CHAPTER – TWO The Study Region: Physical and Cultural Setting

Nepal is a landlocked, mountainous country where about 75% of the total land is occupied by mountain and hill. The remaining 25% is covered by Terai region.Bounded by Chinain the North and Indiain the East, South and West, Nepal'slocation in the South Asia is in the northern margin.Sandwiched between its two giant neighbors, Nepal has an elongated rectangular shape roughly with north-west to south-east orientation.The country has 147181 square Kilometers in area, which accounts as 0.03 percent of land area of the earth and 0.3 percent of land area of Asia. 800 kilometers in length and 160 kilometers in breadth Nepal is 22 times smaller than India and 75 times smaller than China.

The spatial location of Nepal lies between the longitudes 80°4' to 88°12' East and latitudes 26° 22' to 30° 27' North. It is rectangular in shape and stretches 885 Kilometers in lengths (east to west) and 193 Kilometers in with (north to south).Nepal is a mountainous country and its spatial extension mainly along the south slope of the Himalayas. The physical terrain of Nepal is full of amazing altitudinal variations from the lowland plains to perpetual snowy ranges above 8000 meters.

The landscape pattern is highly diversified where the altitude of the land varies from 60 metres at the southern border of Jhapa District at Kechana to 8848 meters above sea level at the top of Mt. Everest the highest peak in the world. For small country, Nepal has tremendous geographic diversity. It rises from as low as 59 meters elevation in terai to earth's highest 8848 meters Mount Everest.

On the basis of Its altitude and topographic features from south to north, Nepal can be divided into three distinct major geographical regions: Mountain, Hill and Terai (Plain). In general, the altitude of land features increased from the south towards the north.

The terai of Nepal is a low land which is fertile alluvial plain. It extends from east to west along the southern part of the country. This region includes the terai, bhaber and inner terai which covers about 25 percent of the total land of the country. The terai runs from Mechi (Eastern part in Nepal) to Mahakali (Farwestern part of Nepal) in the southern part of the country. The regularity of the terai belt has been fragmented at two places, Dang and Chitwan because of the presence of the Chure (Siwalik) range at these places as the boundary between Nepal and India. Far-Western terai covers Kanchanpur and Kailali district which is located between the Mahakali river in west to the Karnali River in east.Kailali and Kanchanpur districts are historically significant as the area of district were returned to Nepal by the East-India Company in 1860 A.D.. Therefore, Far-Western Terai (area of Kailali and Kanchanpur districts) is called new land (Nayamuluk) (Sharma, 2012). According to LRMP-1986 following table shown that physiographical characteristics of different regions of Nepal

2.1 Location and Extent

The study area, i.e., Far-WesternTerai is located in the southern part of the Far-Western Development Region of Nepal. This development region constitutes two zones and nine districts. Among the nine districts, seven lie in hill and mountain region, and two (Kanchanpur and Kailali) in the Terai region in Far- Western Terai. Kanchanpur District is located in the western part, and Kailali district is located in the eastern part of the region.



Map 2.1.

This region extends from the Mahakali River in the west to the Karnali in the east. The Indo-Nepal boarder shares the southern boundary in Kanchanpur and Mohana river in Kailali district. The Siwalik range is the northern boundary of the study area.

Far-WesternTerai region is a low lying plain which lies in the southern side of this Far Western region. It is located between 28° 32' north to 29° 28' north latitudes and 80° 3' east to 81° 18' east longitudes. Far-WesternTerai's total area is 4835 sq.km. and occupies 24.74 percent of the total area of Far-Western Region.

The Far-WesternTerai region gently slopes towards the south where the altitude variation from 109 metre to 1950 meter above sea level. (The altitude of land varies from 109 metres at the southern border of Shreepur VDC (Kanchanpur District) to 1950 metres above sea level at the northern point (Garbhachuli, Kailali District).

The study area comprises of 2 districts, 3 Municipalities and 61 village development committees and seven constituencies in 2011 till.

| Features | Terai | Siwaliks | Middle Mountains | High Mountains | High Himalayas |
|-----------|--------------|-----------------------|----------------------------|-------------------|-------------------|
| Geology | Quaternary | Tertiary sandstone, | Phyllite, quartzite | Gneiss, quartzite | Gneiss, schist, |
| | alluvium | siltstone, shale and | limestone and islands of | and mica schists | limestone and |
| | | conglomerates | granites | | Tethys |
| | | | | | sediments |
| Elevation | 66-300 m | 200-1 500 m | 800-2 400 m. Relief 15 00 | 2 200-4 000 m. | 4 000 m |
| | | | m with isolated peaks to 2 | High relief 3 | above |
| | | | 700 m | 000 m form | |
| | | | | valley floor to | |
| | | | | ridges. | |
| Climate | Sub-tropical | Sub-tropical (but | Sub- tropical, warm | Warm to cool | Alpine to |
| | | warm temperate in | temperate, cool temperate | temperate, | arctic |
| | | higher hill spurs) | on high ridges | alpine | (Snow 6-12 |
| | | | | | months) |
| Moisture | Sub humid in | Sub humid in most of | Humid, per humid above | Sub humid to | Semi and |
| Regime | FW+MWDR; | the area, humid in N- | 2000 m | per humid | benid Himal |
| | humid in W+C | aspect of W+C+EDR | | | |
| | and EDR | and dun valleys | | | |
| Rainfall | High | High | Medium | Low | Low |

 Table 2.1: Characteristics of Physiographic Regions of Nepal

| Features | Terai | Siwaliks | Middle Mountains | High | High | |
|--|------------------|-------------------------|-----------------------------|------------------|---------------|--|
| | | | | Mountains | Himalayas | |
| Intensity | | | | | | |
| Vegetation | Sal +mixed | Sal + mixed hard | Pine forest+mixed | Fir, pine, birch | Open | |
| | hardwoods | woods + pine forest | hardwood and oak forest | and | meadows | |
| | | | | rhododendron | +tundra | |
| | | | | | vegetation | |
| Soils | Ustochrepts, | Ustochrepts, | Ustochrepts, haplustalfs, | Eutrochrepts, | Cryumbrepts, | |
| | haplustolls, | haplustolls, | rhodustalfs, haplumbrepts, | dystrochrepts, | cryorthents | |
| | haplaquepts, | Rhodustalfs, | ustorthents and | haplumbrepts, | and rock | |
| | haplustalfs, | ustothents, | ustifluvents | cryumbrepts, | | |
| | ustifluvents & | Dystrochrepts, | | cryorthents and | | |
| | ustorthents | Haplaquepts and | | ustorthents | | |
| | | Ustifluvents | | | | |
| Crops | Rice, maize, | Rice, maize, wheat, | Rice, maize, wheat, millet, | Oat, barley, | Grazing (June | |
| | wheat, mustard | millet, radish, potato, | barley, pulses, sugar cane, | wheat, potato, | to Sep) | |
| | Sugar cane Jute, | ginger, tea. | ginger, cardamom | buckwheat, | | |
| | Tobacco, Cotton | | | yams, | | |
| | and Tea | | | amaranthus, | | |
| | | | | medicinal herbs | | |
| Horticulture | Mango, litchi, | Mango, papaya, | Mango,papaya,banana, | Chestnut, | Apple, | |
| | pineapple, | banana, potato | orange,lime,lemon, peach, | walnut, apple, | walnut, | |
| | jackfruit, imli, | | plum, potato,cauliflower | peach, plum, | vegetable | |
| | potato, tomato | | | apricot, potato | seed, potato | |
| People | Tharus, | Tharus(dun valley) | Gurung, Magar, Tamang, | Khas Chetri, | Temporary | |
| | Brahmins, | presently all hill | Newar, Brahmin, Chetri, | Tibetan related | herders | |
| | Chetris, | tribes | Damai, Sarki, Sunar, | groups - | Sherpa and | |
| | | displaced/immigrated | Kumal, Rais, Limbu. | Thakali, | Bhotiya | |
| | | from middle | | Bhotiya, Sherpa, | | |
| | | mountains | | Tamangs, Ghale | | |
| Transport | Good road | Good road linkage | Road linkages around | Very few road | No road | |
| | linkage | within dun valleys | major centres | linkages | linkages | |
| Source: Land Resource Mapping Project (LRMP), Land Utilization Report (1986) | | | | | | |

