the culturally developed aspect of human civilization. Obviously, knowledge and practices are varied according to spatial and temporal variations. Natural environment varies from place to place and health problems are also different and efforts are made accordingly and separately in order to cope with area and time specific health problems. This way, human world contains different kinds of health care practices (HCPs) called as "pathies" or "therapies". Foster and Anderson (1978) have mentioned how human communities possess humanistic and naturalistic type of aetiological consideration of health problems and varieties of health care practices, viz. humoral therapy in Latin America, Ayurveda in Indian sub-continent, Oriental/traditional medicine in china and faith healing in many communities (Acharya, 1999).

Transformation and adoption of knowledge, attitude and practice (KAP) on health has recorded a long trend of (pre)historical efforts. Parallel lines with primitive forms of healing and highly sophisticated modern therapies can be found in most of the areas of the world (Acharya, 1999).

2.2 Review Empirical Studies

More and more social scientists now view people of rural communities in the developing world as pragmatic with regard to medical options. In Nepal, traditional forms of health care exist and it is commonly used by rural communities. Subedi states that, "these alternative types of health care services are still widely used today". Furthermore, he sees, "folk and traditional health care is both socially and culturally closer to the people, whereas modern health care has been criticized for being unacceptable, costly and unsatisfying to most of the population". He continues with, "A number of studies in Nepal show that. Durkin-Longley found that a family first responds to the symptoms of an illness by preparing home remedies (Gibbon, 1999).

Despite the facilities provided by government on health care sector, more than 50 percent of the health problems never reach the health services. They are treated

through a system of herbal medicine and other shamanistic practices which are based on home remedies, commercial sales. The fact that sick people resort to medicine with local resources and local health care providers (Gartoulla, 1999)

It is estimated that only 15-20 percent of the population of Nepal living in and around the urban areas have access the modern medicinal facilities, where as, the rest depend on traditional medicines (Sharma et al. 2004).

Harold C.Conklin, a professor of Anthropology at Yale university in the united States, wrote a doctoral dissertation in (1954) entitled "The relation of Hununoo Culture to the plant World", which describe the ethnobotanical knowledge of an indigenous group in Philippines, which is considered one of the classic work of ethno- science because it introduced an empirical approach to the natural environment (Bhandari, 2007).

Traditional society, indigenous people has been cure the diseases by the traditional way, as we knew that man and plant kingdom has close relationship for the cure of diseases, they use plants as medicine by their traditional techniques. Indigenous techniques of healing practice depend upon the socio culture of their local environment (Bhandari, 2007).

The tradition of Tharus revolves round the forest that provides the essentials of daily life food, shelter and clothing. The traditional use of plants by the Tharus and their indigenous knowledge concerning it reflects the relationship between the Tharu's culture and their local environment. So, it is essential to know the culture environment relationship in order to have better understanding of the indigenous knowledge of the Tharus (Bhandari, 2007).

Historically plants used in traditional medicine by the indigenous populations across the world have produced some of the most useful modern day pharmaceuticals (Medora 2001 quoted in Joshi and Joshi 2001). Of the 75000 plants used in different system of medicine, more than 20000 species of higher plants are used in traditional treatment practices of indigenous culture living around the world (Ved Prakash, 1998). Over 15000 species are identified in Asia as drug yielding plants, of which about 8000 in India and 7000 in China are being used in different system of health care (Chaudhary et al 2004). It is estimated that various communities in Nepal use

approximately 1000 species of wild plants in traditional medicinal practice (Chaudhary 1998), a substantial number still await documentation. (Kurmi and Baral, 2004)

Nepal is land of topographic contrast floristic diversity and ethnic variation (Shrestha, 1985:63). There is a close affinity between man and local vegetation. Nepalese flora have been studied either in floristic or ecological angle. Thus the indigenous knowledge of medicinal plants and ethno botany of ethnic group is a subject of more than scholarly or historical interest in Nepal (Sacherer, 1979:45 quoted in Bhandari, 2007).

The main aim of ethnobotany is to document the knowledge about plants that had come through generations and use the knowledge for the benefit of the society. Its importance has been realized that it brings to light numerous less known or unknown use of plants, some of which have potential wider usage (Chaudhary, 1998 quoted in Rajbhandari, 2001)

Historically plants used in traditional medicine by the indigenous populations across the world have produced some of the most useful modern day pharmaceuticals. It is therefore, very important that studies Ethnobotany and Ethnopharmacology continue if the preservation of traditional knowledge is the goal (R.S. Medora, 2001, Forwards in Joshi and Joshi, 2001 quoted in Rajbhandari, 2001)

The science of ethnobotany has recently received much attention in certain parts of the world, particularly in the underdeveloped and/or developing countries, where small or large portions of populations still depend on natural resources in practically indigenous condition and the impact of modern system of medicine has not reached them (Jain, 1981 quoted in Rajbhandari, 2001)

Ethno-botany is a rapidly expanding science. In last nearly three decades, it has considerably expanded both in its concept and scope. Beginning with the study of plants used by tribal for food, medicine, and shelter, it now include the studies like conservation practices of tribal ethnopharmacognosy, ethnomusicology etc. The literature on this subject is pilling up at a rapid pace (Pandey, 2000).

Nepali people have been utilizing the plants and plant products since time immemorial. Many people still do not have access to the modern medicinal facilities, and entirely depend on the plant resources. It is estimated that various communities in Nepal use approximately 1000 species of wild plants in traditional medicinal practice and majority of which await proper documentation (Chaudhary, 1998 quoted in Rajbhandari, 2001)

Review of literatures indicate that the botanical exploration of 1803 AD by Buchanan- a French medical professional could be called as the first ethnobotanical work in Nepal, however the first paper on this subject in Nepal was published by Pandey (1955), followed by more works from the mid 70s to till date. Rajbhandari (2001) has compiled majorities of such publications followed by an excellent book on Nepal's ethnobotany by Manandhar (2002). (Kurmi and Baral, 2004)

A good information on the ethnobotanical and medicinal uses of the Nepalese plants can be found in the Chandra Nighantu, a herbal pharmacopoeia of medicinal value of plants, the manuscript of which was initiated by the then Prime Minister Bir Shamsheer Jung Bahadur Rana in the late 19th century to use and develop traditional medicine system based mainly on Ayurveda in Nepal. Late Pandit Kaviraj Shree Ghana Nath Devkota was assigned to prepare this Nighantu which was named as Bir Nighantu (Malla, 1999 quoted in Rajbhandari, 2001). This interesting and valuable document could not be completed during the regime of Bir Shamsheer. Later, Chandra Shamsheer, who succeeded him as a Prime Minister, wanted to change its name into Chandra Nighantu after completion (Devkota, 1968 quoted in Rajbhandari, 2001). This is a hand-written herbal encyclopedia including about 840 colour plates, 750 of medicinal plants and 90 of animals, and one thousand pages of their explanations (Kanai, 1971 quoted in Rajbhandari, 2001).

Out of 5856 flowering plants recorded in Nepal (HMGN 2002 quoted in Sharma et al 2004), 690 species are considered having medicinal properties (Malla and Shakya, 1984 quoted in Sharma et al. 2004). This comprises about 12 percent of the total number of flowering plants of Nepal. This list includes 510 wild species, 120 cultivated and naturalized, and 60 exotic. The medicinal and aromatic plant Database of Nepal (MAPDON) has listed 1624 medicinal and aromatic plants, which are commonly available in crude drug market, under cultivation and in wild form

(Shrestha et al. 2000 quoted in Sharma et al. 2004). A proper documentation of Nepalese medicinal plants is still lacking (Sharma et al. 2004).

Manandhar (1985) studied 79 species of medicinal plants used by Tharu people in Dang-Deukhuri district with their traditional use, mode of preparation, dose etc. he has noted that only the elderly Tharus have a sound knowledge of the medicinal value of plants. So it is about time their knowledge was recorded to unfold new vistas of unexplored medicinal value of plants (Bhandari, 2007).

Department of medicinal plants has contributed on the investigation of medicinal and aromatic plants as well as other useful plants of the country. The "medicinal plants of Nepal" (1970, 1984, 2007) published by the department accounted 701 species of medicinal plants from Nepal (DPR, 2007).

Malla and Shakya (1984-85) compiled a list of 630 medicinal plant species from Nepal including ecological distribution.

Tiwari and Joshi (1990) enumerated 73 plants species in their paper "Medicinal plants of Nepal": 1. this paper covers some silent feature of medicinal plants of Nepal. It comprises Latin name, Sanskrit name, Nepali name, Family, distribution, diagnostic, characteristics, Therapeutic uses, parts used and Ayurvedic preparation (Bhandari, 2007).

The ethnobotanical surveys revealed a rich knowledge about the medicinal plant resources and their management (Chaudhary et al., 2000 quoted in Rajbhandari, 2001).

Rijal (1994) has described 345 species of plants with their use categories of Padampur of Chitwan. Tripathi (1996) has focused 46 medicinal plant uses by local people in the periphery of RCNP (formerly); now Chitwan National Park (Bhandari, 2007).

Maheshwari et al. (1981) studied the ethnobotany of the Tharu of Kheri District Uttar Pradesh of India. Altogether 62 medicinal plants were reported with their uses for 26 diseases (Bhandari, 2007).

In the ethnobotanical study of Palpa area P. Shrestha (1985) found altogether 83 plant comprising 29 medicinal plants, 23 poisonous plants, 5 fodder plants, 2 green manure yielding plants and 5 plants of miscellaneous usage. These data are primarily based

upon the local information characterized by traditional beliefs and experiences of native people of different caste and creeds like Magar, Tamang, Gurung and Chhetri of Palpa. Manandhar (1990) had studied the folklore medicine of Chitwan district and counted 74 different plant species to treat 24 ailments (Pandey, 2000).

Manandhar (1987a) described the traditional medicinal plants used by tribal people of Lamjung district. He has described the traditional uses of plants by the local people, their way of preparation and dose. Manandhar (1987b) presented an ethnobotanical profile of Manang valley providing the information of plants along their traditional uses (Pandey, 2000).

Manandhar (1991) studied medicinal plant lore of Tamang tribes of Kabrepalanchowk district which provides a glimpse of medico-botany of this tribe. Both wild and cultivated 95 plant species representing 88 genera under 47 families of common use for the treatment of various ailments were counted (Pandey, 2000).

Manandhar (1989a) published a book named "useful wild plants of Nepal" and describe 102 plants with their vernacular name, uses, mode of preparation dose and chemical composition. In (1989b) he described 53 plant species used as ethnoveterinary medicinal drugs in the rural area of central development region of Nepal. In (1989c) he presented traditional physiotherapy of Danuwar tribes of Kamalakoij in Sindhuli district (Pandey, 2000).

Bhattra (1992) studied medicinal ethnobotany in the Karnali zone. He has reported 62 plant species including their local name, family, use and mode of preparation and dose (Pandey, 2000).

Jain (1963) has studied the ethnobotany of the tribal of Madhya Pradesh. In (1963b) he had studied the plants used in medicine by tribal of Madhya Pradesh. He described the use, mode of preparation and dose of the medicine. Jain et. al (1981) described the medicinal use of plants on the basis of local information from local herbalist. Agrawal and Shah (1968) have studied unreported medicinal plants of India describing the uses, mode of preparation with short information of plant species (Pandey, 2000).

Majpuria (1985) has discussed the both cultivated as well as useful wild plant species of Nepal in "Nepal Nature's Paradise" (Pandey, 2000).

Gartoulla, Ritu Prasad (1999) stated 82 traditional treatment techniques of different problems (diseases) by using more than 400 herbs/herbals (one herb for multiple problems also is under therapy) with their local name, botanical name, mode of preparation and doses in his conference paper Herbal Medicine and Therapy Practices in Nepal edited in Anthropology and Sociology of Nepal.

Sapkota, Sarkar, Shakya and Shrestha (1994) have investigated on "The indigenous medicine and non-commercial food plants belonging to 32 different families of 47 species of edible plants. Tiwari and Joshi (1990) enumerated 73 plant species of Nepal covering salient feature of medicinal plant of Nepal (Pandey, 2000).

The socio-cultural, economic and religious practices of the ethnic groups are in one way of other linked to the plants and plant products. So, in Nepal there is remarkable ethnic and biodiversity and wealth of IK of plants with economic value (Pandey, 2000).

Many traditional systems of medicine are now being gradually documented in Nepal. This is particularly true for folk and ethnomedicines using plant species, which pass from one generation to other simply by words. Documentation of indigenous knowledge on uses of plants among the people is being welcomed these days. It not helps conserve such plants but also for using them as future prospects of therapeutic development. The World Health Organisation has estimated that about 80 percent of the populations in developing countries depend on traditional medicine for their primary health care needs. Many such plants also have other domestic uses. It is therefore very important that studies in ethnobotany and ethnopharmacology continue so as to preserve traditional knowledge. (Kurmi and Baral, 2004)

It is necessary to attract new generation to conserve the traditional practices and also to manage natural resources (Shrestha). There is an urgent need to document, review, transmit, promote and integrate the indigenous knowledge system with modern knowledge system before being lost forever. For the institutional development of IK system, it is necessary that they be combined with the development programs and must importantly given legal status by the governmental policy (Pandey, 2000).

Nepal is very rich in plant wealth as well as diverse ethnic group having different culture. Different culture group has their own traditional techniques, belief and cultural value to utilize the medicinal plant species. Among this, Bardiya Tharu has

their own indigenous system and knowledge to utilize plant as medicine and the preparation, distribution, dose in their local environment. This research will help to make the documentary about indigenous knowledge on the uses of plant species as medicinal purpose.

Hence, the indigenous knowledge on the use of medicinal plants by the rural ethnic caste like Tharus community can contribute in the field of nature conservation and ecological as well as environmental protection aspect.

CHAPTER- III

METHODOLOGY

3.1 Rationale of Selection of the Study Area

Though there are several districts to be assessed about the indigenous knowledge system on using medicinal plants. Bardiya district was chosen as the study area of this research because this district covers the majority of the Tharu community (51.63% according to population census 2001). Within this district mainly two types of Tharus: Dangali and Desauri are being inhabited. As mentioned in proposal two VDC: Motipur and Belwa were selected because Bathuwa gaun of Motipur VDC ward no 2 represent Dangali Tharu and Banmuduwa gaun of Belwa VDC ward no 2 represent Desauri tharu. Not only that Motipur VDC is more developed and affected by modernization and urbanization due to development of Bansgadi market center of this VDC. But Belwa VDC is known as remote and backwarded and less affected by modernization and urbanization then Motipur VDC. So far very few studies have been carried in this district and the Tharus Community of this district is traditionally famous for conservation, utilization and management of forest resources from past history of immemorial time; the study area is very near and attached to the Bardiya National park which is the store house of the bio-resources and The Tharu people living in the study area are mostly dependent on National Park for their need of forest crop and medicinal plants from the past history so the area was taken as the study area.

3.2 Research Design

The main objective of the present study is to document the range of the local people knowledge of native plants and possibility of their exploitation and also to make comprehensive list of medicinal plant as well as the traditional use pattern of these plants by the local people in one or another way. It also aims describing the general pattern of Tharus, their cultures and utilization of plants and plants products in their subsistence pattern. So, this research design applied exploratory, descriptive as well as Evaluatory methods. The exploratory method was preferred because it explores the Tharu cultural response to their medicinal plant resource and native system of classification and use of these plants. Descriptive was because it is more critical, analytical, holistic study, it has been focused on the use of medicinal plants in different disease, mode of preparation, dose and traditional practices. Evaluatory

was because it compares the trend of IK system among different age, community and different group of Tharu people.