2.2. Physical Setting

2.2.1. Topography:

Terai is a plain area of Nepal which lies in south at the foot hills of Himalayan range. Present topography of Terai is the result of continuous deposition action of river. So the Terai is a low lying fertile alluvial plain.



Map 2.2

The Far-WesternTerai can be divided into following major physiographic units as described below:



2.2.1.1. Churia (Siwalik) :

Churia extends in the northern border from the Mahakali River to the Karnali River with parallel to the Mahabharat Range. It separates Far-Western Himalayan Region from the Gangetic plain, which lies between the plains and high Himalayan ranges. Churia range is also known as Shiwalik in India. Shiwalik were known to the ancient geographers as Mainak Giri or Mainak Parvat. Churia range is recent in origin as is evident from its highly unconsolidated colluviums materials, and on account of which they easily lend themselves to erosion. The churia have remarkably even crest between 750m and 1200 m. and are thickly wooded on the northern slopes. On the southern slopes they have steep scarps while on the north they descend gently to flat floored structural valleys.

The Churia range rises abruptly from the Terai plain, with an average height varying from 700 meter 1500 meters in Nepal. But the highest elevation of the Far-Western Churia is above 2000 meters which is at the border between Doti and Kailali districts.

The Churia range is composed of sand, conglomerate, quartzite and sandstoneIt is partly rich in mica and calcareous day. The soil cover of Churia is coarse and porous. So except in rainy season, almost all the year round dry conditions prevail. Recently, there is under the attack of serious environmental problems. The deforestation and encroachment on the Churia areas has accelerated, so there is an urgent need to protect the Churia in order to save the Terai from flood hazards.

2.2.1.2. Bhaber Area:

The Bhaber is the adjoining area of Terai which starts right from the foot of the Siwalik Hills and merges into Terai in the south. Bhaber is a plain, which is elevated a bit and is situated at the foot of the Churia range. This area also extends from east to west along the southern side of Churia. It is made of coarser materials like conglomerates, boulders, gravel, pebbles, sand and stones

forming a zone of hill wash and alluvial fans. The Bhaber area lies between 228 meters to 305 meters elevation. This area was once covered by a dense forest as **'charkosa jhadi'** which has been deforested to a large extent due to population pressure and encroachment for agricultural land after the malaria control. Bhaber area is not suitable for agriculture and settlement purpose. This area is the source of fuel woods, housing materials and fodder for animals.

Most of streams (rivers) are often underground due to the loose materials because sand, gravel and pebbles are dominant. Only in the rainy season, thestreams appear in the surface in this area.

2.2.1.3. Main Terai :

The main Terai is the southern low land part of the study area, which is a part of the Gangetic plain. Main Terai lies between the Nepal-India boarder to the south and the Bhaber to the north. The terai is underlain by a thick sequence of saturated detrital sediments of alluvial and colluvial orign which makes this area one of the most productive aquifers in the subcontinent (Yogacharya and Shrestha 1998). Terai contains alluvial soil with rich deposition of loan, sandy loan, silt, but there are no boulders and gravels.

2.2.2 Drainage:

Nepal is rich in the river network system. Drainage system of Nepal is also very complex as its topographic features. The drainage pattern of Nepal concerns with the drainage system of the Ganga River. Geologically the rivers of Nepal Himalayas are older than the Himalayas. The streams of Nepal have either east-west or west-east course in their transverse valley in the greater Himalayas and in the Mahabharat range with only four outlets towards the gangetic plain (Mall, 1978).



Map 2.3

Broadly speaking Nepal has three different river systems the Karnali, the Gandaki and the Koshi. The Karnali River System is in the Far-WesternRegion of Nepal. The Karnali River is originated from Byas Rishi and Dhaulagiri Mountain. It is the most extensive river. The main tributaries of the Karnali system Humla Karnali, Mugu Karnali, Tila Madi, Seti, Budhi Ganga, Thuli Bheri and Sani Bheri rivers. The Karnali River is also known as Ghagra in India which mixes in the Ganges. Mahakali River is the prominent rivers in Far-Western region of Nepal. It originated from Api and Spaipal Mountains. It's main tributaries are Chemelia and Surna Gad on Nepal side. The Mahakali is the bordering river of Indo-Nepal in the western part of Nepal. In India Mahakali river is known as the Sarada in plain area and Kali in the hill area. It is also the tributary river of Karnali. Mahakali River meets the Karnali River in India.

So, Karnali and Mahakali rivers origin from theHimalayas the main river in the Far-Western Region.In this region,the KarnaliRiver flows from north to south in eastern partand Mahakali river flows from north to south in western part of Far-WesternTerai.

Table 2.2: Main Rivers in the Far-Western Terai

| S.No. | Name of Rivers | Originated from | District |
|-------|----------------|-----------------|----------|
|-------|----------------|-----------------|----------|

| S.No. | Name of Rivers | Originated from | District |
|-------|----------------|------------------|------------|
| 1 | Mahakali | Himalaya | Kanchanpur |
| 2 | Karnali | Himalaya | Kailali |
| 3 | Mohana | Mahabharat Range | " |
| 4 | Kutiya | Churia Range | " |
| 5 | Pathariya | " | " |
| 6 | Kanara | " | " |
| 7 | Gulara | " | " |
| 8 | Sajgadh | Churia Range | Kanchanpur |
| 9 | Machhali | Mahabharat Range | " |
| 10 | Chaudhara | Churia Range | " |
| | | | |

Source: DDC, Kanchanpur and Kailali 2011.

The Far-WesternTerai is drained by a number of rivers. Except the Mahakali and Karnali River, Far-WesternTerai is drained by the several small and seasonal rivers, most of the rivers originate from the Churia range and Mahabharat range.The Mahakali and The Karnali River are prominent rivers which are originated from the great Himalayan range of northern part of Nepal. These rivers are the perennial source of water by hydroelectricity and irrigation facilities are conducted. The Chaudhara River and the Machali River, that flows in the Kanchanpur District. Originate from the Churia ranges. The tributaries of the Chaudhara and the Machali River are originated from the Bhabar area. The numbers of other temporary streams are originated from Bhabar area and they depend on rainy seasons.

Far-Western Terai is well drained by a number of small and seasonal rivers and streams. There are number of rivers in Far-WesternTerai see in table above.

All of them flow from north to south. Except the Mahaki and the Karnali River, all other rivers have been originated from the Chure and the Mahabharat range and those are mostly seasonal. So the Mahabharat and the Churia range are the area of origin most of the seasonal and small rivers in the Far-Western Terai. However the water levels of all rivers depend on the monsoon rain. The common characteristics of the rivers are that they often get flooded and deposit enormous amount of sands and the fine particles around their banks. In the dry season their water level in unusually low. Most of the rivers have contributed in agricultural production in the southern part of the Far-Western Terai.

Lots of lakes and ponds are structured in different parts of Far-WesternTerai. The water of lakes and ponds are highly useful for irrigation. These water resources are also important for the development of tourism. Some of the Lakes are most famous for the internal tourism as well as biodiversity. The following table represents much detail about lakes and ponds in this area.

| 1JhilmilaChuraiBhimdatt NPKanchanpur2BetkotChuraiDaijee VDC"3BandatalChuraiSuda VDC"4RanitalTeraiSukla phata"5GhodaghodiTeraiSukhad VDCKailali6Ghor talChuriaKhailad VDC"7Laukaha maukaha talChuriaKhailad VDC"8Soniya talChuriaKhailad VDC"9Kamalpokhari talTeraiHasuliya VDC"10Jhala tal"Rattanpur VDC"12Kharahawa tal"Rattanpur VDC"13Jokhar tal"Udasipur VDC"14Puraina tal"Udasipur VDC"15Thubad tal"Urma VDC"16Chamaraieya"""17Behadababa"Urma VDC"18Kaieleya"Gadariya VDC"20JhilmilaBhaberBhimdatt npKanchanpur21KalikichaTeraiShreepur VDC" | S.No. | Name of Lakes & Ponds | Region | VDC/Municipality | District |
|--|-------|-----------------------|--------|------------------|------------|
| 2BetkotChuraiDaijee VDC"3BandatalChuraiSuda VDC"4RanitalTeraiSukla phata"5GhodaghodiTeraiSukhad VDCKailali6Ghor talChuriaKhailad VDC"7Laukaha maukaha talChuriaKhailad VDC"8Soniya talChuriaKhailad VDC"9Kamalpokhari talTeraiHasuliya VDC"10Jhala tal"Rattanpur VDC"12Kharahawa tal"Rattanpur VDC"13Jokhar tal"Udasipur VDC"14Puraina tal"Udasipur VDC"15Thubad tal"Urma VDC"16Chamaraieya"""17Behadababa"Urma VDC"19Jaginiya"""20JhilmilaBhaberBhimdatt npKanchanpur21KalikichaTeraiShreepur VDC" | 1 | Jhilmila | Churai | Bhimdatt NP | Kanchanpur |
| 3BandatalChuraiSuda VDC"4RanitalTeraiSukla phata"5GhodaghodiTeraiSukhad VDCKailali6Ghor talChuriaKhailad VDC"7Laukaha maukaha talChuriaKhailad VDC"8Soniya talChuriaKhailad VDC"9Kamalpokhari talTeraiHasuliya VDC"10Jhala tal"Hasuliya VDC"12Kharahawa tal"Rattanpur VDC"13Jokhar tal"Dhangadi NP"14Puraina tal"Udasipur VDC"15Thubad tal"Utma VDC"16Chamaraieya"""19Jaginiya"""20JhilmilaBhaberBhimdatt npKanchanpur21KalikichaTeraiShreepur VDC" | 2 | Betkot | Churai | Daijee VDC | " |
| 4RanitalTeraiSukla phata"5GhodaghodiTeraiSukhad VDCKailali6Ghor talChuriaKhailad VDC"7Laukaha maukaha talChuriaKhailad VDC"8Soniya talChuriaKhailad VDC"9Kamalpokhari talTeraiHasuliya VDC"10Jhala tal"Hasuliya VDC"12Kharahawa tal"Rattanpur VDC"13Jokhar tal"Dhangadi NP"14Puraina tal"Udasipur VDC"15Thubad tal"Urma VDC"16Chamaraieya"""17Behadababa"Urma VDC"19Jaginiya"""20JhilmilaBhaberBhimdatt npKanchanpur21KalikichaTeraiShreepur VDC" | 3 | Bandatal | Churai | Suda VDC | " |
| 5GhodaghodiTeraiSukhad VDCKailali6Ghor talChuriaKhailad VDC"7Laukaha maukaha talChuriaKhailad VDC"8Soniya talChuriaKhailad VDC"9Kamalpokhari talTeraiHasuliya VDC"10Jhala tal"Hasuliya VDC"12Kharahawa tal"Rattanpur VDC"13Jokhar tal"Dhangadi NP"14Puraina tal"Udasipur VDC"15Thubad tal"Urma VDC"16Chamaraieya"""17Behadababa"Urma VDC"18Kaieleya"Gadariya VDC"20JhilmilaBhaberBhimdatt npKanchanpur21KalikichaTeraiShreepur VDC" | 4 | Ranital | Terai | Sukla phata | " |
| 6Ghor talChuriaKhailad VDC"7Laukaha maukaha talChuriaKhailad VDC"8Soniya talChuriaKhailad VDC"9Kamalpokhari talTeraiHasuliya VDC"10Jhala tal"Hasuliya VDC"12Kharahawa tal"Rattanpur VDC"13Jokhar tal"Dhangadi NP"14Puraina tal"Udasipur VDC"15Thubad tal"Udasipur VDC"16Chamaraieya"""17Behadababa"Urma VDC"19Jaginiya"""20JhilmilaBhaberBhimdatt npKanchanpur21KalikichaTeraiShreepur VDC" | 5 | Ghodaghodi | Terai | Sukhad VDC | Kailali |
| 7Laukaha maukaha talChuriaKhailad VDC"8Soniya talChuriaKhailad VDC"9Kamalpokhari talTeraiHasuliya VDC"10Jhala tal"Hasuliya VDC"12Kharahawa tal"Rattanpur VDC"13Jokhar tal"Dhangadi NP"14Puraina tal"Lalboji VDC"15Thubad tal"Udasipur VDC"16Chamaraieya"""17Behadababa"Urma VDC"18Kaieleya"Gadariya VDC"20JhilmilaBhaberBhimdatt npKanchanpur21KalikichaTeraiBeldadi VDC" | 6 | Ghor tal | Churia | Khailad VDC | " |
| 8Soniya talChuriaKhailad VDC"9Kamalpokhari talTeraiHasuliya VDC"10Jhala tal"Hasuliya VDC"12Kharahawa tal"Rattanpur VDC"13Jokhar tal"Dhangadi NP"14Puraina tal"Lalboji VDC"15Thubad tal"Udasipur VDC"16Chamaraieya"""17Behadababa"Urma VDC"18Kaieleya"Gadariya VDC"20JhilmilaBhaberBhimdatt npKanchanpur21KalikichaTeraiBeldadi VDC" | 7 | Laukaha maukaha tal | Churia | Khailad VDC | " |
| 9Kamalpokhari talTeraiHasuliya VDC"10Jhala tal"Hasuliya VDC"12Kharahawa tal"Rattanpur VDC"13Jokhar tal"Dhangadi NP"14Puraina tal"Lalboji VDC"15Thubad tal"Udasipur VDC"16Chamaraieya"""17Behadababa"Urma VDC"18Kaieleya"Gadariya VDC"19Jaginiya"""20JhilmilaBhaberBhimdatt npKanchanpur21KalikichaTeraiShreepur VDC" | 8 | Soniya tal | Churia | Khailad VDC | " |
| 10Jhala tal"Hasuliya VDC"12Kharahawa tal"Rattanpur VDC"13Jokhar tal"Dhangadi NP"14Puraina tal"Lalboji VDC"15Thubad tal"Udasipur VDC"16Chamaraieya"""17Behadababa"Urma VDC"18Kaieleya"Gadariya VDC"20JhilmilaBhaberBhimdatt npKanchanpur21KalikichaTeraiShreepur VDC" | 9 | Kamalpokhari tal | Terai | Hasuliya VDC | " |
| 12Kharahawa tal"Rattanpur VDC13Jokhar tal"Dhangadi NP"14Puraina tal"Lalboji VDC"15Thubad tal"Udasipur VDC"16Chamaraieya"""17Behadababa"Urma VDC"18Kaieleya"Gadariya VDC"19Jaginiya"""20JhilmilaBhaberBhimdatt npKanchanpur21KalikichaTeraiShreepur VDC" | 10 | Jhala tal | " | Hasuliya VDC | " |
| 13Jokhar tal"Dhangadi NP"14Puraina tal"Lalboji VDC"15Thubad tal"Udasipur VDC"16Chamaraieya"""17Behadababa"Urma VDC"18Kaieleya"Gadariya VDC"19Jaginiya"""20JhilmilaBhaberBhimdatt npKanchanpur21KalikichaTeraiBeldadi VDC"22TamatalTeraiShreepur VDC" | 12 | Kharahawa tal | " | Rattanpur VDC | |
| 14Puraina tal"Lalboji VDC"15Thubad tal"Udasipur VDC"16Chamaraieya"""17Behadababa"Urma VDC"18Kaieleya"Gadariya VDC"19Jaginiya"""20JhilmilaBhaberBhimdatt npKanchanpur21KalikichaTeraiBeldadi VDC"22TamatalTeraiShreepur VDC" | 13 | Jokhar tal | " | Dhangadi NP | " |
| 15Thubad tal"Udasipur VDC"16Chamaraieya"""17Behadababa"Urma VDC"18Kaieleya"Gadariya VDC"19Jaginiya"""20JhilmilaBhaberBhimdatt npKanchanpur21KalikichaTeraiBeldadi VDC"22TamatalTeraiShreepur VDC" | 14 | Puraina tal | " | Lalboji VDC | " |
| 16Chamaraieya"""17Behadababa"Urma VDC"18Kaieleya"Gadariya VDC"19Jaginiya"""20JhilmilaBhaberBhimdatt npKanchanpur21KalikichaTeraiBeldadi VDC"22TamatalTeraiShreepur VDC" | 15 | Thubad tal | " | Udasipur VDC | " |
| 17Behadababa"Urma VDC"18Kaieleya"Gadariya VDC"19Jaginiya"""20JhilmilaBhaberBhimdatt npKanchanpur21KalikichaTeraiBeldadi VDC"22TamatalTeraiShreepur VDC" | 16 | Chamaraieya | " | " | " |
| 18Kaieleya"Gadariya VDC"19Jaginiya"""20JhilmilaBhaberBhimdatt npKanchanpur21KalikichaTeraiBeldadi VDC"22TamatalTeraiShreepur VDC" | 17 | Behadababa | " | Urma VDC | " |
| 19Jaginiya""20JhilmilaBhaberBhimdatt npKanchanpur21KalikichaTeraiBeldadi VDC"22TamatalTeraiShreepur VDC" | 18 | Kaieleya | " | Gadariya VDC | " |
| 20JhilmilaBhaberBhimdatt npKanchanpur21KalikichaTeraiBeldadi VDC"22TamatalTeraiShreepur VDC" | 19 | Jaginiya | " | " | " |
| 21KalikichaTeraiBeldadi VDC"22TamatalTeraiShreepur VDC" | 20 | Jhilmila | Bhaber | Bhimdatt np | Kanchanpur |
| 22TamatalTeraiShreepur VDC" | 21 | Kalikicha | Terai | Beldadi VDC | " |
| | 22 | Tamatal | Terai | Shreepur VDC | " |