3.3 Nature and Sources of Data

The data collected were both qualitative and quantitative type. Both primary and secondary data were used in this study. The secondary data were collected from published or unpublished articles (VDC, DDC, local clubs), ethnographies, various reports related to ethnobotany, export records, various books journals, documents from related literature, research studies, District Profile. DFRS, DPR, Department of forest, District Forest office, Bardiya National Park, WTLCP Bardiya, TAL Bardiya, DDC Office, TUCL, BASE Bardiya, UNYK Nepal, VDC offices, and Tharu Historical Museum etc are the main sources of secondary data. But main part of the research depends on primary data. The primary data were collected from the fieldwork with the help of household survey, key informants interview, observation (both direct and participants), focus group discussion, case studies.

3.4 Universe and Sampling

Motipur VDC-2 and Belwa VDC-2 of Bardiya district were selected purposively for this research. 209 tharu household are in Bathuwa village of Motipur VDC ward no 2 and 105 household inhabitant in Banmuduwa village of Belwa VDC ward no 2 were selected as universe of this research. Out of 209 household from Bathuwa village 63 household and 105 household from Banmuduwa village 32 household i.e. 30% of the universe were selected by using stratified random sampling. Besides these 8 traditional healers (Gurawa or Baidawa) from Tharu community and 1 traditional healer from paharia community were purposively selected as key informants. 2 local teachers, 2 social workers, 2 NGO represent from tharu community are also asked as key informants during the time of field visit. 2 youth group from local club and women group were selected for focus group discussion. Key informants for this research were selected by adopting Purposive sampling and respondents were selected by using stratified random sampling. For stratified random sampling, different cluster were made as if it could represent the whole settlement of the study area. In this way total $63+32=95$ respondents, $9+2+2+2=15$ key informants and 3 different focus groups were selected for the field data collection. Name of key informants are mention in annex-1.

3.5 Data Collection Tools and Techniques

Both qualitative and quantitative social research techniques were applied in this research. Use of different research technique is a part of the triangulation process to verify the validity of research outcomes (Kane 1985). Reconnaissance survey was carried out in the field. In this time the questionnaires were tested. After having necessary modification of the questionnaire in the field, the final questionnaires were prepared and the survey was executed. Field observation, focus group discussion, key informants interview, household survey, and different PRA technique were executed. The data concerning to this study was collected by the following technique:

Household survey

A set of questionnaire was prepared for the household survey. The questionnaire was used to acquire data about demographic feature, their socio-economic-cultural status, land size, food security, cattle farming, and tradition on the use of medicinal plants, their custom, belief and attitude toward conservation, management and proper utilization of medicinal plant resources. The structured questionnaire used in this study is given in the Annex-2.

Observation

Observation is one of the most important techniques of data collection for the social problems (Hans Raj, 1992). Both the direct and participant observations have been applied to collect the relevant information. Participant observation is the key technique to collect practical insight of the problem. It also minimizes the fallacy and inaccuracy in the information collected. This technique enables the researchers to mix up with the social practices and tradition of the people under study. The observation was conducted in both villages selected as the study area (Bathuwa of Motipur VDC and Banmuduwa of Belwa VDCof Bardiya District). This approach was focused to those Tharu people who have been exploiting, processing, and spinning the local plants in their daily life for medicine and any other purposes. Both participatory as well as non-participatory methods of observation were applied.

This study has applied participant observation to observe different varieties of plants using for different purposes, their traditional ways of preparation of different medicine, rituals and ceremonial activities. Direct observation was used to observe the village settlement, agricultural practices, physical infrastructure development, household daily routine, and inter relationship with natural resources. These

observations were utilized to triangulate the information obtained from focus group discussion and household survey. Check list used in observation is given in Annex-3.1.

Key informants Interview

One of the main techniques of collecting information used was an unstructured interview with the key informants. This technique was an important tool employed to generate the required data. It has been used to collect information about rituals, cultural practices, basic information about land and forest resources in the past, peoples attitude towards the indigenous knowledge system on the use of medicinal plants, trend of traditional healing practices among the community, impact of modernization and urbanization on that indigenous knowledge system, status of medicinal plant resources, way of conserving that type of IK and medicinal plant resources, etc. traditional healer either professional or nonprofessional (guruwa or Baidawa) were consulted about the ritual and medicinal plant and mode of their use as they have better knowledge of plants in medicinal significance as well as ritual significance. Local elites, teachers, social worker, NGOs represents etc from Tharu community are also selected as key informants. Each and every key informant was interviewed from 1 to 2 hours in their leach time either at their home or their field where they can give time for interview. The check list used for KII in this study is given in the Annex-3.2.

Focus group discussion

The required data to meet the set objectives were gathered in the field using group discussion. People in the study areas were called in their appropriate time schedule for discussion according to their ease places. The group was formed by both the male and female, youth and old age in the Village. The discussion was conducted about the use of local medicinal plant resources on the use of various diseases in different time. Especially, the groups of different categories of Tharu people were discussed in about the preparation technique, dose, storage, and availability of medicinal plant and their knowledge about use, their attitude and belief on that IK system on the use of medicinal plants etc. such groups were formed with 10 to 25 member from relevant category. The checklist used in FGD is given in the Annex-3.3.

Participatory Rural Appraisal (PRA)

Social map was made by using PRA technique with active participation from relevant local people. People from different occupation were actively participated for that purpose. Social map made by local people in participatory manner were given in the Annex-4.

3.6 Data processing and Analysis:

The data collected from the field (primary) and secondary sources were analyzed descriptively. Field editing was employed for the raw data generated during the fieldwork, and was on later with secondary data were edited. Thus, processing and analysis was made to avoid data error by comparing them with different data generated from different sources. Then the data was coded and classified into descriptive and numerical characters.

The data so collected were analyzed both qualitatively and quantitatively. Since the ethno study is more precisely in the qualitative study, the analysis was focused on descriptive way. However, different tables, map and graphs have been presented/ employed to more quantifiable and to reduce the descriptive statements. Description was made precise, simple, with more anthropological interpretation. Opinion of the respondents was quoted in many places in their original form to explain events necessary for the work's objectives.

3.7 Limitation of the Study

This study has focused in a very limited area because it is mainly concerned with the partial fulfillment of thesis paper submission for the Master Degree of Rural Development. So that sources and time is limited. Study focused on a small village Community and the generalization will not be much useful to apply in other areas of Nepal. This is not detailed research on the use of local medicinal plants in their environment. So, it is necessary to carry out more detail researches on the topic to get the real and detail information about the study topic.

Every research work has its own limitation as in the case with the present study. It is a fact that every social researcher has to face difficulties and constrains during field work. Such difficulties and constrains faced by the researcher in this study are as follow:

Limitation of Time

Since IK systems on the use of medicinal plant is very complex topic, it become impossible to explore it in detail in such limit time. For detail exploration and documentation of such IK, enough time should be provided.

Language problem

Since the researcher had no knowledge about tharu language, he had to face language problem because respondent and informants from women and old aged group couldn't speak and understand Nepali language easily

Researcher had to hire mediator and had to expense enough time for that type of respondent and informants.

Problem of traditional superstition

Due to believe on conservative superstition that "sharing about their IK on the use of medicinal plant would be worthless", traditional healers and old aged respondent hesitate to share their knowledge about medicinal plant use which made the work of data collection more challengeable.

Problem of statistics

Since concern VDCs haven't maintain their various types of statistics through village profile, researcher had to face statistical problem in local level.

CHAPTER- IV

DISCRIPTION OF STUDY AREA

In this chapter, an introduction of the Bardiya district, overall scenario of study area (Motipur VDC ward no 2 Bathuwa and Belwa VDC ward no 2 Banmuduwa) like geographic, demographic, climatic, resources status etc and a brief description on the socio-cultural aspect of tharu community of the study area have been presented.

4.1 Brief introduction of Bardiya district

Bardiya district is also known as naya muluk of Nepal. Late Rana Prime Minister Janga Bahadur Rana had returned back Banke, Bardiya, Kailali, and Kanchanpur as the prize from east India Company in BS1917. The district is situated in south west region of mid western development region.

Geographical situation and climatic condition of the district:

Latitude: $28^{\circ} 17'$ to $28^{\circ} 39'$ north

Longitude: $81^{\circ} 3'$ to $81^{\circ} 41'$ east

Boarder: East: Banke district

West: Kailali district

North: surkhet and salyan district

South: Baharaich district of India

Area: 2025 sq. kilometer (68.76% Terai and 31.27% Siwalic)

Average length: 64 kelometer

Average breath: 35.71 kelometer

Elevation: 138 meter-1279 metre from mean sea level

Climate: Tropical to sub-tropical

Average temperature: 17.5° c to 34.5° c

Minimum temperature: 7.7° c

Maximum temperature: 42.2° c

Average rainfall: 1118 mm

Source: *District profile of Bardiya 063/064*

Table 4.1 Land use classification:

S.N.	Type of land	Area in hector	Percentage
1	Bardiya National Park	87936.00	43.43
2	Forest area	34425	17
3	Cultivated agriculture land	66977	33.07
4	Others: rock, river, pond, etc	13162	6.5
	Total	2025000	100

Source: District profile of Bardiya 063/064

Table 4.2: Population composition of Bardiya District: (2038-2058)

Census year	Total	Male	%	Female	%	Growth%	No.of household	Average household size
2038 BS	185478	90313	48.70	95165	51.30	3.85		7.5
2048 BS	290313	147454	50.79	142386	49.21	3.7	41298	7
2058 BS	382649	192655	50.35	189994	49.65	2.79	59569	6.42

Source: District profile of Bardiya 2060

4.3: By industry employment composition of Bardiya District

S.No.	Major Industry	Number	Percent
1	Agriculture and forestry	104358	65.72
2	Fishing	80	0.05
3	Mining and quiring	139	0.09
4	Manufacturing and recycling	11607	7.31
5	Electricity, gas and water	2185	1.38
6	Construction	9231	5.81
7	Wholesale and retail trade	14030	8.84
8	Hotel and restaurants	936	0.59
9	Transport, storage and communication	1275	0.80
10	Financial intermediation	357	0.22
11	Real state renting and business activities	470	0.29
12	Public administration and social security	3741	2.35
13	Education	1985	1.25
14	Health and social workers	644	0.40
15	Other community, social and personal service	1081	0.68
16	Private households with employed persons	5470	3.44
17	Extraterritorial organizations and bodies	1060	0.67
18	Not stared	141	0.09
	Total	158790	100

Source: District profile of Bardiya 2060

Table 4.4: Educational status of Bardiya Tharu:

Academic level	Female	Percent	Male	Percent	Total
Master Degree or equivalent	1	5.56	17	94.44	18
Bachelor Degree or equivalent	6	4.30	113	95.770	139
B.L. or equivalent			8	100	8
MBBS			1	100	1
P.C.L. or equivalent	72	11.40	562	88.60	634
S.L.C. pass	231	11.85	1718	88.15	1949
H.A.			2	100	2
C.M.A.	4	9.5	38	90.5	42
J.T.A.			4	100	4
Anami			1	100	1
S.L.C. Test pass	329	16.10	1719	83.90	2048
Total	643	13.30	4203	86.70	4846
Tharu population	99614		101662		201276
Other caste total population	90380		90393		181376
Total population of district	189994		192655		382649

Sources: Bardiyako Tharu Shaikshik Darpan 2062

4.2 Brief introduction of study area

Motipur VDC ward no. 2 Bathuwa and the Belwa VDC ward no 2 Banmuduwa of Bardiya district were selected as the study area. In this chapter, an introduction of the study area and Socio- economic status of both VDCs with its location, topography, climate, drainage system, nature of vegetation, settlement pattern, population composition and other development activities have been presented.

Location

Both Motipur and Belwa VDCs are situated in the north-east part of Bardiya district and about south-east section of Bardiya National Park. The study area is located in between 28⁰ 17' to 28⁰ 39' north latitude and 81⁰ 3' to 81⁰ 41' East longitude. Both VDCs are situated on the line of kohalpur surkhet highway. Motipur VDC is situated 22 kilometer north and Belwa VDC is situated 29 kilometer north from district headquarter Gularia. The study area Bathuwa village of MotipurVDC is situated about 2 kilometer north and Banmuduwa village of Belwa VDC is situated about 5 kilometer north from highway. Both villages lie in the vicinity of Bardiya National

Park and other community forest. Study area is rich in terms of forest resources. The location map of the study area is given in the annex-5.

Topography

Physiographically, the study area is situated in the terai region of Nepal. It covers flat land, grazing land and the forest. The political area of the village is mostly the cultivated land. The soil of the village is rich alluvial to clayey-loam rich in organic matters

The Climate

The climate is the tropical to sub-tropical monsoon type. The average monthly temperature reaches a maximum of 42.2⁰c, a minimum of 7.5⁰ C in the cool dry season. Average rainfall of this area is 1118 mm. during hot season of may/june from Thar Desert of India also affect in this area. The rainy season begins from May and stops in the month September.

Drainage System

Mankhola, Kuthara lagania nala, Dunduwakhola, Chyam river, Ghattekhol, Lauhakhola, Rewkhola are the main stream and river of the study area. Babai irrigation channel and other local irrigation channel from various streams can provide irrigation facility for only about 40% land of study area.

The Nature of Vegetation

The study area is adjacent with the boundary of Bardiya National Park. The people of this area go to the area of National park for their medicinal, agricultural, livestock purposes. They use the plants from National park as well as from the forest outside the National park (community forest). The nature of vegetation in and around the study area is of Tropical Evergreen type to deciduous and sometimes the riverian grass land types in the bank of the river. The common plants available in the study area are Daikamlo (*Callitriche macrophylla*), Tanki (*Bauhinia purpurea*), Khair (*Acacia catechu*), bans (*Dendrocalamus strictus*), Jamun (*Syzgium cumini*), Simal (*Bombax ceiba*), Sissoo (*Dalbergia sissoo*), Sal (*Shorea robusta*), Amaro (*Spondias pinnate*), Amp (*Magnifera indica*), Amala (*Phyllanthus emblica*), Bel (*Aegle marmelos*), Asuro (*Adhatoda vasica*), Datiwan (*Achyranthes aspera*), Barro (*Terminalia belirica*), Harro, Tite pati, Sindhure, Bakaino, Nim Amba, Pipal,

Anar , Haldu, Vanti and many others. Besides this shrub and herb species are also found in large number.

Population composition of Motipur and Belwa VDC

According to the latest data published by the DDC of Bardiya i.e. District profile 2063/064, the population of Motipur VDC is 19388 and Belwa VDC is 12234 among which 10409 i.e.53.69% and 5564 i.e. 45.47% respectably are Tharu people.

Table 4.5: Population Composition of Motipur and Belwa VDC by Age group:

Age group	Motipur VDC				Belwa VDC			
	Male	Female	Total	percent	Male	Female	Total	percent
0-4	1305	1167	2472	12.75	855	753	1608	13.14
5-9	1382	1378	2760	14.23	903	822	1725	14.10
10-14	1452	1306	2758	14.22	883	821	1704	13.93
15-19	1054	1191	2245	11.57	642	802	1444	11.80
20-24	805	1043	1848	9.53	594	648	1242	10.15
25-29	748	753	1501	7.74	437	468	905	7.40
30-34	568	586	1154	5.95	382	380	762	6.23
35-39	514	508	1022	5.27	310	302	612	5.0
40-44	424	408	832	4.29	264	256	520	4.25
45-49	384	351	735	3.79	222	232	454	3.71
50-54	321	265	586	3.02	199	179	378	3.09
55-59	266	201	467	2.40	147	120	267	2.18
60-64	204	175	379	1.95	119	128	247	2.02
65-69	126	103	229	1.18	95	78	173	1.41
70-74	102	90	192	0.99	40	55	95	0.77
75 up	101	107	208	1.07	51	47	98	0.80

Source: District Profile Bardiya, 063/064 (population census 2001)

Table 4.6: Ethnic Compositions of Motipur and Balhwa V.D.C.