Table 2.3: Lakes and Pounds in FWT

Source: District Profile of Kanchanpur and Kailali 2011

2.2.3. Soil

Soil is the important factor for agriculture. It is not possible for people and animals to live on earth without soil. The land in Terai is very fertile of is good for agriculture. So the productivity of Terai is very high. The Terai region is the store house of food grains.

Agricultural activity is the most dominant economic activity in Far-Western Terai where the soil in most areas is fertile. So, the soil of terai plays a significant role in population growth and it has been the pull element for the people from different parts of the country. The nature of the soil is often similar throughout the Far-WesternTerai but some differences can be observed in Churia Hills and Bhabar area.In North side, there are the "Chure Hills" under which Bhabar region lies and in Southern part it is totally plain land. Different kinds of soil are found due to such geo structure.

- Northern Chure Region Such land is basically formed in recent geological history so it is fragile and erosive. The rocks found in this region are stone, sandy rock, coarse sand, silt and sand stone among others.
- Middle Bhabar Region: It is located in the southern foot of Chure Hill. In this region gravel, sandy loamy, rough, skeletal, boulder, cobbles and pebbles are main texture of soil.
- Southern Terai Region: Fine sandy loamy soil is found.

2.2.4. Climate

Though Nepal lies within the region of the monsoon, yet one can hardly speak of a Nepalese climate contrasts are too great in consequence of marked verified divisions of the country. As elevation increases from south to north temperature varies inversely with it. Thus, in Nepal tropical temperature and climate Tundra climate occurs within a short distance of each other. Far-WesternTerai lies in the subtropical climatic zones. Kailali and Kanchanpur experience the very hot in summer season and severely cold in winter season. The seasons at the Far-Western terai can be divided into four theyare :

| Hot season (summer monsoon season)(April– June) |
|--|
| Rainy season (July - September) |
| Dry season (October - December) |
| Cold season (Jan - March) |

Each climatic season has its own influence on temperature, rainfall and humidity. From April to September, It comes under high temperature and low rainfall. This period is very hot and wet with ample amount of rainfall. The climate of Far-Western terai is very hot during the April to June. In this season sometimes comes under the effect of hot wind 'Loo' in the various part of this area.