S. N.	Caste	Motipur VDC		Belwa VDC	
		Population	Percent	Population	percent
1	Tharu	10409	53.69	5564	45.47
2	Brahmin pahad	2515	12.97	385	3.15
3	Kshetri	2276	11.74	2694	22.02
4	Magar	733	3.78	275	2.24
5	Sonar	595	3.07	257	2.10
6	Kami	511	2.63	839	6.85
7	Sanyasi	347	1.79	9	0.08
8	Damai	327	1.69	340	2.78
9	Thakuri	295	1.52	1180	9.64
10	Mushlim	240	1.24	304	2.48
11	Unknown dalit	196	1.01	7	0.06
12	Gurung	183	0.94	57	0.46
13	Newar	159	0.82	20	0.17
14	Sarki	119	0.61	55	0.45
15	Tamang	98	0.50	9	0.08
16	Rai	83	0.43		
17	Gharti	59	0.30		
18	Darai	53	0.27		
19	Rajput	39	0.20		
20	Chepang	35	0.18		
21	Yadav	20	0.10	10	0.09
22	Rajbansi	16	0.08		
23	Sherpa	15	0.07		
24	Kayastha	10	0.05		
25	Kurmi	9	0.04		
26	Baniya	9	0.04		
27	Sudhi	7	0.03		
28	Brahmin terai	5	0.02	40	0.33
29	Haluwai	5	0.02		
30	Aadibasi /janjati			29	0.24
31	Lohar			28	0.23
32	Badi			20	0.17
33	Kumal			19	0.16
	Others	20	0.10	91	0.75
	total	19388	100	12234	100

Source: District Profile Bardiya, 063/064 (population census 2001)

4.3 Socio-cultural description of tharu community of study area:

Birth ritual

In tharu people, when a pregnant woman comes very near time to give birth a new infant, midwife (sohrinya in tharu) is called from their own community to provide care in the delivery period. With the help of midwife a safe delivery is carried out and newly born baby is washed by mild hot water. On the other hand the mother and midwife take bath in the nearby well or tap. After their bath mother and midwife make the tap sacred by spraying water mixing with gold and crimson (red sindur) is broadcasted either thither side of the tap/well and returned back to their home.

Unless the gland of newly born baby is shed, the baby and mother are kept separate from other member of the family. During this period baby and mother undergo massage by using the fire of Bel (Aegle marmelos). Within this period, both baby and mother are not allowed to go outside from their setting even in the case of latrine.

A special ritual called CHHATHI BADHI is carried out when the gland of newly born baby is shed down and up to 10th day of birth the baby and mother are kept separate and not allowed to touch by the other member of the family. This phenomenon of being setting in this stage is called SAUNDI BASNE/KUNTA BASNE.

In the 10th day baby and mother along with the midwife take bath to be sacred and after having their bath an elder women of the family spray water mixed with gold over them and around the house to make sacred. After the purification ceremony is completed, the baby is laid over the winnow (Nanglo) on which about a kg of rice is spread. This ceremony is called SUPA UDRAI in the local tharu culture. The name of the baby is given either by the midwife in the sacred ceremony or by the parents in their convenient time. Generally the name is kept by following the following rules:

- On the basis of day the baby born.
- On the name of place where the father of the baby is, at the time of birth.
- On the name of event, feast, incident happen at the time of birth etc.

Marriage rituals

There are three major types of marriage among the tharu community of Bardiya district.

1. Kul Bibaha or Magi marriage

Aguwa (lami) a traditional post to make arrangement of marriage put forward the proposal of marriage in both side of boy and girl. After the proposal forwarded by the Aguwa, a ceremony called GHAR DEKHAI and BAR DEKHAI is carried out. In this occasion, both the boy and girl side family see their respective house, property as well as boy and girl to make decision either to marry or not.

If both side agree to engage in marriage, some materials from the boy side such as one Dharni (2.54 kg) salt, one Dharni oil, 22 pathi (about 85 kg) rice, 22 gauge Bahrawar (white cloth), 10 gauge Phariya (white cloth), 2.5 gauge Chola (white cloth), 5 gauge Sikiya (red cloth), one set of ladies cosmetics with one pair sandal, Thakara, Tikuli, Jhobanda, Guniya, Petikot, Blouse etc. for the girl to be married are brought to the home of girl by the guardian of boy with Aguwa. And overall way of marriage programme is set at that day. This ceremony is called PARCHHAKKI PARCHHA or CHAUR PARCHHA.

In the day of marriage, the Dulaha (Boy) wears Pariya, Jama, Ghunna, Ghunguru with red rice (Tika) on forehead and go to the home of bride on foot or Ladu (Bullock cart) in Dangali tharu community and on Chandol (Dola in Nepali) in Desauri tharu community. Among the Desauri tharu the younger brother along with the Dulaha rides on the Chandol. On the way to the bride, a group of tharu accompanying in the wedding day, Ganjuwa carry a special Iron Shod (Barchhi) and Dulaha round the temple (Thanuwa) of his village.

When the Barat (group of people) reach very near to the house of bride, the people from bride side blast the explosive (Pataka) to check the group of Barat. After a while, they reached to the yard of bride, the Barchhi is handed over to the Dulaha by Gnjuwa and the shod is affixed in the place of deity of bride side. After affixing the Barchhi, the bride and her sisters wash the pedal of Dulaha (in Dangali tharu) and in Desauri tharu the pedal of Dulaha is washed by the father or the brother of the bride. Then the

Barat is provided with party by bride side and a cultural dancing programme with folk music is conducted during the night.

On the following day morning, Dulaha and Dulahi wear gold ring, tika, mala (garland) given by each other. In the same day Dulaha with returned back his home after having departure party (Bidai Bhat). As the Barat depart from the home of bride a group of man called Chauthiyar along with a group of girl called Nakundi from bride side, carry the bride keeping her on Doli to the home of her husband with cultural dance on the way. The brother of bride carries a Lota (Jug) of water along with Chauthiyar and Nakundi.

When the group of Chauthiyar reaches to the Dulaha's house, Dulaha is already arrived and waiting for bride arrival. After the arrival of bride to the home of Dulaha, the elder brother of Dulaha presents a chhakibudhi (An alcoholic mud pot) to the Chauthiyar. Chauthiyar drink the chhakibudhi and they land the Doli of bride on the yard of Dulaha's home. Either mother or sister inlaw of Dulaha being a Bhojini (covered with white cloth over the head), tied a sack of rice in the foreside of stomach (Abdomen) with a lamp in hand and release the bride from the doli and spray rice grain to the married couple 3 times in left and 3 times in right side. In every time of spraying, remaining rice grain on her hand is thrown into the makal set aside of new couple. After this ceremony, the head of Dulaha and Dulahi is strunk 3 times and fire of makal is removed on the ground. The removed coal of makal is walked over by their left pedal and inters to the home and reached to the place of deity of Dulaha and worships the god and Dulaha spread crimson (Sindur) over the head of bride using a coin. Simultaneously, Bride massages the pedal of Dulaha using Bukuwa (mixture of roasted mustard, Bojho, Kachur).

In the same day, Chauthiyar and Nakundi stay whole night at home of Dulaha and celebrate the night with cultural dance and folk music. After the night is over, the Chauthiyar and Nakundi take back the bride to her birth home. After the passage of some time, generally in the sukla pakshya of Baisakh (April/May) ie the time of Musuro harvesting a group of women from bride side take the bride to her husband home and rest the night and celebrate with party and cultural dance and folk music. In this way the whole marriage ceremony completed.

1. Urraha Bibaha (Elopement marriage)

There are two types of elopement marriage as following can be seen among tharu community of Bardiya district.

i. By elopement :Unmarried woman:

When a boy and girl in the same village or from different villages know each other fall in love, they decide to run away one day. Secretly they had themselves in some relative's house for two or three days. A search starts and the parent find out. After finding them guardian of both families may or not accept them as husband and wife. If they accept them, procedur of Kul Bibaha may be followed.

ii. Elopement: Someone else's Wife:

Women have a special status among the Tharu Community. Historically, they enjoyed full freedom from the early period and they hate to see it being eroded; so they resist. If a wife feels that she is not being given due care and respect by her husband in the home or field that she is not treated well by her mother in-law, it might be a sufficient cause for her to run away and get settled with someone else's who is more reasonable. Sometime a mis-matched husband (generally a very and physically immature husband and a more grown up and mature wife) is a reason for her to leave him. At other times she may be dis-satisfied with whom she thinks she will be happier, then both of them run away.

1. Ved Riti Marriage

Tharu race is a tribal group in Nepal. Of course, their own culture dosen't permits them to adopt the ved riti marriage but due to the impact of acculturation, these tribal people are in the increasing trend of ved riti marriage. In this type of marriage a Brahamin (Pandit) is invited to pronounce vedic mantra as the Brahmin and Kshetri read in their marriage and all the system of pahariya (Brahmin and Kshetri) are followed. Nowadays, this type of marriage is being popular among tharu people in this area.

Death ritual:

A old/ ill tharu people approached very near to death i.e. there is very little livelihood of survival is took out from the room and laid on the yard of home. Then the tail of cow is kept on the palm of old/illed people so that he she can cross the very difficult and dirty river (Baitarni) easily to inter the haven. After this, all members of home except unmarried daughter/sister drop down gaya water with gold and the leaf of the holy plant (Tulsi) and rice grain over the mouth of the patient lying over the death-bed. When he/she die, all the nail of 20 fingers are trimmed and thrown to the river of Gaya as soon as possible. This ceremony is called PHULA SELAUNE in local dialect. The dead body is carried by laying the carcass (death body) covered with white cloth (coffon) on the opposite (inverted) side of the Khatia that the man/woman used to sleep over before. When the carcass is reached in the bank of river, the body is removed from Khatia and burnt or buried. On the time of funeral ceremony a package of food grain (rice, dal and other grain they have in their home) is put very near to the criminal side believing that the dead man can use the food in the heaven also. After the funeral ceremony is completed, all the person involved in this ceremony take bath and Teldihawa provide gold water to spray over the body to be sacred and all return home. Only the elder son seat sapatly for 10 days. With in this 10 days period, before the lunch of everyday, a bunch of thach is burnt in the fore path and a little water and alcohol is sprayed over the burning flame. A line is drawn by using Khuria (iron rod) across the road because it is believed that dead devil will be checked to come back home. The purification ceremony is carried on the following Thursday in Dangali and on the 10th day in Desauri tharu. The purification ceremony is also called the chhut-metaune.

Different ceremonial activities that are done in the purification day are underlined as:

- I. **BHAT KAHARNE:** in this ceremony men and women of family and relatives (Gotiyar) both go to have bath nearby river and men save their hair and return to home. All the relative women bring a Mana (about .5 kg) and a crystal of salt to the home of the dead person. The women in that day firstly look over the ash of the stove and see the path of dead soul to his/her way to heaven. Then they remove all the ash from the stove and cook rice that they have brought from their home. The food is then distributed to all the guest putting

food on the leaf-plate. Every people saperate a pinch of rice on the ground for the dead soul then they have remaining food.

II. **PITTAR GHASAINA:** In this ceremony a pig is killed by using Khuria (iron shod). Meat of pig, fish, rice and vegetable recipe are made in this ceremony. The ready food is kept in 3 leaf plates. In first plate all varieties are put by using left hand and other two plates are filled with recipe by using right hand. These three plate food are placed in eastern site of the deity which is plastered with cow dung. The plate filled with food by left hand is dragged by all the relatives (Gotiyar) along with the Kriya-putri. This dragged plate is left for the dead parent and remaining two plate of food eat themselves. This phenomenon is called Pittar-Ghasaina.

III. **PAKUWA KAHARNE:** Some meat of pig is burnt over the fire and made into small pieces. The pieces of meat are distributed to all gotiyar by putting over the leaf. Every one separate a piece of meat for their dead soul over the ground and remain meat is eaten. This phenomenon is called Pakuwa Kaharne.

After these phenomenons Gotiyars and Neighbors set in line separately in 2 lines. In the same time, Teldehawa provided oil and white cap to the elder son who sat separately (Kriyaputri) and oil to everybody for the purpose of purification. Then all the Gotiyar and Neighbour have remaining meat and alcohol. After all, the Kriyaputri shake hand/join hand to all the Gotiyar and Neighbour presented in the whole ceremony and thanks them for their kind help. The ceremony called SEWA LAGNE. Thus the whole death ritual is completed over in tharu community of Bardiya.

Major feast and festival among tharu community:

- Maghi or New Year of tharu.
- Dashya or Dasain
- Dewari or Tihar
- Astamki or Birth day of lord Krishna
- Atwari
- Saune sauranti

- Dhurheri or Holy
- Dhuriya puja
- Hareri or lawangi puja
- Mandali puja
- Asari puja
- Nikash puja etc

Major sub-caste among tharu of Bardiya:

Formally majority of tharu write chaudhary or tharu but there are various sub-caste among them. Especially sub-castes are distinguished according to their deity established in their home and method of worship. Sub-castes among tharu of this area are broadly divided in three types as mention below:

Deshbandhya Guruwa group: it consist Dahit and Jagannathiya.

Ghar Guruwa group: It consist Jinguni, Ghotaili, Dharkatuwa, Demamraura, Pachhaladangya, Sukhariya, Katkatuwa, Maduwa etc.

Barin group: It consist Ultahawa,Chukaha, Terra, Dukarpuchhiya, Rajbansi, Gurariya, Satgauwa, Narsiha, Kariya Bhumkihawa, Namba, Chadharaina, Bhagoriya, Ratgaiya, Kusamiya, Demenraura, Bathwa, Lohatihawa, Namkoliya, Gunguni aduwa, Ghughu ghurawa, Harchabawa, Gharchwar, Sukhariya bhedawa, Subedi, Baidhha, Bhangi, Lohati, Ahir, Kariya Magara etc.

CHAPTER- V

DATA PRESENTATION AND ANALYSIS

5.1 Socio-economic Features of Respondents

Age and Sex Distribution

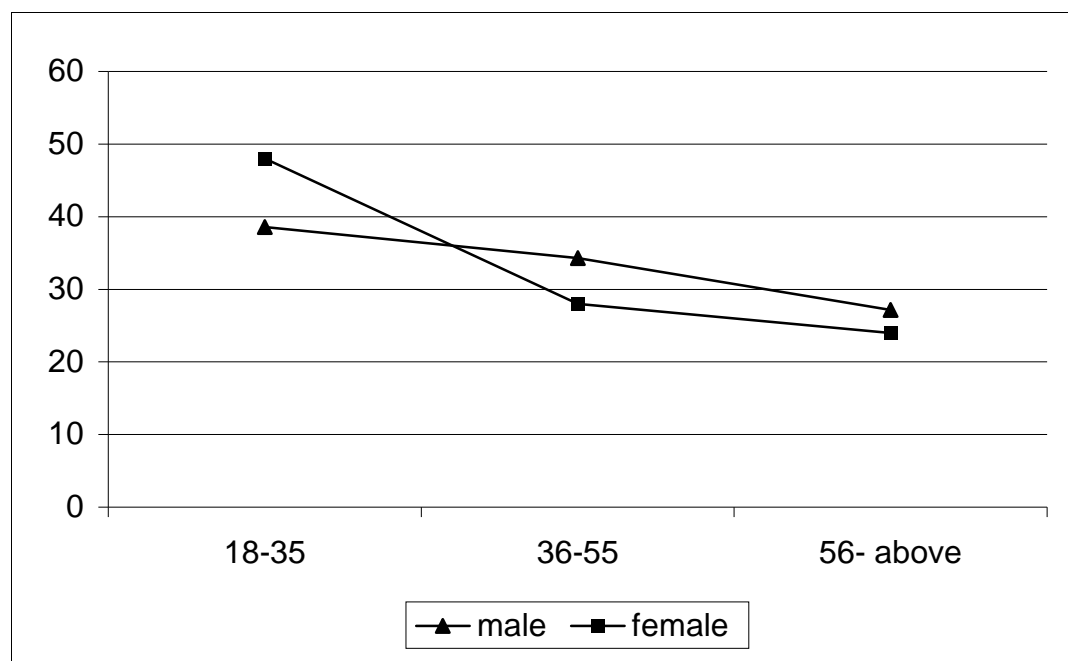
The analysis displayed that majority of the respondents were male. Among 95 total respondents male were 70 (73.68%) and female were 25 (26.32%). Out of 70 male respondents, majority 27 (38.57%) of them were from young aged class (18-35 years), followed by 24 (34.28%) from middle aged class (36-55 years) and 19 (27.15%) from old aged class (above 56 years). Among 25 female respondent, majority 12 (48%) were from young aged class followed by 7(28%) from middle aged class and 6(24%) from old aged class.

Table 5.1: Age and Sex of Respondents

S.N.	Age class	Male No.	Male Percent	Female No.	Female percent
1	18-35 years	27	38.57	12	48
2	36-55 years	24	34.28	7	28
3	Above 56 years	19	27.15	6	24
	Total	70	100	25	100

Source: Field Survey, 2008

Figure 5.1: Ages and Sex of Respondents



Source: Field Survey, 2008

Caste and Education

From the analysis, it is displayed that near about 50% of the respondents 47(49.47%) were illiterate whereas 48(50.53%) were found literate which was found to be higher than District literacy rate 45.70% of Bardiya district (District profile 2063/064) and lower than National literacy rate 54.1% (National population census 2001)

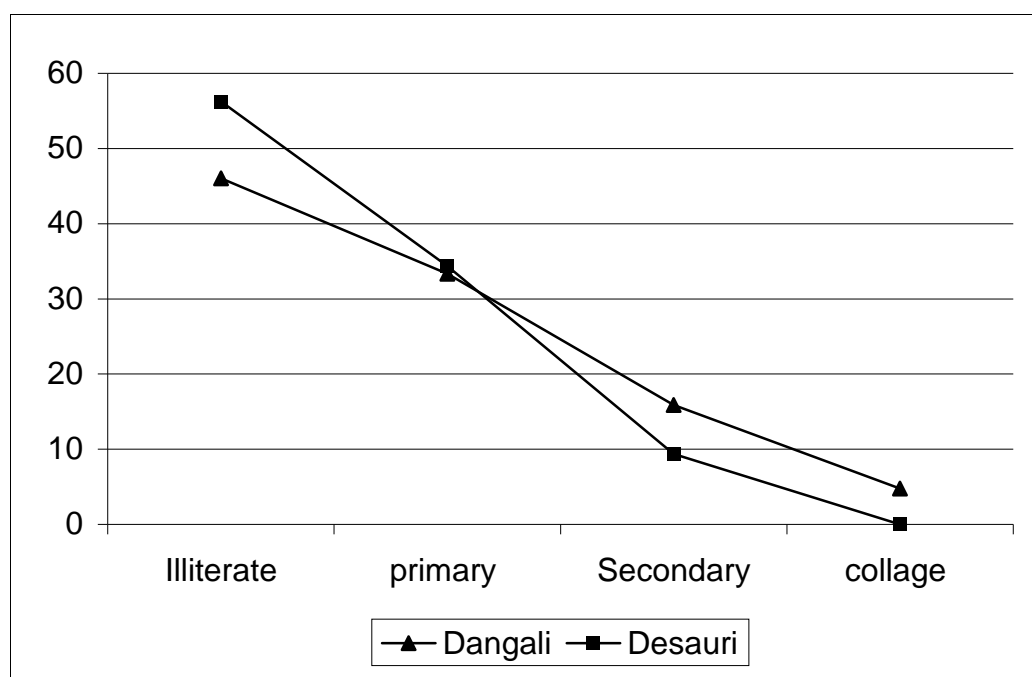
Analyzing the overall education of Dangali, 29 (46.04%) respondents were illiterate followed by 21 (33.33%) respondents having primary level education, 10 (15.87%) were found having secondary level education and 3 (4.76%) were found having college level education. Among Desauri tharu, majority of respondents 18 (56.25%) were found illiterate followed by 11 (34.37%) respondents having primary level and 3 (9.38%) respondents were having secondary level education.

Table 5.2: Caste and Education of Respondents

S.N.	Level	Dangali		Desauri	
		No.	Percent	No.	Percent
1	Illiterate	29	46.04	18	56.25
2	Primary level	21	33.33	11	34.37
3	Secondary level	10	15.87	3	9.38
4	College level	3	4.47	0	0
	Total	63	100	32	100

Source: Field Survey, 2008

Figure 5.2: Castes and Education of Respondents



Source: Field Survey, 2008

Age, Caste and Sex Distribution

Tharu people were divided into several types or categories, but the study area includes mainly two types i.e. Dangali and Desaulri. Among Dangali, there were 50 (79.36%) male and 13 (20.64%) female respondents. While among Desauri, 20 (62.5%) were male followed by 12 (37.5%) female respondents.

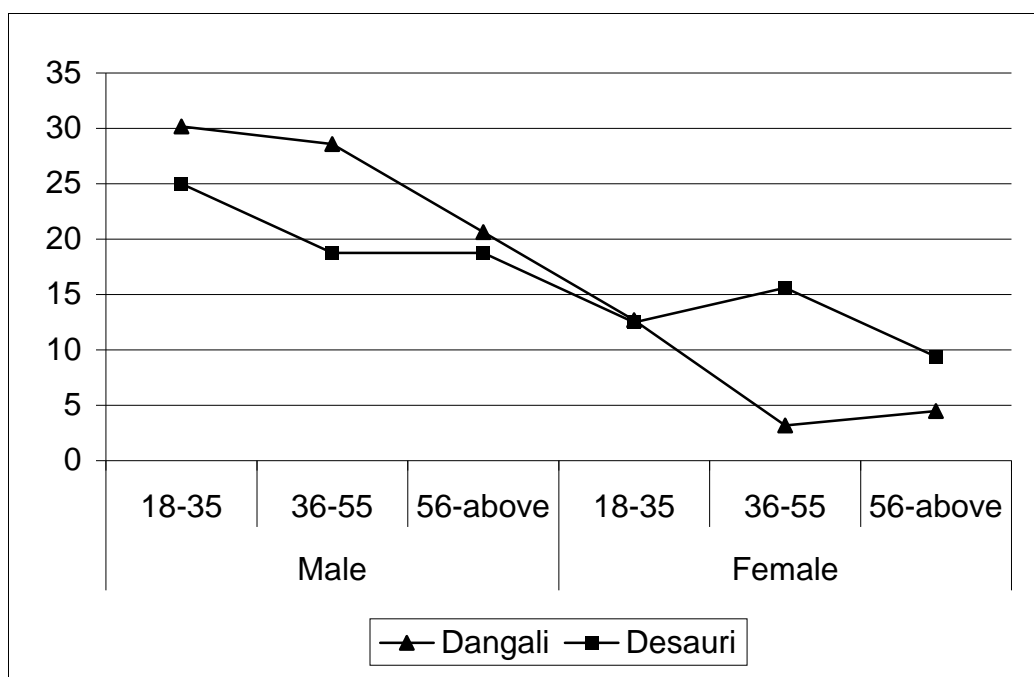
In the Dangali community, 50 (79.36%) respondents were from male and 13 (20.64%) were from female. Out of 50(79.36%) male respondents majority 19 (30.16%) of the respondents were from young aged class followed by middle aged 18 (28.56%) respondents and 13 (20.63%) respondents from old aged group. Similarly out of 13 (20.64%) female respondents, majority 8 (12.70%) of the respondents were from young aged group followed by old aged 3 (4.76%) respondents and 2 (3.18%) respondents from middle aged class. Whereas among Desauri, 20(62.5%) respondents were from male and 12 (37.5%) were from female. Out of 20 (62.5%) male respondents, majority 8 (25%) respondents were from young aged class followed by middle aged and old aged class equally with 6 (18.75%) of respondents. Similarly out of 12 (37.5%) female respondents, majority 5 (15.62%) respondents were from middle aged class followed by yough aged 4 (12.5%) respondents and 3 (9.38%) respondents from old aged class.

Table 5.3: Age, Caste and Sex Distribution

S.N.	Age class In year	Dangali				Desauri			
		Male		Female		Male		Female	
		No	percent	No	Percent	No	Percent	No	percent
1	18-35	19	30.16	8	12.70	8	25	4	12.5
2	36-55	18	28.57	2	3.18	6	18.75	5	15.62
3	Above 56	13	20.63	3	4.47	6	18.75	3	9.38
	Total	50	79.36	13	20.64	20	62.5	12	37.5

Source: Field Survey, 2008

Figure 5.3: Ages, Caste and Sex Distribution.



Source: Field Survey, 2008

Population and Household Size

Tharu people are the largest population in Bardiya district. About 197562 tharu individuals which are 51.74% of total district population inhabit in the district. Total population of Motipur VDC is 19388 among which tharu population is 10409 i.e.53.69%. Similarly total population of Belwa VDC is 12234 which comprises of 45.47% i.e. 5564 individuals tharu (District profile 063/064, National population census 2001)

The average family size of Dangali tharu was found 8.04 persons per household which was remarkably higher than National average 5.6 persons (National population census 2001), district average 6.42 persons and also VDC average 6.14 persons of Motipur VDC (District profile 063/064). The median population size of each household was found 9 with maximum 37 and minimum 4 persons. Similarly the average family size of Desauri tharu was found 5.94 persons per household which was slightly higher than National average and slightly lower than district average as well as VDC average 6.14 persons of Belwa VDC. The median population size of each household was found 5.5 with maximum 17 and minimum 2 persons.

The study analysis displayed that the tharu people of this area were also attracted by the nuclear family system rather than the joint family system followed by their ancestor.

Land holding

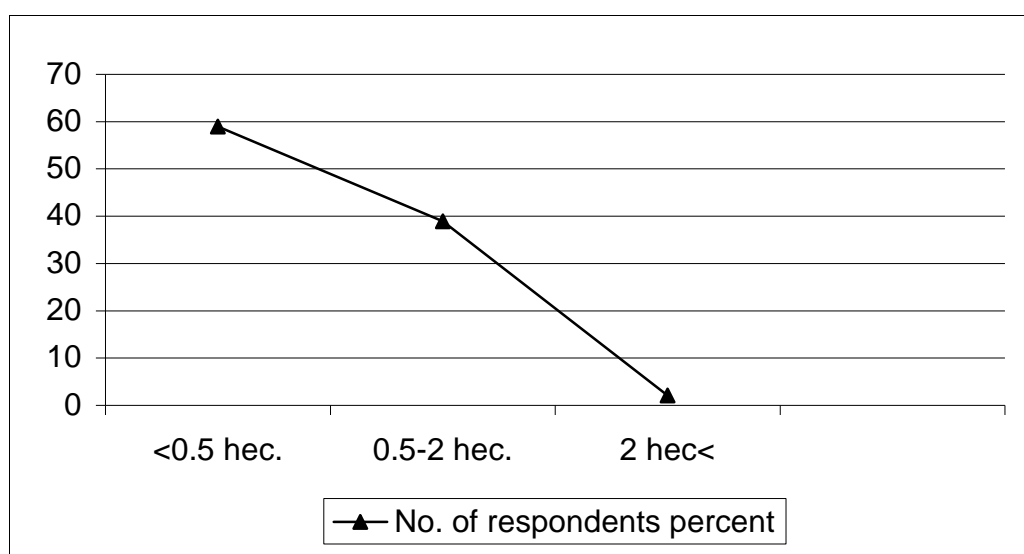
According to land holding of the respondents, they were categorized in three groups as small (<0.5 hector), medium (0.5-2 hector) and large (2 hector <) according to government standard criteria (CBS1992). It was found that the study area is dominated by small class land owner having 56 (58.95%) respondents followed by medium 37 (38.95%) respondents and large owner 2 (2.10%) respondents. Among respondents, maximum land owner have 2.5 hector of land and minimum owner have 0.03 hector of land. Average land holding of respondent was 0.52 hector per household. It was also found that all most respondents had to depend on the land of landlords on which they conduct farm activities on contract basis i.e. Adhiya. An average of 0.5 hector per household was found having 2 hector maximum and 0.07 minimum land of landlord on such manner.

Table 5.4: Land Holding

S.N.	Class	No of Respondent	percent
1	Small (< 0 .5 hector)	56	58.95
2	Mediam (0.5-2.0 hector)	37	38.95
3	Large (>2.0 hector)	2	2.10
	Total	95	100

Source: Field Survey, 2008

Figure 5.4: Land holding



Source: Field Survey, 2008

Occupation

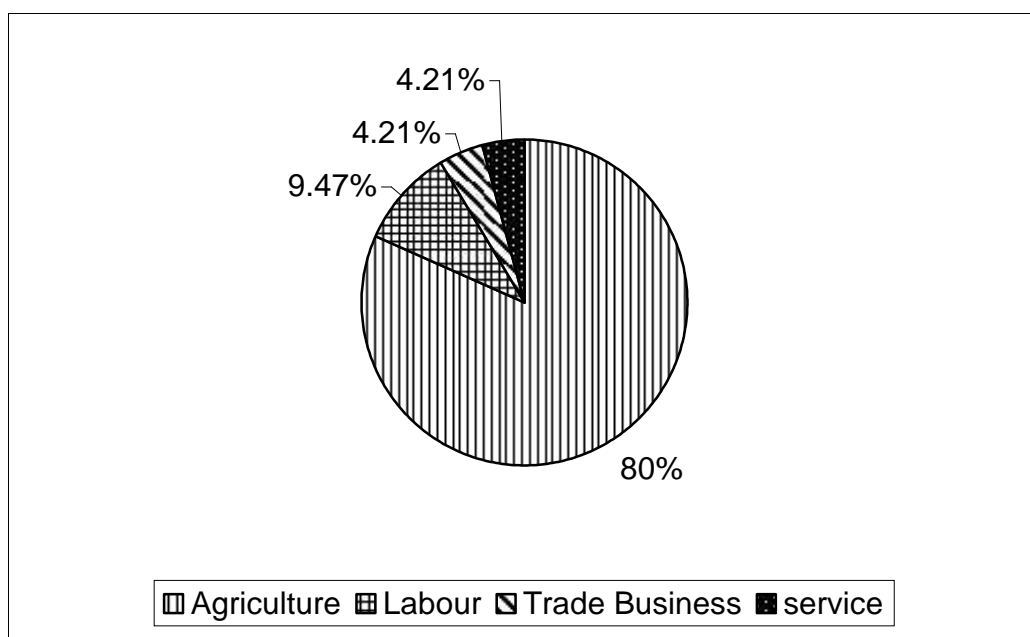
The study showed that agriculture was the main occupation of the respondents. Majority 76 (80%) respondents were in agricultural occupation followed by 11 (11.58%) respondents in labour, 4(4.21%) in trade business, 4(4.21%) respondents were in service occupation. 50(52.63%) respondents who hadn't enough land for their livelihood, were engaged in other off farm activities specially wage labour as subsidiary occupation along with their main occupation i.e. agriculture.