The south-westerly moisture laden air from Bay of Bengal is the main source for the summer monsoon rainfall. Summer monsoon comes first in the eastern Nepal with the normal date of on set as 10th June and gradually advances west ward and reaches Far-Western terai within 30 days. About the 80 percent rainfall occurs in the Far-Western terai during the July to September. The rainfall actively is substantially reduced in September with clear sky and fine climate. The mean annual rainfall is around 163.9mm at Attraiya which is aerial mean centre of Far-WesternTerai. The maximum temperature month is May and the minimum temperature month is January. Also the highest average rainfall month is July and the lowest rainfall month is November. So November is the drymonth, January is the coldest month; July is the heavy rainfall month and May is the hot month in the Far-WesternTerai. The period of October to December acts like a

transitional period from summer to winter. November is the driest month with respect to precipitation. Table 2.4 and figure 2.1 shows much detail about temperature and rainfall of the study area.

| Months | Maximum temperature (average) in °c | Minimum temperature (average) in °c | Rainfall (average) in mm |
|----------|---|---|-----------------------------|
| January | 18.4 | 6.9 | 27.39 |
| February | 25.2 | 9.7 | 39.63 |
| March | 31.4 | 13.5 | 16.7 |
| April | 36.1 | 17 | 20.01 |
| May | 36.3 | 22.9 | 89.3 |

Table 2.4: Mean Monthly Temperature and Rainfall in FWT (at Attariya)

(2011)

| June | 34.8 | 24.3 | 226.64 |
|-----------|------|------|--------|
| July | 33 | 25.4 | 591.6 |
| August | 33 | 25.3 | 556.1 |
| September | 33.4 | 24.5 | 330 |
| October | 33.3 | 19.2 | 63.17 |
| November | 27.4 | 14.1 | 2.44 |
| December | 21.4 | 9.0 | 3.98 |

Source: Climatological Records of Nepal, Department of Hydrology and Meteorology, 2012.



Mean Monthly Temperature & Rainfall, 2012

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Months

0

| 1 1 <u>5</u> urv 2.1 |
|----------------------|
|----------------------|

| Table 2.5: | Season-wise | Average Ter | nperature and | Rainfall,2012 |
|-------------------|-------------|-------------|---------------|---------------|
| | | 0 | | , |

| Season | Months | Average Temperature(°c) | Average Rainfall(mm) |
|--------|---------------|-------------------------|----------------------|
| Cold | Jan. to Mar. | 17.24 | 14 |
| Hot | Apr. to June | 29.56 | 21 |
| Rainy | July to Sept. | 29.1 | 257.06 |
| Dry | Oct. to Dec. | 20.64 | 2.26 |



Season-wise Temperature & Rainfall, 2011

Figure 2.2

2.2.5: Forest / Natural Vegetation

The natural vegetation consists of all kinds of plants like trees, bushes, grasses which grow naturally. The character and nature of natural vegetation depend upon altitude landscape pattern and climate of place (Shrestha, 2007). The Far-Western Terai of Nepal is also the extended part of Indo Gangetic plain, has hot and wet summer. So in this place mostly the hard wood evergreen forests are available in which the main species are Sal (Shorea robusta), Sissou

(Delbergion spp) Khayar (Catech), Asna, Satisal, Simal, Faledo, Hurro, Barro and other tropical species. The lower hill range called Siwalik (Churia) there are some variation in plant species. The mixed type of vegetation is found in this area (both evergreen and deciduous forest). The tropical vegetation is found mainly in plain terai Bhabar and mixed types of vegetation are found in Siwalik Range.

After 1950, the dense forests in the Far-Western Terai have been depleted in the last four decades mainly after the eradication of malaria. Also due to fast increasing population and the continuous flow of internal migration of population from Hills and mountain to the terai the forest lands were cleared for the settlement and agriculture purpose.

Despite its small size, Nepal is rich in biodiversity. From the perspective of species diversity in wild habitat, Nepal occupies 26th position and 11th position on the global and continental basis respectively. Nepal possesses over 2.7% of the world's flowering plants 5 percent of bryophytes, 3% of ptendophytes, 9.3% of the world's bird species and 4.5% of the world's mammal species. About 19.7% (28999 km2) of the total area of the country is under protected area system to conserve the representation biodiversity and outstanding landscape of the country.

Nepal is dominated by rural society. Forest is the principle source of rural energy and it is the integral part of the agricultural and rural livelihood fuel wood.

The slogan 'Hariyo Ban Nepal Ko Dhan" (Green forest, the wealth of Nepal) used be very popular in Nepal some years before. However coming till today, It is worthless to say that 39.6% of the total area of Nepal.

As, Nepal has different types of climate and topography a variety of flora and fauna plants, medicinal herbs etc. are found in the forest of Nepal. The materials need for the general livelihood such as timber fine wood medical herbs, animals fodder etc. are available in forests.

Sub tropical evergreen forest is found in Terai, Bhaber and Churi areas within 1200 meter from the sea level. This forest remains green throughout year and hence called evergreen forest.

The plants like sal, sisau, khayar, bijayasal, satisal, jamun, seemal, bamboo etc are found in this type of forest. The trees that grow in the sub tropical evergreen forests have broad bunchy tops. The timber of the trees mostly found here are very hard. This hard timber is regarded useful to make different articles including furniture, windows, doors etc. Therefore this type of forest is very important economically.

2.3. Socio-Cultural Setting

2.3.1. Population

Population refers to the number of inhabitants living in a defined area or a territory at a particular time.Undoubtedly, human resource is the pivotal element of economic development of a country and the region. It is directly related to the human settlements. A population analysis brings to light certain relationships between man and his environment. The diversity in terms of physical, economic, climatic has resulted differentiation in population concentration and pattern in the country. This has resulted uneven pattern of population distribution with respect to different geographical regions of Nepal. The history of human settlements indicates a predominance of settlement in places where climate, agricultural activities and water were favourable for their livelihood. These factors which depend upon the topography of the land are still valid for the present day spatial distribution of population.

Initially, Terai area was covered with dense forest and highly infested with malaria and other transmissible diseases. Later the diseases were controlled and the deforestation increased day by day for human settlement and the pattern of population distribution by ecological zone is changing.(CBS, 1995). After that, Terai is the main centre of population agglomeration because people are attracted to carry on economic activities like industry, education, trade, agriculture and administrative aspect. The growing of the population and construction of residential area, the urban growth is gradually increasing in the Terai region (see table 2.6).

| Census | Total Population | Annual Population Growth Rates in % | Population Doubling time in Years | Population Density persons/sq.km. |
|---------|---------------------|--|---|---|
| 1952/54 | 235189 | - | - | 49 |
| 1961 | 271551 | 1.43 | 48 year | 56 |

Table 2.6: Population Size, Growth Rates, Doubling time and Population Density inDifferent Census

| 1981 | 426876 | 2.26 | 31 year | 88 |
|------|---------|------|----------|-----|
| 1991 | 675797 | 4.59 | 15 years | 139 |
| 2001 | 994596 | 3.86 | 18 years | 205 |
| 2011 | 1226957 | 2.1 | 33 years | 253 |

Source: CBS, 1952/54-2011.



Population Size (1951-2011)

Figure 2.3

The table and figures above indicate the total population, inter-censual annual growth rate of population and population doubling time as recorded in different census from 1952/54 to 2011 of the Far-WesternTerai Region. Population size of this region has been increasing rapidly over the time. It was only 235189 in 1952/54 that become 271551 in 1961. The population size is continuously increasing over the time and it reached to 994596 and 1226957 in the census of 2001 and 2011 respectively. Not only the size of population, but also the population density has also drastically increased. The population density was 88 persons per sq.km. in 1981 that became 139 in 1991, 205 in 2001 and 253 in 2011. But the annual growth rate and doubling time of

population are decreasing over the time. According to the Census data of 2011, the male population was 594459, the female population was 632498, the sex ratio was 93.99 and average household size was 5.46 persons per family.

On the basis of age group of population composition in the study area, 25.01percent population lies under 15 years of age group. Over the 60 years population is 6.74 percent. About 68.25 percent population is under 15-60 year age groups. The population variation of males and female is not so high (see table 2.7).

| Age | Total Population | | Male Population | | Female Population | |
|----------------|-------------------------|-------|-----------------|-------|-------------------|-------|
| Groups(Years.) | Number | % | Number | % | Number | % |
| 0-4 | 118243 | 9.64 | 60926 | 10.25 | 57317 | 9.06 |
| 5-9 | 151684 | 12.36 | 78402 | 13.19 | 73282 | 11.59 |
| 10-14 | 173414 | 14.13 | 88888 | 14.95 | 84526 | 13.36 |
| 15-19 | 147879 | 12.05 | 70739 | 11.9 | 77140 | 12.20 |
| 20-24 | 118234 | 9.64 | 51624 | 8.68 | 66610 | 10.53 |
| 25-29 | 101780 | 8.3 | 46631 | 7.84 | 55149 | 8.72 |
| 30-34 | 79985 | 6.52 | 35924 | 6.04 | 44061 | 6.97 |
| 35-39 | 73040 | 5.95 | 33925 | 5.71 | 39115 | 6.18 |
| 40-44 | 59361 | 4.84 | 27900 | 4.69 | 31461 | 4.97 |
| 45-49 | 48309 | 3.94 | 23799 | 4.00 | 24510 | 3.88 |
| 50-54 | 37556 | 3.06 | 18526 | 3.12 | 19030 | 3.01 |
| 55-59 | 31563 | 2.57 | 15598 | 2.62 | 15965 | 2.52 |
| 60-64 | 32521 | 2.65 | 15061 | 2.53 | 17460 | 2.76 |
| 65-69 | 22037 | 1.8 | 11061 | 1.86 | 10976 | 1.47 |
| 70-74 | 15784 | 1.29 | 7831 | 1.32 | 7953 | 1.26 |
| 75-79 | 7919 | .65 | 4006 | .67 | 3913 | .62 |
| 80-84 | 4889 | .4 | 2354 | .40 | 2535 | .40 |
| 85-89 | 1579 | .13 | 813 | .14 | 784 | .12 |
| 90-94 | 693 | 0.06 | 287 | .05 | 406 | .06 |
| 95+ | 469 | 0.04 | 164 | .03 | 305 | .05 |
| All Ages | 1226957 | 100 | 594459 | 100 | 632498 | 100 |

Table2.7: Population Composition by Age and Sex in Far-WesternTerai, 2011

Source: National Population and Housing Census 2011(National Report) Population Pyramid of Far-Western Terai



Per cent of Population

Figure 2.4

The table and figure above show that 10-14 age group of population dominates the all age groups and also both in male population and female population.

The spatial pattern of population distribution in Far-Western Terai differs from place to place. The urban area has the highest concentration of population and the rural area has low population in the study area.

| S.No. | Population Size | Number of VDC | Number of Municipality |
|-------|------------------------|---------------|------------------------|
| 1 | Below 10000 | 13 | - |
| 2 | 10001-15000 | 18 | - |
| 3 | 1500120000 | 18 | - |
| 4 | 20001-40000 | 8 | - |
| 5 | 40001- 50000 | 5 | - |
| 6 | 50001-1-00000 | - | 1 |
| 7 | above 100000 | - | 2 |
| | Total | 62 | 3 |

 Table 2.8: Population Distribution of VDCs and Municipalities in Far-Western Terai, 2011

Source: CBS, 2011

2.3.2. Religion

Far-Western Terai is the land of cultural and ethnic diversity. The migrants in this area represent almost all districts of Nepal. So, this area is place of multi-cultural and ethnicity of Nepal. By religion the Hindu are dominant group sharing 99.39 percent of the total population of the study area. The population is following other religions very low that is 0.39 percent Buddhism, 0.04 percent Islam, and 0.13 percent Christian shown in table 2.9.

Table 2.9: Population Composition of Far-Western Terai by Religion, 2011

| Religion | Population | Per cent |
|-----------|------------|----------|
| Hindu | 856942 | 99.38 |
| Buddhism | 3430 | 0.39 |
| Islam | 431 | 0.04 |
| Christian | 1144 | 0.13 |
| other | 268 | 0.03 |
| Total | 862215 | 100 |

Source: CBS, 2011.





2.3.3. Language

In Nepal, there are more than 100 ethnic/caste groups with distinct language and cultures.

| Language | Population | Per cent |
|------------|------------|----------|
| Nepali | 288548 | 23.51 |
| Doteli | 324019 | 26.40 |
| Tharu | 433610 | 35.34 |
| Achhami | 58700 | 4.78 |
| Baitadeli | 26263 | 2.14 |
| Bajhangi | 21204 | 1.72 |
| Bajureli | 10488 | 0.85 |
| Darchuleli | 5322 | 0.433 |
| Magar | 18368 | 1.49 |
| Maithili | 8005 | 0.65 |
| Hindi | 7830 | 0.63 |
| Tamang | 7513 | 0.61 |
| Others | 17087 | 1.39 |
| Total | 1226957 | 100 |

 Table 2.10: Population Composition of Far-WesternTerai by Language, 2011

According to table 2.10 the Tharu speakers (35.34%) population are greater than other languages.



Population Composition by Language

Figure 2.6

2.3.4. Ethnicity/ Caste

Nepal is the homeland of people of different ethnicity and castes. Similarly, as stated earlier that Far-Western Terai has possessed the culture of unity in diversity. It is heterogeneous society

combining people of almost all castes and ethnic groups of Nepal. The major ethnic groups are the Tharu, the Chhetre, the Bharman, the Dalit, the Thakuri and others in this area.

| Ethnic Groups | Population | Per cent |
|---------------|------------|----------|
| Chhetri | 294416 | 23.99 |
| Bharman | 168294 | 13.71 |
| Tharu | 437996 | 35.69 |
| Thakuri | 56065 | 4.56 |
| Dalit | 52088 | 4.24 |
| Magar | 41812 | 3.40 |
| Dasnami | 10891 | 0.88 |
| Others | 165395 | 13.48 |
| Total | 1226957 | 100 |

 Table 2.11: Ethnic Composition of Far-Western Terai, 2011

Source: CBS, 2011.