Table 5.5: Occupation

S.N.	Occupation	Respondents No	percent
1	Agriculture	76	80
2	Labour	11	11.58
3	Trade business	4	4.21
4	Service	4	4.21
	Total	95	100

Source: Field Survey, 2008

Figure 5.5: Occupation



Source: Field Survey, 2008

Food Sufficiency

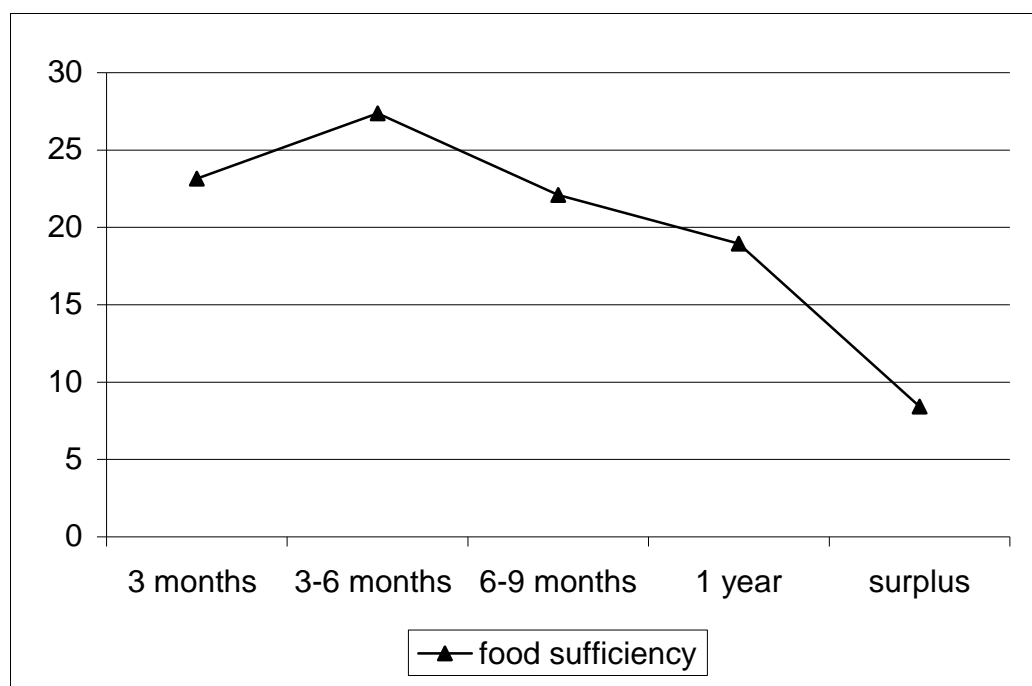
Study analysis displayed that majority of the respondents were in food deficiency. Majority 26(27.37%) respondents were fall in the group they have food sufficiency for 3-6 months followed by 22(23.16%) respondents were fall in the group they have less than 3 months food sufficiency, 21(22.10%) respondents were fall in the group having food sufficiency for 6-9 months, 18(18.95%) respondents were fall in the group having food sufficiency for a year and only 8(8.42%) respondents were fall in the group having surplus food. To cope with these pitiable situations, seasonal wage labour within the country and outside the country mostly in India was found common.

Table 5.6: Food Sufficiency

S.N.	Food sufficiency	Respondents No	percent
1	Less than 3 months	22	23.16
2	3-6 months	26	27.37
3	6-9 months	21	22.10
4	1 year	18	18.95
5	Surplus	8	8.42
	Total	95	100

Source: Field Survey, 2008

Figure 5.6 : Food Sufficiency



Source: Field Survey, 2008

5.2 Indigenous Knowledge on the Use of Medicinal Plants.

The tharu people of the study area were being closely related with forest resources and highly depended upon it for their daily needs and problems. They had better knowledge about medicinal plant resources. Elder tharus of the study area have various IK and skill on the use of medicinal plant to cope with various diseases and problems which they had to face during their daily life. Especially Gurawa and Baidawa (traditional healer of the tharu community) had better understanding about IK system on the use of medicinal plant. Generally Baidawa of the study area were not found professionally engaged in it as occupation but they used to provide their IK system to the villagers and engaged in herbal treatment without any fee on compulsory. It was in practice that some food grains i.e. a lumber (5 kg) of rice or wheat from every household was provided to him as his remuneration in yearly basis. Most of them have to engage in the farm activities for their livelihood. Some popular Baidawa i.e. Baidawa of katarniya and Thakurdwara were found being engaged professionally in it as their occupation and were successes to earn livelihood through it. They used to cure the patient from their house or permanent station. Different part

of the plants like flower, fruits, leaf, bark, root, seed, resin, latex etc have been using by Baidawa and also by elder tharu of the study area. Generally fruits and flower were collected seasonally and remaining part of the plants was collected frequently when needed. They used to collect medicinal plants and their useful parts either from forest (Bardiya National Park, Bufferzone community forest, community forest and other national forest) or their cultivated land too. Professional Baidawa used to collect such medicinal plants frequently in the interval of some days and stored it to use when the patient come and non professional Baidawa generally not stored the medicinal plants in their house but used to go to collect medicinal plant when they needed. Especially economically poor, women and children used to go Baidawa for their treatment. People who became tired and frosted from the allopathic medicinal treatment system also used to come with popular / professional Baidawa from very far i.e. out of district and also from India. Especially fracture, misbalanced of bone, diarrhea, dysentery, snake biting etc case were recommended to the Baidawa among tharu community of the study area. In this chapter the existing local indigenous knowledge involved in the medicinal plants to cure the various diseases are discussed in detail. The local classification of the plants with its scientific, Tharu and Nepali name; the mode of preparation and doses has been discussed. How the local indigenous knowledge utilized to use the plant as medicine by traditional technique in their local environment has been traced out as bellow:

Medicinal Plants and Their Usees:

1. B.N.: *Mangnifera indica* L.

L.N.: Yam in TH and Aamp in Nep

One spoonful of skin juice is drunk for 3 days to cure stomachache. Bark juice 200ml. is drink for 2 Or 3 days to cure intestinal spasm. Bark along with the shoot of datiwani and vanti is boiled and the decoction is used to cure hepatitis. Bark juice is also drunk with the bark juice of Amba and simal to cure dysentery and intestinal spasm. Bark is boiled with the root of sisnu and the decoction is used to bathe children having skin disease. Bark juce along with bark juice of Chhatiwn and Bel is drunk for alser treatment.

2. B.N.: *Achyranthus aspera*

L. N.: Ultakur in TH and Datiwan in Nep

Leaf of this shrub is boiled with the root of sisnu and a steam bath is taken to cure swelling of the body. Shoot as well as root juice is drunk to cure stomachache. Root juice is drunk to cure tuberculosis. Shoot of this shrub along with vanti and bark of mango is boiled and the decoction is used to cure hepatitis. Leaf juice is locally used to cure dental pain. One spoonful root juice is drunk twice a day to cure vomiting.

3. B.N.: *Alteranthera sessile*

L.N.: Gethi jhar in TH and vringraj in Nep

The juice of either leaf or stem or root is used to cure wounds and soreness.

1. B.N. : *Amaranthus spinosa*

L.N.: Kande morsa in TH and Lunde Kanda in Nep

Two spoonful of root juice is drunk twice a day for 3 days to cure cough and sensation of internal heat.

2. B.N. : *Allium sativum*

L.N.: Lahasun in TH and Lasun in Nep

Bulb (2 or 3) pieces are eaten in the morning with water in empty stomach to cure gastric problems. However, it should not be taken more than the prescribed amount and it should be swallowed with water otherwise it would cause problems.

3. B.N. : *Crinum amoenum*

L.N.: Ban Pyaj in TH and Hade Lasun in Nep

The paste of the bulb is used locally for hydrocele and external sore.

4. B.N. : *Crinum asiaticum*

L.N.: Datuli in TH and Ban lasun in Nep.

The root juice with milk and rice is eaten to get rid of sensation of internal heat.

5. B.N. : *Spondias pinnata*

L.N.: Sagarat and Kamhar in TH and Amaro in Nep.

Sick joints are warmed with water boiled with bark of this tree to cure joint pain .The fruits are eaten to cure cough. Seeds along with the seeds of Ratigedi, Kankro, Lauka and Bayer are eaten to cure chronic cough.

6. B.N. : *Alstonia scholaris*

L.N.: Chhatiwan in both Th and Nep.

The milky sap is rubbed on the chest to cure chest pain, heart pain, and lungs problem.

10. B.N.: *Holarrhena antidysenterica*

L. N.: Khirhire in TH and Dudhe khirro in Nep.

Bark juice or powder is eaten to cure swelling of body. Gargling with this juice and drinks cures the asthma and tuberculosis. It is taken in a mixture of Nim leaf and shoot of vanti to cure chest infection. Leaf is also eaten by other domestic animals to cure dysentery.

11. B.N.: *Rauwolfia serpentina*

L.N.: Chad Maruwa in TH and Sarpagandha in Nep.

The stem is eaten to cure stomach pain. Root juice is drunk to cure blood pressure, and paste of root is used on snakebite. Root juice also cures fever and malaria fever a dose less than 10 gm is recommended and more this amount may be a fatal to the man.

12. B.N.: *Acorus calamus*

L. N.: Bacha in TH and bojho or bodho in Nep.

This is cultivated in semi wild condition. The rhizome is roasted in fire and eaten to cure cough and cold. Juice of tuber is applied locally to protect the wound of human as well as cattle from flies. Garland made from small pieces of tuber along with Lasun and pieces of Hardi is used by children to cure cold and cough.

13. B.N.: *Arisaema speciosum*

L. N.: Bhaunka Biryra in TH and Bikh Marne in Nep.

The root is used as an antitoxin, Antidote to snake bites and also used in swelling.

14. B.N.: *Lason spinosa*

L. N.: Moraiya in TH and Kande Karkalo in Nep.

The root is used in cuts. Leaf and petiole paste is used in the wound from dog bites.

15. B.N.: *Schefflera venulosa*

L.N.: Simar Latti in TH and Simal Lahara in Nep.

The steam from boiling the leaf of this plant is used to warm the swollen legs. Bark juice is drunk to cure gallstone and gayno

16. B.N.: *Calortropis gigantea*

L.N.: Madar in TH and Ank in Nep.

The smoke from the burning of this shrub is inhaled two to three times a day for two days to cure cold. Flower is eaten to cure dog biting. Stem or root juice is eaten to cure gallstone and hydrocele. Powder of root of Kalmegh, Ank, and Bethe is eaten one spoonful twice a day for 2 month to cure gallstone.

17. B.N. : *Dryoathyrium boryanum*

L. N.: Kochaiya in TH and Niguro in Nep.

The tender shoot is eaten to cure fever.

18. B.N.: *Bombax ceiba*

L. N.: Simara in TH and Simal in Nep. and silk cotton in Latin.

One glass of bark juice of this tree is drunk mixed with bark juice of Belauti and Aamp thrice a day to cure dysentery and intestinal spasm. Paste of spine of this tree is used to cure sore breasts of women. Root juice of about one foot tall saplings has aphrodisiac value. Latex is eaten to cure dysentery

19. B.N.: *Garuga pinnata Roxb.*

L. N.: Jengra in TH and Dabdabe in Nep.

The bark paste is used in cuts to stop bleeding. Bark juice is boiled so that it become a thick suspension i.e. 20 liter of bark juice becomes 1 liter of

suspension. Such suspension is used for bandage to set fracture or dislocated bone. It is claimed that such treatment of fracture or dislocation of bone will be 100% successes if the treatment is done within 24 hours.

20. B.N.: *Ananas comosus*

L. N.: Bhuikatahar in both TH and Nep.

It is cultivated crop. This fruit when unripe is used as vermifuge whereas the ripe fruit is cut into pieces and left over night mixed with sugar, and eaten next morning as a relief from hot sickness. Fruit along with the bark of Bar (*ficus bengalensis*), shoot of Dhursul (*Colebrookea oppositifolia*), the root of kurilo and Mahai (*Spatholobus partiflorus*) is eaten on empty stomach to cure urinary problem.

21. B.N.: *Canabis sativa*

L.N.: Bhang in TH and Ganja in Nep.

Leaf is eaten to cure sensation of internal heat and stomach inflammation. The paste of stem or leaf is applied locally over the stomach for stomach inflammation. It is also used for cattle and buffalo with stomach problems. Dry leaf powder is also used to cure insomnia. Leaf packed in thin cloth is heated and the infected eye is warmed with it to cure eye infection.

22. B.N.: *Chenopodium album*

L.N.: Bathuhi in TH and Bethe in Nep.

It is a semi wild weed found commonly in Agricultural field. The leaves as well as tender shoot are eaten by making curry to cure stomach inflammation caused by smoking cigarettes or Ganja.

23. B.N.: *Terminalia belerica*

L.N.: Baher in TH and Barro in Nep.

The fruits of this plant along with a fruit of Harro (*Terminalia chebula*) and Amala (*Phyllanthus emblica*) is used to cure disease like muscular pain, intestinal spasm, hepatitis, fever, headache, gout, diarrhea, vomiting, stomachache, cholera, weak eye sight, physical weakness and malaria etc. Either leaf juice or root juice or stem juice is also drunk to cure above-mentioned diseases. Bark juice is drunk to cure asthma, gastric, and heart problem.

24. B.N.: *Terminalia chebula*
L.N.: Harra in TH and Harro in Nep.
The fruits of this along with the fruit of Barro, Amala are used to cure diseases like, muscular pain, intestinal spasm, hepatitis, fever, headache, gout, diarrhea, vomiting, stomachache, cholera, weak eye sight, physical weakness and malaria etc. Either leaf juice or root juice or stem juice is also drunk to cure above-mentioned diseases.
25. B.N.: *Cyanotis vaga*
L.N.: Gurguj in TH and Musa kane in Nep.
This herb is fed to the livestock to cure intestinal spasm and other abdominal diseases. Steam bath of entire plant is used to cure joint problem or gout.
26. B.N.: *Ageratum conyzoides*
L.N.: Gandhaini in TH and Gandhe jhar in Nep.
The leaf juice is used to cure cuts and wound. It is also used to cure wounds between the toes, caused by walking bare foot during the rainy season.
27. B.N.: *Artemisia vulgaris*
L. N.: Patiya in TH and Tite pati in Nep.
Decoction of leaves is used to bath to cure scabies. Leaf juice is also rubbed in the legs to keep leeches away. Leaf is also used by the witch doctors to heal different diseases unspecified.
28. B.N.: *Caesulia axillaries*
L.N.: Agiya in TH and Magar mala in Nep.
It is used as Jantar (a piece of wood wrapped with cloth and worn on the arm) to cure shivering fever.
29. B.N.: *Eclipta prostrata*
L.N.; Vagraila in TH and Viringe jhar in Nep.
Shoot is fried in oil and eaten to cure bleeding from mouth and nose. Burnt Shoot is mixed with some mustard oil and used in the eyelids to cure infection

of the eyes. Paste of Entire plant is applied locally in different types of skin disease like scabies and fungal infection.