Population Composition by Caste



Figure 2.7

Table 2.11 indicates that out of the 1226957 population of Far-Western Terai, the Tharu ethnic group has highest population than other ethnic groups. There are 35.69 percent Thraru, 23.99 percent Chhetri, 13.71 percent Brahman, 4.56 percent Thakuri, 4.24 percent Dalit. 3.40 percent Magar 0.88 percent Dasnami and 13.48 percent other ethnic groups.

The Tharu ethnic groups are indigenous people of the Far-Western Terai. There are two types of Tharu ethnic, one is the Dangaura, who came from Dang valley of Nepal and other ethnic group of tharu is Rana, who came from the Thar Desert of India. Now days except the indigenous people of the Tharu, there are the Brahmans, the Chhetri, the Dalit and other ethnic people from all over the country who have migrated to this region, mostly from the district such as Doti, Achham, Baitadi, Dadeldhura, Darchula, Bajhang and Bajura. Dhangadi, Tikapur, Bhimdattnagar and other emerging urban areas are the unique combination of all ethnic people representing the overall society of Nepal.

2.3.5. Main Festivals

People of this region celebrate more than two dozen of festivals. Main festivals are Dashain, Tihar, Maghi, Gaura, Holi, Teej, Aitbari, Shreepanchami, Shree Krishna Janma Astami (God Krishna's Birthday), Shivaratri (God Shiva's Birthday), Devijat, Jesta Purnima (Full Moon of Raji Caste), Charai (Festival of Rana Tharu Caste), Dhuriya Pooja, Bhutuwa Pooja, Ran Putla (Brahmin Kshetri), Annantya, Bhuwa (Demonstrating Fighting Skills in War), Pouse 15, Olke, Ashare 15, Ganga Dashahara, Nag Panchami, Rakcha Bhandhan, Bishu, Tihar, Chaite Dashi Ram Nawami etc. The picture of festivals celebrated by different e thnic groups of Far-Western Terai are below:



Costumes and Festivals of different Ethnics in Far-Western Terai

Maghi Festival of Chaudhary Tharu (Photo Plate No. 2.1)



Dance of Rana Tharu (Photo Plate No. 2.2)



Dance of Dangara Tharu in Magi Festival (PhotoPlate No. 2.3)



Gaura Festival of Brahman & Chhetri (Photo Plate No. 2.4)



Gaura Festival of Brahman & Chhetri (Photo Plate No.2.5)



Panche Baja of FWDR (Photo Plate No.2.6)



Panche Baja of FWDR (Photo Plate No.2.7)



Deauda Dance of FWDR (Photo Plate No. 2.8)



Gaura Dance of Woman in FWDR (Photo Plate No. 2.9)



Holi Festival of Rana Tharu (Photo Plate No. 2.10)

2.3.6. Land Use

Land has a peculiar characteristic feature. Because of its immobile and heterogeneous character, its use differs from place to place. Land is the prime resource for livelihood in Nepal. Land is almost every thing wealth, social status and political power especially in rural areas of Nepal.

| S.No. | Land use categories | Area (hec.) | Per cent |
|-------|---------------------|-------------|----------|
| 1 | Forest land | 282628.58 | 57.66 |
| 2 | Shrub | 10490.60 | 2.14 |
| 3 | Agricultural land | 160234.63 | 32.69 |
| 4 | Water bodies | 4845.90 | 0.99 |
| 5 | Barren land | 434.46 | 0.09 |
| 6 | Built-up Area | 1.80 | 0.00 |
| 7 | Grass land | 11420.20 | 2.33 |
| 8 | Others | 20129.00 | 4.11 |
| | Total | 490185.17 | 100 |

Table 2.12: General Land Use Pattern of Far-WesternTerai, 1998

Source: Department of Forest Research and Survey 1998.

Land Use Pattern





Map No. 2.5

According to the table and figure above the major land use of the study area is divided into eight categories. The Far-WesternTerai covers 490285.17 hectors of land and out of this 57.66% area is used for forest land, 32.69% for agricultural land,2.33% for grass land, 2.14% for shrub, 0.09% for barren land and 4.11% for other use(rivers, pounds, roads, sand& settlement etc.) respectively. The total land of this region under the forest is highest being 282628.58 hectors. The positive aspect of the land use is the forest cover ranking first and followed by the cultivable land and other categories distinctly appeared in the land use pattern.

The urbanization of Fa-rwestern Terai started in late 1980, with rapid urban population growth. The terai region is one of the most fertile and agriculturally productive areas in Nepal. The rapid growth of urbanization has converted agricultural land into the built-up areas in the Far-Western cities. (Bista, 2012)

2.3.7. Settlement

After food, shelter is the most important need of man. Men construct houses and develop settlement to protect themselves against the vagaries of weather and to enjoy social life.

Settlement refers to the characteristic groupings of people into occupancy units, together with the facilities in the form of houses and streets which serve the inhabitants. Literally, speaking settlement system of a region includes farms and villages as well as urban places. Different stages of development of settlements seem to occur in Far-WesternTerai. According to the old person the ancient settlement was established in terai by tharu community.



Map No. 2.6

The initiation of the Malaria eradication programme in the late 1950s created conditions for a large scale migration of Hill to Terai. The economic importance of Terai region was manifested in the steady growth of physical as well as administrative development in later decades. As consequences the malarial area was transformed into productive agricultural, commercial and trade frontier. Therefore, the development and expansion of settlement of Far-Western Taria has been accelerated due to migration from the different part of the country. After the completion of East-West Highway(connected from eastern part to western part of Nepal in Terai region) and Bhemdatt Highway (connected from Terai to Hill and Mountain area of Far-Western Region), the settlement of Far-WesternTerai has been rapidly increased. The new economic activities and modern facilities in this area pulled people from the different part of the country. Therefore, the flow of people (mainly from hill and mountain area to Terai) has increased and expansion of settlement in Far-wester Terai.

The Tharu settlements are compact in nature as they to live in compact villages. Planned settlement program has also separated homesteads and land for cultivated.Urban areas and small

market centres also are compact in their nature of settlement. The hill migrant's settlements are dispersed.

Human settlement has been developing in different places due to the rapid migration after the malariya elimination in the Far-Western Terai.

Human settlement seems to have been developed from the India-bordering areas. Mainly in the places connected to India-border like Bramadev Gaddachauki, Belouri, Punarbas Fulbari, Vajani & Tikapur, which are facilitated with trade & transport, human settlement is developed.

After the construction of East-West highway (Mahendra Highway) in Terai, human settlement came to be centreed around it. Settlement is developing & extending everywhere after opening the roadways up to the southern border.

In this way, human settlements are extending in Far-west Terai, mainly in the surrounding area of East-West Highway (Mahendra Highway) & in border area of the south. As a result, the Municipalities are extended only in those areas.