30. B.N.: *Cordia dichotoma*

L. N.: Chat bohar in TH and Bohari in Nep.

The barks, leaves and the berries are used against fever, soreness and chest infection. It is also used as anthelmintic.

31. B.N.: *Benincasa hispida*

L. N.; Bhundkuhara in TH and Phusre Kubinda in Nep.

It is cultivated, and skin peeled fruit is eaten mixed with sugar and left for one night and eaten next morning to cure the sensation of internal heat. Heated leaf or fruit is used to cure wound made by external hit. A glass of fruit juice is drunk twice a day for 3 month to cure gallstone.

32. B.N.: *Coccinea grandis*

L.N.: Pehata in TH and Gol kankri in Nep.

The leaf and fruit is boiled and the steam is inhaled from the mouth to cure toothache.

33. B.N.: *Cucumis sativus*

L.N.: Khira in TH and Kakri in Nep.

The seed along with the seed of Bayar, Amaro, ratigedi and lauka is eaten to cure chronic cough. 10-15 years old skin or fruit juice is drunken one spoonful twice a day for 3 month to cure gallstone.

34. B.N.: *Diplocyclos palmatus*

L.N.: Karela in both TH and Nep.

The fruit is eaten to cure fever and it also purifies blood. It is also used to check high blood pressure.

35. B.N.: *Lagenaria siceraria*

L.N.: Lauki in TH and Lauka in Nep.

The seed along with the seed of bayar, kankri, Amaro and ratigadi is eaten to cure a chronic cough.

36. B.N.: *Trichosanthes dioica*

L.N.: Paror in TH & Parwar in Nep.

The root juice of this climber is drunk twice a day to cure sensation of heat and fever. The root juice is also drunk to cure constipation and fever. It is rubbed in the stomach to cure stomach inflammation.

37. B.N.: *Trichosanthes tricuspidata*

L.N.: Laukayand in TH and Indreni Phal in Nep.

The root juice is taken for two days (Twice a day) to cure fever. The root paste is rubbed on the swollen legs of the pregnant women.

38. B.N.: *Shorea robusta*

L. N.: Sakhuwa or Agrakha in TH and Sal in Nep.

The resin (gum) is eaten by mixing with yogurt to cure diarrhoea. And resin is applied locally on the wound

39. B.N.: *Equiserum diffusum*

L.N.: Hatha jore in TH and Aankhe Jhar in Nep.

The stem paste is used to set fracture, sprain or dislocated bone.

40. B.N.: *Euphorbia hirta*

L.N.: Dudhkutri in TH Dudhe Jhar (Thulo) in Nep

The milky juice (latex) of this herb is used to cure cuts.

41. B.N.: *Euphorbia parviflora*

L.N.: Sano dudhkutri in Th and sano dudhe jhar in Nep.

Two spoonful of plant juice is given twice a day to children to cure diarrhea. Milky juice is used to cure boil and wounds. Root juice is drunk to produce milk for the maternity women who lack milk.

42. B.N.: *Euphorbia royleana*
 L.N.: Siundhi in TH and siudi in Nep.
 It is a hedge plant planted around the field. The milky sap is eaten by mixing with flour to cure constipation. Paste of leaf is applied locally to cure chronic wound.
43. B.N.: *Jatropha curcas*
 L.N.: Nijod in TH and Sajwan in Nep.
 The stem decoction is used as antibiotic. Small piece of stem is used as tooth brush to cure toothache.
44. B.N.: *Phyllanthus Emblica*
 L.N.: Aanura in TH and Amala in Nep.
 The fruit of this plant along with fruit of harro and barro is used to cure disease like sprain, muscular pain, hepatitis, fever, headache, gout, intestinal spasm, stomachache, body ache, diarrhea, vomiting, periodic fever, cholera, weak eye sight, physical weakness, Malaria etc. Either leaf juice or root juice or stem juice is drunk to cure the above mentioned diseases. Warming eyes with water is boiled with the seed of this tree cures eyes pain and weak sight of eyes.
45. B.N.: *Cynodon dactylon*
 L.N.: Dubo ghans in both TH and Nep.
 Yellow eyes of a patient with hepatitis are cleaned with this grass and mustard oil but they believe that the chanting of Mantra is needed.
46. B.N.: *Dendrocalamus strictus*
 L.N.: Bans in both TH and Nep.
 The plant sap is drunk to produce milk for the maternity women who lack milk.
47. B.N.: *Imperata cylindrica*
 L.N.: Bharuha in TH and siru in Nep.
 The root juice is drunk as an anthelmintic .

48. B.N.: *Saccharum spontaneum*
L.N.: Sink in TH and Kans in Nep.
The root is used as diuretic. It is also used in some disease of blood unspecified but is believed to purify the blood.
49. B.N.: *Thysanolaena maxima*
L.N.: Banspatiya in TH and Amriso in Nep.
The stem along with inflorescence is used by witch doctor to cure different diseases.
50. B.N.: *Colebrookea oppositifolia*
L.N.: Dhurselia in TH and Dhursul in Nep.
The juice from tender shoots is put in the eyes of the cattle to cure cataract. The shoot along with the root of Kurilo, bark of Bar, fruit of vuinkatahar and the root of Mahai is eaten on empty stomach to cure urinary complaints.
51. B.N.: *Mentha arvensis*
L. N.: patina in TH and pudina in Nep.
Either leaf juice is mixed with water and drunk in empty stomach to cure fever and sensation of internal heat and also in constipation problem.
52. B.N.: *Occimum tenuiflorum*
L. N.: Tulsi in TH and Tulasi in Nep.
It is cultivated in the fore yard of the house and is used to cure throat pain and sore of mouth. Leaf juice is put in the ear to cure ear pain and infection in the ears. One or half spone full juice of leaf is used twice an orally by children to cure cough and common cold. This is an herb plant and believed that it purifies the air around the house.
53. B.N.: *Pogostemon bengalensis*
L.N.: Utijhar in TH and rudhilo in Nep.
The leaf is crushed and its mild pungent smell is inhaled, or juice of leaf is painted on the forehead to cure headache and fever. Shoots are heated in the

fire and fed to the child to cure cold. Shoot paste is also painted on the head of the child to cure cough and cold.

54. B.N.: *Litsea salicifolia*

L.N.: Hadjoruwa in TH and Hadchur in Nep.

The bark is used to plaster fractures part and it also kills pain and cures sprain. Bark paste is also used to cure pain on the swollen part of the body.

55. B.N.: *Abrus precatorius*

L.N.: Titihir in TH and Rati gedi in Nep.

The root juice is drunk in to cure in case of urine infection. It is eaten along with the seed of Kankro , Bayar, and Amaro to cure chronic cough.

56. B.N.: *Acacia chtechu*

L.N.: Khair in TH and Khayar in Nep.

The bark along with the sikari lahara is used to plaster the fracture part of the body. Leaf along with leaf of Dahichamle and burnt chilly are mixed and crushed to make paste which is applied locally to cure skin diseases.

57. B.N.: *Bauhinia vahlii*

L.N.: Vela in TH and Bhorla in Nep.

Seeds are used to increase the blood and are believed to have aphrodisiac property.

58. B.N.: *Butea monosperma*

L.N.: Tens in TH and palans in Nep.

The bark juice of the tree is drunk as a tonic and also increases the blood production.

59. B.N.: *Cassia fistula*

L.N.: Ahiroga in TH and Raj Briksha in Nep.

If the fruit pulp is eaten from its upper part is meant for the cure of Insomania. Paste of coppice is used locally to cure fungal infection on the skin.

60. B.N.: *Crotalaria tetragona*
L.N.: Chimchime Jhar in TH and in Nep.
The seed are eaten to cure and purify the blood. The leaves are used as demulcent.
61. B.N.: *Desmodium ojeinensis*
L.N.: Panan in TH and sadan or sandan pipla in Nep.
A half glass of bark juice is drunk twice a day to cure dysentery. About 200ml bark juice is drunk for two to three days to cure intestinal spasm.
62. B.N.: *Flemingia strobilifera*
L.N.: Kanja in TH and Kanni in Nep.
A branch is hung above the bed of a child weeping during the night. Fruit boiled with mustard oil is put in the pain ears.
63. B.N.: *Mimosa pudica*
L.N.: Lajmuni jhar in TH and Lajjawati in Nep.
One glass of either leaf or stem or root juice is drunk, for three days to cure gastric problems.
64. B.N.: *Spatholobus parviflorus*
L.N.: Mahai in TH and Birali or Mahajane in Nep.
The juice is drunk to cure dysentery. Root along with fruit of Bhuinkatahar, bark of bar, shoot of Dhursul and the root of Kurilo is eaten on an empty stomach to cure urinary complaints.
65. B.N.: *Uraria picta*
L.N.: Tinpatiya in TH and Tin pate in Nep.
Root juice is rubbed in joint pain and paste of the root is painted on the swollen part of the body.
66. B.N.: *Vicia Angustifolia*
L.N.: Ankara in TH and Kutila Kosa and Ankara in Nep.
The root juice of the herb is used to cure fever.

67. B.N.: *Aloe vera/barbadensis*

L.N.: Dhekuari in TH and Ghiukumari in Nep.

It is cultivated in the farm field of farmers. The whole plant is used for medicine. The sticky substance of the leaf is used in burns and also is rubbed on the body part with nerve problems. The juice is taken as a tonic in a sensation of very hot, ulcer and also in jaundice.

68. B.N.: *Asparagus racemosus*

L.N.: Kurla in TH and Kurilo in Nep.

The root is crushed and eaten by women to produce milk from their breast, to cure fever and in excessive quantities it is fed to make vomiting to whom has swallowed poison. Root along with the bark of bar, fruit of Bhuikatahar, root of Mahai (birali) and shoot of Dhursul is eaten on an empty stomach to cure Urinary problem/ complaints. Root along with sugar decoction is used as tonic of high value.

69. B.N.: *Lagerstroemia parviflora*

L.N.: Dhayara in TH and Bot Dhayaro in Nep.

The latex is taken to treat diarrhea, dysentery and cholera. Paste of flower is also used for above disease. Mildly heated bark paste is applied locally on burnt wound.

70. B.N.: *Sida rhombifolia*

L.N.: Bariyara in TH and Ballu in Nep.

The pastes from the leaves of this shrub are used to cure soreness a pain and swellon wound (Pilo).

71. B.N.: *Thespesia lampas*

L.N.: Ban kapas in both TH and Nep.

The root juice is drunk to cure urinary diseases. Paste from the skin of the root is used in the external soreness and wounds. Root juice is rubbed in the forehead in the stage of headache.

72. B.N.: *Azadirachta indica*

L.N.: Nim in both TH and Nep.

This is cultivated in the home yard. The leaves of Nim are boiled with water and the decoction is used to bathe a person having boils all over his body and also used to bathe to cure skin disease like scabies. Half a glass Nim water is drunk to cure sensation of internal heat and fever. Powder of leaf is taken as an anthelmintic.

73. B.N.: *Melia azedarach*

L.N.: Mithi Nim in TH and Bakaino in Nep.

This tree is highly planted by the people cultivate field. The leaves are boiled in water and the decoction used to bathe a person having boils or other skin diseases. Half a glass of leaf juice is drunk every day for a couple of days to cure sensation of internal heat and fever. Powder of the leaves is taken to kill worms in the abdomen.

74. B.N.: *Cedrella toona*

L.N.: Tona in TH and tooni in Nep.

The bark is used as astringent, tonic and against dysentery.

75. B.N.: *Cissampelos pareira*

L.N.: Gujar gano in TH and in Nep.

The stem or tuber powder is used to cure intestinal spasm and dysentery. It is also used as tonic. Stem bathe of tuber and stem is used to cure gout.

76. B.N.: *Stephania elegans*

L.N.: Batuliya in TH and Batul pate in Nep.

It is very popular species in tharu community of this area. Root juice is drunken two to three days to cure intestinal spasm. The root juice is also drunk for cure of fever and also for tífide.

77. B.N.: *Tinospora sinensis*
 L.N.: Gruja in TH and Gurjo lahara in Nep.
 The juice is made from the vine and a spoonful is drunk for three days to cure none fracture and sprain. Leaf or root juice drunk along with either root or fruit juice of pipla (*Piper longum*) to cure heart pain, chest pain, burning sensation during urinating. Small Piece is used to make Buti by packing it in a cloth and used to cure the child suffering from marasmus.
78. B.N.: *Artocarpus heterophyllus*
 L.N.: Katahar in TH and Nep.
 The leaves used in skin diseases and antidotes to snake bite. Root is used in diarrhea, unripe fruit used as laxative.
79. B.N.: *Ficus bengalensis*
 L.N.: Bar gaduwa in TH and Bar in NEP
 Bark of this tree along with root of Kurilo, fruit of Vuinkatahar, Dhursul are taken in an empty stomach to cure urinary disease. Paste of burnt leaf of Bar and Peepal is applied locally to cure burnt wound.
80. B.N.: *Ficus religiosa*
 Paste of burnt leaf of Bar and Peepal is applied locally to cure burnt wound. Bark is used in gonorrhoea. Leaves and young shoot are purgative. Fruits are laxative.
81. *Ficus racemosa*
 L.N.: Gullar in TH and Dumri in Nep.
 One spoonful of milky juices is drunk to cure stomachache and intestinal spasm. Latex is used locally to cure wound.
- B.N.: *Ficus semicordata*
82. L.N.: Khurhur in TH and Khanyu, Khanayo, Khanim in Nep.
 Three to four drops of milky sap (latex) of this tree is drunk to cure fever.

83. B.N.: *Morus alba*
L.N.: Tut in TH and Kim Kaphal in Nep.
Fruit is used to cure fever; Bark decoction is used in gargling to cure inflammation of throat. Root juice is used as anthelmintic and astringent.
84. B.N.: *Moringa oleifera*
L. N.: Satersinni in TH and Sital Chini in Nep.
The fruit is eaten to relief from heat. Fruit is boiled with some salt and eaten to cure fever. Paste of bark is applied locally to cure filarial.
85. B.N.: *Musa sepianum*
L.N.: Kela in TH and Kera in Nep.
This is cultivated in the farm of the farmers. One glass root or bulb juice is drunk for 3 days to cure fever. It also improves the eye vision. Unripe banana fruit is also eaten against abdominal spasm and dysentery. One glass per day bulb juice is also drunk for three month to cure gallstone.
86. B.N.: *Psidium guayava*
L.N.: Amrute in TH and Belauti, Amba in Nep.
The seed of the fruit is boiled in water and eaten to cure diarrhoea. Bark juice along with bark juice of simal and Aamp is drunk to cure dysentery and intestinal spasm. Youhg shoots are eaten to cure intestinal spasm.
87. B.N.: *Syzigium cerasoides*
L.N.: Bodar in TH and Kyamun in Nep.
One spoonful of bark juice is drunk twice a day for three days to cure diarrhea. Bark of this tree and bark of the Karma are mixed and eaten by women to control miscarriage.
88. B.N.: *Syzygium cumini*
L.N.: Jam TH and jamuna in Nep.
One spoonful of bark juice is drunk twice a day for three days to cure diarrhea. Bark of this tree and bark of Karma are mixed and eaten by the women to cure miscarriage.