Some Image of Urban Places of Far-Western Terai

Municipality (Photo Plate No. 2.10)



Dhangadi Bajar (Photo Plate No. 2.11)



Google Photo of Dhangadi area (Photo Plate No. 2.12)



Bhimdatt Municipality (Photo Plate No. 2.13)



Bhimdatt Municipality (Photo Plate No.2.14)



Bhimdatt Main Market Area (Photo Plate No.2.15)



Bhimdatt Buspark Area (Photo Plate No.2.16)



Tikapur Main Market Area (Photo Plate No. 2.17)



Tikapur Park Areas (above and below) ((Photo Plate No. 2.18)



2.3.8. Transport

Transport network play a vital role in setting the pace of economic, social and cultural development of any regions. It is the backbone of development and a key factor in the promotion of economic growth, not only in the urban areas but also their neighboring area of rural areas. In this study area, the physiographical suitability for road development in terai, there are good road network. Good roads are the key for the development of urban growth and urbanization.



Map No. 2.7

Kailali and Kanchanpur are two districts which are located in the farwestern terai. Different parts of that district are connected by motor roads. Dhangadi, Attriya, Bhimdatt, Sukhad, Lamki, Tikapur area are connected with road not only metaled roads but also gravelled and kachi (earthen) roads from neighboring places.

| S.No. | Types of Road | Length in k.m. | Per cent |
|-------|-------------------|----------------|----------|
| 1 | Black topped Road | 271.6 | 8.1 |
| 2 | Gravelled Road | 1461.6 | 43.6 |
| 3 | Earthen Road | 1619 | 48.3 |
| | Total | 3351.64 | 100 |

Table 2.13: Road Types and Length in Far-WesternTerai

Source: District Profile of Kanchanpur and Kailali 2011

Road Types & Length





From the above table and figure shown that the situation of road in Far-Western terai. Of the total road length of 3351.64 km, earthen roads constitute 1619km (48.3%), graveled ones 1461.6 km (43.6%) and black-topped ones 271.6 km (8.1%).

| S.No. | Name of the Roads | Distance in km. | Types of Road | Availability of Transportation |
|-------|---------------------|--------------------|---------------|-----------------------------------|
| 1 | Dhangadi -Gate | 7km | Black topped | all season |
| 2 | Dhangadi- Attriya | 16 | " | " |
| 3 | Dhangadi- Chaumola | 32 | 11 | " |
| 4 | Dhangadi- Masuriya | 39 | 11 | " |
| 5 | Dhangadi- Dodadhara | 80 | 11 | " |
| 6 | Dhangadi- Sukhada | 54 | 11 | " |
| 7 | Dhangadi- Phualbari | 14 | Graveled | Seasonal |
| 8 | Dhangadi-Budhitola | 41 | Black topped | all season |
| 9 | Dhangadi - Sahajpur | 60 | 11 | 11 |
| 10 | Sahajpur-Bpnagar | 20 | Graveled | Seasonal |
| 11 | Sukhada- Bhajani | 25 | 11 | all season |

Table 2.14: Some Important Roads Links in Far-Western Terai

| S.No. | Name of the Roads | Distance in km. | Types of Road | Availability of Transportation |
|-------|-----------------------|--------------------|----------------|-----------------------------------|
| 12 | Lamki- Tikapur | 18 | " | " |
| 13 | Tikapur- Khakraula | - | " | " |
| 14 | Bhimdatt-Gaddchuki | 8 | Black topped | " |
| 15 | Bhimdatt- Dodhara | 9 | Graveled | Seasonal |
| 16 | Bhimdatt-Attriya | 45 | Blacked topped | all season |
| 17 | Kaluwpur – Shreepur- | 70 | Gravelled | all season |
| | Dhangadi | | | |
| 18 | Daijee- Jogabuda | 22.5 | " | seasonal |
| | | | | |
| 19 | Daijee-Beldadi-Sripur | 70 | 11 | seasonal |
| 20 | Jhalari-Pipladi | 8 | " | all season |

Source: District profile of Kanchanpur and Kailali 2011

Dhangadi and Bhimdattnagar are the entry places from India. These areas are connected by motor road from different places of the country. So, some places of the Far-Western terai like Attriya, Dhangadi, Daijee, Bimdattnagar and Kaluwapur are the main transport junctions that provide outlets to adjoining different places of plain area, as well as other areas in hill and mountains and also Indian areas.

2.3.9. Regional Economy

Agricultural is the most dominant economic activity in the farwestern terai where the large number of work force is engaged in agricultural activities. The development of this region has mainly based on the transformation of the forested land into farming land. The cultivable land (agricultural land) is about 41.4 percent whereas 35.01 percent land into is under cultivation and rest about 6.39.percent land is not cultivation in this Terai.

The land use pattern of Far-Western terai is described in the above in the land use topic. Thus, the agriculture constitutes the dominant role in the economy of this area. Likewise trade, tourism, industry, other service sectors have also played an important role in the local economy. In addition, the development of education has contributed to the promotion of economic activities.

None the less, the importance of agriculture in the regional economic and the income achieved from each unit of cultivated land is distressingly low, mostly due to the mounting pressure of

population on the Far-Western terai is experiencing a serious problem of the massive inflow of migrants from the hill and mountains region of the country due to population pressure, the expansion of cultivated land. The expansion of agriculture land that has been the main source of income is no longer possible. Consequently a large number of people share the outcome from each unit of agricultural land that would provide low per-capita income. This income could not afford to meet the different needs of the people.

The contributing for economic development of the district are agriculture, irrigation, livestock, trade and business, industries, tourism and finance. Irrigation and livestock service are taken as subsector of economic development in this area.

| Crops | Area under Foods Crops (hec.) | | | Production(in M.Tons) | | |
|---------|-------------------------------|--------|--------|-------------------------------|--------|--------|
| | 2001 | 2006 | 2011 | 2001 | 2006 | 2011 |
| Paddy | 101795 | 100872 | 106655 | 120450 | 264833 | 313965 |
| Wheat | 36350 | 42400 | 66750 | 82000 | 99192 | 133232 |
| Maize | 18405 | 22690 | 22450 | 30180 | 34775 | 39995 |
| Millet | 512 | 500 | 470 | 500 | 480 | 490 |
| Barrley | 160 | 158 | 555 | 160 | 168 | 665 |

Table 2.15: Estimated Area Under Food Crops and Production in Far-Western Terai

Source: Statistical Year Book of Nepal-2011

The cropping pattern of the study area is characterized by the dominance of food grain (cereal crops) cultivation. Rice and wheat have the dominant crop in farming system.

TheFar-WesternTerai is secured in terms of food production and even there is surplus as well. In fiscal year of 2011, production of food crop was 488347 metric tons inFar-WesternTerai. The food crops production (rice, wheat, maize and barley) of this area gradually increased than previous years. There is a high possibility of development in agriculture and animal service. Agriculture sector includes paddy, banana, fishery that are oriented towards commercialization. Mahakali Irrigation Project, Rani Jamara Irrigation Project and other small irrigation projects, by these projects more land and livestocks are benefitted from irrigation. Theconducting activities relating development of agriculture, irrigation and animal service that helps economic development of this region.

The economic activities of the most of peoples in this area are agricultural but in the market centres and urban areas peoples are involved in trade and commercial activities. Among the urban area of Far-WesternTerai, Dhangadi is the fast growing as an commercial centre. It is the most important trading centres of Far-Western Development Region. And also Bhimdatt, Attriya Lamki, Tikapur and other market areas are developed as commercial and trading centres.