89. B.N.: *Oxalis corymbosa*
L.N.: Amchochar in TH and Chari Amilo in Nep.
One glass of mixed juice of this herb and juice of Ghod-tapre is drunk for a week to cure sensation of internal heat. Leaf juice is drunk to control vomiting. It is mixed with milk and fed to the children suffering from diarrhea. Leaves of this herb are eaten to cure throat problem.
90. B.N.: *Piper Boehmeriifolia*
L.N.: Pan ko pat in TH and Nep.
The leaf or stem is eaten to cure cough and wound of mouth.
91. B.N.: *Piper longum*
L.N.: pharihi peepal in TH and pipla in Nep.
A fruit is eaten to cure swelling of stomach and stomachache. It is also mixed with the leaf or root juice of Gurjo lahara and drunk to cure heart pain, Chest pain and burning sensation while urinating. Root juice or fruit is also eaten to cure fever, bleeding from mouth, sensation of internal heat and cough. Fruit juice is also rubbed on the stomach to get rid of sensation of internal heat.
92. B.N.: *Punica granatum*
L.N.: Anar in TH and Nep.
Flower is fed to a child having problems due to drinking too much water. Bark of fruit or flower is eaten to cure diarrhea and dycetry.
93. B.N.: *Ziziphus jujuba*
L.N.: Rukh Bayar both in TH and Nep.
It is cultivated around the home garden of the Tharu people. The fruit juice is eaten to cure the sensation of internal heat.
94. B.N.: *Prunus Persica*
L.N.: Aru in both TH and Nep.
This is fruit planted around the farmland of farmer. The bark paste is used to cure septic wound. Young shoots along with young shoots of Amba are eaten to cure internal spasm.

95. B.N.: *Adina cordifolia*
L.N.: Karmi TH and Haldu and Karma in Nep.
Bark juice with two and half grain of black pepper is drunk to cure inflammation of stomach. Bark along with the bark of Jamun is eaten to cure miscarriage of women. Paste of young shoots is applied locally to cure wound between toes caused by water.
96. B.N.: *Coffea benghalensis*
L.N.: Bahramase Phool in TH and in Nep.
The flower juice is drunk to cure excessive bleeding (Menorrhagia).
97. B.N.: *Xeromphis spinosa*
L.N.: Mel kada in TH and Mayin Kanda in Nep.
The fruit is eaten to cure the eye infection.
98. B.N.: *Aegle marmelos*
L.N.: Bel in both TH Nep.
The fruit juice is made from the ripe fruit and used to cure diarrhea and the sensation of heat and is also used as a tonic.
99. B.N.: *Citrus aurantifolia*
L.N.: Nimmu in TH and Kagati in Nep
It is found cultivated but also found in wilds. The fruit juice is drunk to cure fever. It also cures diarrhea and vomiting.
100. B.N.: *Citru maxima*
L.N.: Bhakuwa nimmu in TH and Vogate in Nep.
The fruit juice is drunk to cure cough.
101. B.N.: *Capsium frutescens*
L.N. Mirch in TH and Khursani in Nep.
The root juice is drunk to cure sensation if internal heat.

102. B.N.: *Duranta metel*
L.N.: Dhatura in TH and Kalo Dhatura in Nep.
Leaf paste is used to cure wounds. It is also fed to goats and sheep to cure sore mouth.
103. B.N.: *Sterculia isora*
L.N.: San in TH and Pat in Nep.
The root juice is drunk to cure fever. Root juice is rubbed on the swollen part of the body. Root paste is used to cure boils and wounds.
104. B.N. *Centella asiatica*
L.N.: Ghortapaya in TH and Ghod tapre in Nep.
The stem or leave juice about 200ml. is drunk to cure the fever and sensation of internal diseases i.e. the heat. The mixture of it with Chnijhar (*Scoparia dulcis*) and sissnu is drunk for 3 days to cure Typhoid. Plant juice is taken along with the Chari Amilo for a week to cure sensation of internal heat.
105. B.N. *Boehmeria ternifolia*
L.N.: Gandhaini in TH and Gandhejhar in Nep.
The juice of the leaves and the paste of stem are used to control the cut bleeding and wounds.
106. B.N. *Callicarpa microphylla*
L.N.: Dahi goia in TH and Dahi chamale in Nep.
The root paste is drunk either mixing with water or with in milk to cure throat pain of the child. One glass of leaves or young shoot juice is drunk in the throat pain of a child for 3 days once in a day. It is also taken to cure the gastric and the sensation of internal heat to the children as well as adults also. The root juice is drunk to cure sore mouth and different abdominal problem. Paste of leaves is applied locally to cure fungal infection of skin.
107. B.N. *Amplocissus rugosa*
L.N.: Tihuki in TH and Ban Angur in Nep.
Paste of tuber is used to plaster bandage on fracture.

108. B.N. *Costus speciosus*
L.N.: Bet in both TH and Nep.
The vapor from the boiling the root is used to warm the swollen part of the body. Stem and leaf juice is rubbed on the swollen part of the body.
109. B.N. *Crucuma angustifolia*
L.N.: Kariya hardi in TH and Kalo besar in Nep.
The tuber decoction along with little salt is drunk to cure fever and rubbed on the chest to cure heart pain. Powder of tuber one spoonful twice a day is drunk with mild hot water to cure diabetese.
110. B.N. *Curricula domestica*
L.N.: Hardi in TH and Besar in Nep.
This is cultivated spices in the garden of the tharu people and the powder of tuber is boiled and the decoction is drunk to cure the cough.
111. B.N. *Zingiber officinale*
L.N.: Adrkh in TH and Aduwa in Nep.
This is also cultivated in the farm land of the farmer and the rhizome is eaten by boiling its juice with some honey or with some water and sugar to cure cough.
112. B.N. *Cuscuta reflexa*
L.N.: Chimar lati in TH and Aakasbeli or Amarlata in Nep.
One glass juice of this Climber is drund twice a day for one month to cure jaundice.
113. B.N. *Lawsonia inermis*
L.N.: Mehendi in TH and Mehadi in Nep.
Bark juice is drunk to cure jaundice. Paste of bark is applied locally to cure skin disease and leprosy. Leaves are rubbed to cure headache. Leaf juice mixed with water and sugar is given as a remedy for spermatorrhoea. Decoction of leaves is astringent and used to gargle in sore throat. Paste of leaves is used in falling of hairs and also used in hair growth and dye. Juice

of leaves along with leaves of Githa and Aank is drunk 3 times within 15 days to cure dog biting.

114. B.N. *Ocimum basilicum*

L.N.: Bebri in TH Babari in Nep.

Root juice is used in bowel complaints of children. Warm juice of leaves along with honey is given to the treatment of cough. Seeds are given to cure gonorrhea, dysentery and chronic diarrhea and also chewing to cure the wound inside mouth.

115. B.N. *Carica papaya*

L.N.: Mewa in both TH and Nep.

Ripen fruits are eaten to cure jaundice. Unripe fruits are eaten in constipation problem. Root juice is drunk to cure gallstone. Milky juice of unripe fruits is used as a cosmetic to remove freckles and other blemishes from the skin.

Table 6.1: Belief on traditional system of treatments

S.N	Category	No fo HH	Percent	Remarks
1	They give first priority	9	9.47%	
2.	They give second priority	29	30.53%	
3	They rarely believe	57	60%	
Total		95	100	

Source: field survey 2008

5.3 Impact of Modernization/ Urbanization on the Conservation as well as on the Utilization of Medicinal Plant Resources.

Like other community, the tribal tharu community was also affected by the effect of modernization / urbanization. Due to the impact of modernization / urbanization they have been forgetting the valuable IK systems which they had developed since very beginning of past history. Such IK systems are the special identities of tribal group which had been supporting them to cope with several needs and problems. Due to

lack of documentation and lessen interest of new generation the IK systems on the use of medicinal plant is decreasing day by day or generation to generation. IK systems are disappearing most rapidly due to destruction of plant resources, becoming less available or lack of proper attention of new generation toward it through effect of modernization. Impact of modernization / urbanization on the conservation as well as utilization of medicinal plant resources are summarize as bellow:

- Research study displayed that respondents from young aged class (18-35 years) totally gave first priority to the modern medicine and didn't belief on IK system.
- Focus group discussion among the youth of study area concluded that they don't belief on such IK system and also found not interested to learn such indigenous knowledge.
- Respondents from Bathuwa village which is situated nearby the Bansgadhi market center were found little belief or lower attention toward traditional harbal treatment done by Baidawa (traditional healer) and more belief or higher attention toward modern medicinal system in comparison to the respondents from Banmuduw village situated quite far from market center and so far apart from hazard of modernization.
- Emerging market economy is the product of modernization / urbanization / globalization. Emerging market economy causes over exploitation of medicinal plant resources which causes destruction of medicinal plant resources in local periphery which ultimately impact on conservation and utilization of medicinal plant resources.
- Several development activities like construction of road, irrigation cannel, and other infrastructure can play vital role on destruction of medicinal plant resources which is another impact of modernization / urbanization on conservation and utilization of medicinal plant resources.
- Due to availability of modern medicinal facilities in or nearby the village and development of road and transportation facilities in the village, people

used to go hospital or clinic in every health problems ignored to the herbal medicine system.

- Youth of study area showed various drama against Guruwa and Baidawa saying that the traditional herbal treatment systems are myths and conservative and also convinced local people not to believe on IK system on the use of medicinal plant and threatened traditional healer saying them a cheater and compelled them to leave such treatment system. Such type of so-called awareness programme was the product of modernization which causes adverse effect on conservation and utilization of medicinal plant resources.
- Advertisement of modern medicinal treatment system through different media like Television, Radio etc has lessen the belief and attention of local people on IK system on the use of medicinal plant.
- Destruction of the forest resources for various purposes is the major impact of modernization / urbanization on conservation and utilization of medicinal plant resources.

5.4 Problems and Prospective

IK system on the use of medicinal plant resources has several problems and prospective which are mentions as bellow:

Problems:

- Lack of documentation of such oral IK system on the use of medicinal plant. Such IK system may disappear forever due to lack of proper documentation.
- Destruction of medicinal plant resources by human activities.
- Over and excessive exploitation of medicinal plant resources by the local people for their vested interested.
- Lack of proper attention and belief of new generation toward IK system on the use of medicinal plant.

- Hesitation of traditional healer on shearing such IK system to other people believing that these treatments practices will be worthless after shearing it to other is the major problem of knowledge transformation.
- Disliking on shearing such IK systems to other people thinking that if everybody knows such IK system, own popularity will be lessen is another problem of knowledge transformation.
- Lack of systematic and professional trend of herbal treatment system among tharu community of the study area.
- Traditional healer demand no fee and waist their time and skill with out any economic benefit only for a glass of alcohol. His family members feel boar from the disturbance given by the patient through calling him in the time of farm work and even in the night without any economic support. On above situation nobody of his family or relatives want to learn such IK system which may causes the loss of such IK system forever from their community.
- The cultural system of throwing the personnel things of dead person along with the dead body among tharu community of study area is another cause of loss of such IK system from the tharu community.
- Allopathic medicine effect very fast while herbal medicine take long time on treatment so belief of local people on IK system on the use of medicinal plants was being decreasing day by day.
- People who were not aware about dose of herbal medicine might face adverse effect which might help on decrease the belief of local people on IK system on the use of medicinal plants.
- Due to lack of knowledge about identification and utilization of medicinal plant, local people misused the medicinal plant resources as fodder and firewood and other purpose.
- Lack of NTFP registration and documentation of medicinal plant resources found around the study area.

Prospective:

IK system on the use of medicinal plant among tharu community of the study area has the following perspectives:

- If such IK system on the use of medicinal plants are used systematically and professionally by Baidawa (traditional herbal healer), it can contribute economically for their livelihood.
- Local people can get treatment locally and easily by using local resources which may save their time and money.
- Documentation of such orally spread IK system on the use of medicinal plant can give the distinct identity of indigenous tharu people and established as abstract property of tribal as well as the nations.
- Facilitation of learning / teaching practice of such IK system may help to conserve the local resource of medicinal plants and utilization of it easily by every person of the community when they needed.
- If such herbal treatment practices become systematic, professional and economically viable, attraction of the young generation toward the IK system on the use of medicinal plants will be increased and such system will be conserved forever.

CHAPTER -VI

SUMMARY, CONCLUSION AND RECOMMENDATION

6.1 Summary

The present study was conducted as a case study of Indigenous Knowledge system on the use of medicinal plants among Tharu community. Motipur VDC Ward no 2 Bathuwa village which represent Dangali tharu and Belwa VDC ward no 2 Banmuduwa village which represent Desauri tharu, were the selected area of the study. Motipur VDC has 3146 households having total population 19388 among which 10409 (53.69%) were tharu people. Out of total households in the V.D.C. the tharu households in Bathuwa were 209 households. Similarly, Belwa VDC has 2015 households having total population 12234 among which 5564 (45.47%) were tharu people. Out of total households in the V.D.C. the tharu households in Banmuduwa were 105 households. Tharu people of the study area are economically poor & educationally illiterate in comparison of other society like Indo-Aryan. Still they are in pitiable & downtrodden condition. They believe on the super natural power. Every ceremony and custom, they need the plants in one or another ways. As Tharu are indigenous people and believe in Gurawa and Baidawa (a traditional healer in the tharu community) at present neither Tharu totally leave the traditional herbal practice nor they could successfully adopt in modern medicine so that this time is very challenging for them. This research thesis has tried to make documentary of traditional healing practices on the use of medicinal plants among Tharu community of the study area from the field survey and queries asked with the villagers in the village. After the field survey is completed, I came to know that the young and the so called educated people were found not so much interested in the traditional healing knowledge of the Gurawa and Baidawa. Even though, older people are still believing and practicing of the herbal plants as medicines. If someone becomes ill in the tharu Community, first of all they call a gurawa or Baidawa for traditional treatment. Tharu Gurawa or Baidawa offers something to supernatural power and provides some herbal medicines for the patients. When the Gurawa or Baidawa think that the case could not improve, he then suggests taking up the patient to the clinic or to the hospital. Baidawa used to collect herbal medicine from nearby jungle or cultivated land. Seasonally available part like fruit, seed and flower were collected respective season

and stored for the whole year and other parts like roots, bark, leaves, entire plants etc were collected when needed.

In the course of study on the subject matter, both descriptive and exploratory research design were employed to get the reliable data and information. All together sample size of 95 HH was selected from the both village by using stratified random sampling method and discussed with them by using semi structured questionnaire to gather the required information like economic and IK system on the use of medicinal plants to cure different diseases. 9 Traditional healers were purposively selected from in and outside the selected villages as the Key informants and other knowledgeable person i.e. 2 local teachers, 2 local social worker and 2 NGOs representatives were also purposively selected as the key informants for this research study. Focus group discussion with several groups of the study area i.e. youth group, women group etc were also conducted. Semi structured questionnaire, interview guideline, different checklists; several PRA tools were used to draw information about respondent's socio economic status, healing practices, traditional practices on mode of medicines preparation, dose, storage etc.

6.2 Conclusion

The investigation has been an evident that the tharu people of the study area are rich in indigenous knowledge on the use of medicinal plants as local medicines and majority of the respondents have positive attitude toward forest and medicinal plant resources. This research resulted that the tharu people of the study area are still using 115 species of medicinal plants including herbs, shrubs and trees. A single species is being used for different disorders but the local knowledge of healer are preferred for diagnosing a disease accurately and prescribing a appropriate plants species for the cure of concerned disorder. The treatment methods are similar to Ayur-Veda, and this indicates that their sources of knowledge could be imitated by the Ayurved in the very beginning of their civilization in the past history. The medicinal plants were collected seasonally as well as frequently when needed according to their nature and specific parts of the plants were found in used. Baidawa (traditional herbal healer among tharu community) were engaged in treatment practices. Majority of them were providing such treatments none professionally and unsystematically without any financial motive. Some of them were found professional too but they also not compelled the

patient for certain fixed charge. A wide range of ailments was treated locally by using the medicinal plants. People from old aged group as well as women and economically poor people have faith in the efficiency of these medicines. In some cases, combination of plants was found effective for the best results. Destruction of the plant resources, increasing trend of allopathic treatment and decreasing trend of believe on traditional healing system, less attention of young generation toward IK systems on the use of medicinal plants, various problem of knowledge transformation, certain rules of national park and other community forest, plant part storing techniques and preparation method etc were mostly limiting to the local healers. The local healers treat villagers during their illness, so the Baidawa is respected considerably by the people living the village or in the society. The weak economy and the faith in the herbal treatment made them dependent on the herbs for treating most diseases. The religious inspiration, weak economy, locally available medicinal plant resources and inherent relation of tharu community with the natural resources seem to be the causes of preferring the IK of plants medicines. New generation were found shy and reluctant to learn the healing system because of less reliability and more time consuming as well as quite difficult to identify various plant species and understand such IK system and their proper use.

Among medicinal species, mainly the root, fruit, leaves; tender shoots, whole aerial parts and the tree species are the main sources of medicines. It was also found that besides Gurawa and Baidawa, many elder men and women in the village have sound knowledge about medicinal values of some plants. Main medicinal plants which were frequently used in this area are Nim, Amala, Harro, Barro, simal, jamun, Datiwan, Batulpate, Kurilo, pipla, Amarlata, Babari, Tulasi, Bel etc. Especially; those species are frequently used for common diseases like fever, common cold, heat sickness, headache, stomachache, diarrhea, dysentery, fracture, snake biting and other minor wounds or cuts.

6.3 Recommendations

On the basis of the findings and conclusion it is recommended that IK systems on the use of medicinal plant be the best approach to reach poor and remotely residing people. There should be integration of allopathic medicine with traditional herbal healing system. Some of the recommendations of this study can be stated as follows:

- J The importance of **indigenous knowledge** on the use of plant as medicines should be extended in the ground reality. For these both the formal and non-formal education program should immediately start in the Tharu village.
- J Misuse of the medicinal plant resources i.e. as fodder and firewood should be control by giving knowledge to the local people about medicinal plant identification and their significance.
- J The Buffer-Zone Community forest and community forest should introduce the high valued medicinal plant species in the forest as early as possible.
- J Indigenous rights of tharu people toward local resources should be preserved in local as well as the national level.
- J Destruction and over exploitation of forest resources should be controlled in local people's participation.
- J Various types of facilities i.e. economic, infrastructural etc should be provided to the Baidawa to promote such treatment system as systematic and professional manner which may help them to earn their livelihood and local people to save their money and time by using local resources for their health care.
- J The local people should be motivated to farm the threatened high valued medicinal plants i.e. pipla, kurilo, Amala etc in their own farms and the production of these medicines should be guaranteed for the sale outside the village to encourage continuing to grow in their land.
- J Conservation of IK is the conservation of the property of the society and is also the promotion of the culture and the environment, so immediate or prompt action plan for traditional healing knowledge system should be designed and implemented in the field and the mode of preparation of medicine from the plants should be taught to the young generation.
- J The Tharu people are the indigenous people residing in Terai of Nepal from East to West and they have shown a unique feature of culture with the local environment and adopted an indifference way of lives. A program of "conservation of people" i.e. to conserve the Tharu rite should be conducted.
- J A list of all the plant specie found in the village should be prepared from the assistance of concerned experts and traditional experts. This should be

published in the calendar and the plant species that can be used for a particular disease should be written in the side of the calendar. This will extend the knowledge about the time of collection of the specific species and its mode of preparation of medicine and hence help to promote the IK on the use of medicinal plants in the Tharu Community.

-) It is suggested to prepare a roster that have expertise in the IK healing system on use and identification of such valuable medicinal plants species found in the study area.
-) Detail and vague research study should be conducted to explore such IK system more detail and precise manner.

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ANNEX-1

Name of key informants:

1. Phul Ram Chaudhary	Baidawa	Katarniya (Dhadhwar VDC)
2. Subedar Chaudhary	Baidawa	Katarniya (Dhadhwar VDC)
3. Phulmaya Chaudhary	Baidawa	Katarniya (Dhadhwar VDC)
4. Nain Bahadur Chaudhary	Baidawa	Katarniya (Dhadhwar VDC)
5. Chandra Lal Tharu	Baidawa	Bathuwa village
6. Jokhan Tharu	Baidawa	Belwa VDC
7. Panna Lal Tharu	Baidawa	Banmuduwa village
8. Rawan Tharu	Gurawa	Laxmanpur village
9. Baburam Paudel	Baiddha	Belwa VDC
10. Mewa Lal Chaudhary	Teacher	Belwa VDC
11. Phaggu Ram Chaudhary	Teacher	Motipur VDC
12. Ranga Lal Chaudhary	Social Worker	Bathuwa village
13. Phatte Shing Tharu	Social Worker	Banmuduwa village
14. Radheshyam Chaudhary	BASE Bardiya	
15. Siwani Shing Tharu	Mahila Utthan Kendra, Bardiy.	

Annex-2

Questionnaires model for household survey

General

1. Name of the respondent:-
2. Address /Village:-
3. Interview code number:-
4. Date of interview:-
5. Individual profile of family member:-

Age:

S.N.	Name	Sex	Age	Education	Occupation	Remarks

Specific

1. Land holding:

S.No.	Types	Area			Remarks
		Own ownership	Landlord's ownership	Parti/Ailani	
1.	Khet				
2.	Bari				
3.	Others				

2. Occupation and Income Sources:

Occupation	Main	Subsidiary	Yearly income Rs.	Remarks
Agri/Animal husbandry				
Trade/business				
Labour				
Foreign employment				
Services				
Others(if any)				

3. Livestocks:

S.No.	Types of animals	Number	Remarks
1.			
2.			

4. Food sufficiency from own production

- Sufficient for less than 3 month. Sufficient for 6-9 months
 Sufficient for 3-6 months. Sufficient for 1 year. Surplus.

5. Where do you herd your livestock?

Questionnaires regarding indigenous knowledge on the use of medicinal plants:

1. What are the common diseases of this area?
- 2 Do you believe the traditional herbal drugs? Why?
- 3 Which medicinal treatment method do you prefer?
 - Traditional herbal.
 - Modern allopathic.
- 4 why do you choose traditional herbal treatment method?
 - Cheep. Available.
 - Lack of modern medicinal facilities. Superstition.
- 4 Do you know the medicinal plant by your self and use it?
- 5 who knows better about methods of treatment by using medicinal plants?
 - Elder person of family Younger who are literate
 - Gurau Other
- 6 How do you know methods of treatments by using medicinal plants?
- 7 How many traditional healers are there in your village?
- 8 Which medicinal plants do you use for different diseases? And how?

S. no	Tharu name	Nepali name	Availa bility	Time of collection	Part used	Used for	Mode of preparation	Mode of conservat ion
1.								
2.								
3.								

- 9 From where do you get the medicinal plants?
 - GMF NP CF BCF PL
- 10 when do you go to collect medicinal plant?
 - When needed seasonally half-yearly yearly
- 11 What are the difficulties to get it in your village?
- 12 Are the medicinal plants resources degrading in comparison to past?
- 13 Do you cultivate the herbal medicinal plants in your lands?
- 14 What are the benefits of IK on the use of medicinal plant?
- 15 Is it necessary to preserve IK on the use of medicinal plant? Why?
- 16 Any younger person engaged as a traditional healer in your village?
- 17 What are the existing problems to use the medicinal plants?
- 18 Do you collect the herbal medicine for sell?

19 What are the internal / external impacts on the exploitation of medicinal plants from the surrounding forest?

20 Is it necessary to preserve the natural resources?

21 Do you go to collect medicinal plants out of Bardia district? If so which one and from where do you collect?

22 What are the endangered medicinal plant species? What should be the Govt. and Local policies have to take action to conserve the medicinal plants?

23 What plants are culturally and ritually important? Where and how they are used?

Sn.	Tharu name	Nepali name	Use	Traditional belief	Remarks

24 what are economically important medicinal plant species found in this area?

25 what are the impacts of modernization/urbanization on the conservation and utilization of medicinal plant resources?

26 How can we preserve IK on the use of medicinal plants as well as medicinal plant resources? What would be the role of GOs, NGOs, and local people?

NOTE: GMF-government managed forest, NP- national park, CF- community forest, BCF- buffer zone community forest, PL- private land, IK- indigenous knowledge, GOs-governmental organizations, NGOs-non- governmental organizations

Annex-3

Checklists for Observation, KII and FGD

3.1 Checklist for Observation

1. Observation at home and homestead

- Alternative energy source
- Type of house / settlement pattern
- No. of Livestock, their sheds, their feed and rearing practices
- Way of earnings (Agriculture, Shop, wage etc.)
- Daily routine
- Electricity facilities

2 Observation at farm lands

- Quality of Land
- Method of irrigation i.e., boring/ Streams
- Cropping pattern

3. Observation at Forest

- Condition of medicinal plants.
- Status of forests
- Community interrelationship with Natural resources.

4 Development Infrastructures

5 Their traditional technique of preparation of herbal medicine and uses.

3.2 Checklist for Key Informant's Interview

- Participants: 1-2; i.e. Traditional healers, Teachers, Social worker, NGO represents
- Time: 1-2 hour in average
- Venue: tea stall, homesteads, farmland.
- Methods: Discussion (Open questions)
- Materials: Locally available materials, marker, flip chart etc.

S.N.	Objectives	Method
1	Daily routine	Discussion/open question
2	Tharu culture	Discussion/open question
3	IK system on the use of medicinal plants	Discussion/open question
4	Sources an availability of medicinal plants	Discussion/open question
5	Trends of believes	Discussion/open question
6	Problems and prospective of IK system on the use of medicinal plants	Discussion/open question
7	Attitude toward forest resources conservation	Discussion/open question

3.3 Checklist for Focus Group Discussion

Participants: Respondents under same category for each.

Group size: Average 11 participants, research and assistants

Time: Approximately one and half hours.

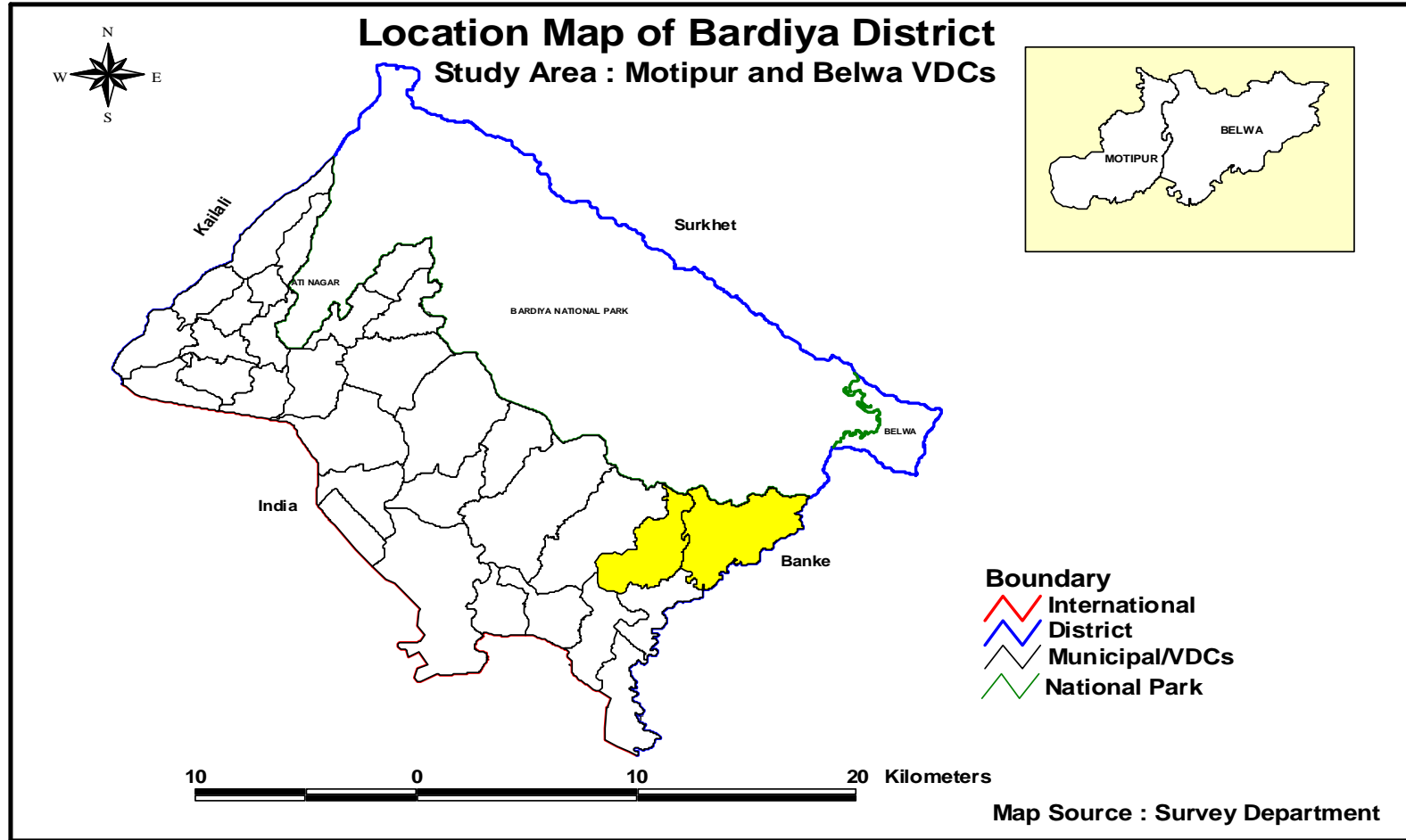
Method: PRA tools like informal discussion, seasonal calendar and trend lines

Materials: Locally available materials like brown paper, marker, stick, etc.

S.N.	Objectives	Method
1	Socio-cultural association	Group discussion/Trend analysis
2	Status of medicinal plant resources	Group discussion/Trend analysis
3	Trend of believe on IK system of traditional healing system	Group discussion/Trend analysis Seasonal calendar
4	Impact of modernization/urbanization	Group discussion/Trend analysis
5	Attitude toward forest resource conservation and utilization	Group discussion/Trend analysis

ANNEX-4
Participatory Map of Motipur-2, Bathua

ANNEX-4
Participatory Map of belwa-2, Banmuduwa



ANNEX -6
Photo Plates



Gurawa (Traditional Healer) Examining Knee of Patient



Local Tharu Making Fishing Net



Baidawa at Diagnosis of Ailment



Baidawa at Treatment of Hand Fracture



Researcher at Discussion with Baidawa about Herbal Medicine



Indigenous Irrigation Technique (Dhiki Pump)



Researcher at KII with Local Baidawa



Researcher at FGD with Local Youth Group