Chapter III

Darjeeling Hill Region- A Brief Introduction

3.1. INTRODUCTION

The district of Darjeeling is the northernmost, smallest and the only hill district of West Bengal and is located between 27˚13′ and 26˚ 31′ North latitudes and 88˚ 53′ and 87˚59′ East longitudes (Census of India, District Census Handbook, Darjeeling, 2011). The district accounts for 3.55% of the total area and 2.02% of the total population of the state according to the Census 2011. The district is distinctly different from the other districts of West Bengal in terms of its history, geography and ethnicity hence deserves special attention and policy formulation in comparison to the other districts. The present chapter intends to provide an insight into the various aspects of the Darjeeling district in terms of its history, geography, economy and demography. At the time of undertaking the present study, Kalimpong was a sub-division of Darjeeling district. It was constituted on 14th February 2017 as the 21st district of West Bengal. Since no separate secondary data exists for Kalimpong district all the data in the following analysis pertains to the former district of Darjeeling (including Kalimpong sub-division).

3.2. HISTORICAL BACKGROUND

Though the history of the Darjeeling Hills "cannot be independently traced back to any significant period of time", it may be construed that even before the formation of the Kingdom of Sikkim it had always been a part of the Himalayan kingdom of Nepal (Roy, n.d.). The Kingdom of Sikkim however claimed sovereignty to the Hills which was never accepted by the Nepalese Crown and was manifested in several attacks on Sikkim during which the hills were mostly covered with forests and no significant settlements were observed (*ibid*). During the 30 years starting from 1780, the Gurkhas who had seized power in Nepal and invaded Sikkim "overran Sikkim as far east as the Tista and conquered and annexed the Terai" (Dash, 1947, p. 37). Though the Nepalese conquest of Sikkim ended in 1810, Nepal never accepted Darjeeling to have belonged to Sikkim. Meanwhile, the British East India Company being concerned over Nepal's growing power and to win over Sikkim as an ally to destroy the Nepalese King went into war with Nepal in 1814 to gain back Darjeeling and hand it over to the Raja of Sikkim (Roy, n. d.). The signing of the Treaty of Sugauli (1816) which ended the Anglo-Gorkha War (1814-1816) was crucial in the

consolidation of Darjeeling (Das, 2014, p. 34). Through this treaty the Nepalese were forced to surrender the land back to the British East India Company who handed it back to the Raja of Sikkim through the Treaty of Titaliya in 1817 (Roy, n. d.). Ten years after the Treaty was signed there arose disputes between Sikkim and Nepal which was referred to the Governor General who appointed two officers in1828, Captain Lloyd and Mr. Grant to settle the disputes. The two officers were attracted by the numerous advantages of the Darjeeling Hills as a sanitarium and for military purposes and recommended the same to the Governor General who approved of the projects (Dash, 1947, p. 37). Thereafter, General Lloyd carried out negotiations with the Raja of Sikkim and succeeded in executing the "Deed of Grant" through which the Raja handed over the Darjeeling Hills and the Terai to the British East India Company in 1835 (*ibid*). Darjeeling was thus acquired by the British who have since then played an instrumental role in the economy of the Darjeeling Hills. In 1840 Darjeeling was officially recognised as a district (Das, 2014, p.38). At first, the Kalimpong area was notified as a sub-division under the Deputy Commissioner of the district of Western Duars but in 1866 it was transferred to the district of Darjeeling which was the final addition to the district and the district reached its final dimensions (Dash, 1947, p. 41).

Many explanations have been provided regarding the origin of the word Darjeeling. The evolution of the name "Darjeeling" may be traced back to 1763 when a group of monks travelled from the Pemiiongchi Monastery to Darjeeling and built a monastery in 1765 and christened it "Dorrjeeling" (Roy, n.d) after Rinzing Dorji Legden La who was the Chief Abbot of the newly built monastery, and the word "Dorjiling" originally meant "the place where Dorji lives" (Lama, 2008, p. 2). The monastery was however attacked and destroyed by the Nepalese army in 1780 and a makeshift temple dedicated to Lord Mahakal was set up in its place which still stands to date and is a landmark of Darjeeling town. In the meantime, the monks set up another monastery in Bhutia Bustee between 1808 and 1809 and legend has it that people unofficially referred to it as the "replaced Dorrjeeling Monastery" which became popular as a learning centre of Buddhism. Eventually, there occurred a steady influx of monks and Bhutia tribesmen in and around the monastery who along with the populace of the Bustee mingled with the native Lepchas which gradually led to the evolution of a "semi-prosperous economy". The Bustee began to be known as "Dorrjeeling" since it was where the "Dorrjeeling" monastery was situated. Thus began the evolution of the present day Darjeeling (Roy, n. d.) and the present word Darjeeling may be a mispronunciation of the word "Dorrjeeling".

Another explanation is that the Observatory Hill being the highest point in the area attracted a lot of thunder and lightning during the monsoons, hence the name Dorjiling, the Land of the Thunderbolt ('Dorji' meaning thunderbolt, the sceptre of Lord Indra and 'ling' meaning house or abode) (Lama, 2008, p. 2). O' Malley (1907) believes that the name Darjeeling is a corruption of the word Dorjeeling (O' Malley, 1907, p. 1). Yet another explanation is that in the "Rong" language of the Lepchas, the original inhabitants of the place, all the hilly regions to the south of the Kanchenzonga mountains inhabited by the Lepchas was known as "Dar-Tzu-Lyang" which meant "the abode of the heavenly goddess of beauty" (Lama, 2008, p.2). Another legend regarding the origin of the name Darjeeling, according the Rai (2008), is that somewhere near the present day Chowrasta or in the Chowkbazar area in Darjeeling town there was a big flat stone where the Khambus (a prominent Gorkha community) used to assemble for chatting. They called that place "Tajeelung" which is made up of the Kirati (another term for Khambus) words "tajee" which means chatting or talking and "lung" means stone. In addition, Rai further mentions that according to the Khambus there was a big flat stone which was used by the Khambus to take rest and exchange their "dowah" (experience of their life) chatting and sitting on that stone or "lung" and called that place "Dowahlung" which later became "Durjeeling" and eventually Darjeeling with the advent of the British (Rai, 2008, p. 70). Rahul Sanskrityayan has dismissed the claim that Darjeeling is derived from the word Durjoy-linga though most of scholars accept the view that the name Darjeeling has been derived from Dorje-ling, the name of the monastery on the Observatory Hill which was later shifted to the Bhutia busty (Das, 2014, p.33).

3.3. GEOGRAPHY

Located within the Lesser and Sub-Himalayan belts of the Eastern Himalayas and bounded by the Sikkim Himalaya in the north, the Bhutan Himalaya in the east and the Nepal Himalaya in the west, the hill areas of the Darjeeling district occupy an area of 2,477.83 square kms which constitutes 79 percent of the total area of the district. Rising from 100 metres above sea level in the plains to over 4,000 meters above sea level with the mighty Kanchanjungha in the backdrop, the rugged terrain and the natural beauty of the Hill areas attract tourists from far and near (Desai, 2014, p. 10).

The Darjeeling district is in the shape of an irregular triangle. It however resembles a quadrilateral if the Siliguri sub-division is excluded (Chakraborty, 1986). In the southern region which is the base, lies the Terai, which is a low-lying marshy area having an average

height of 300 ft above sea level; and the apex is formed by the Phalut ridge which is nearly 3,600 meters high and forms the border between Nepal and India (Das and Bhuimali, 2011, p. 27). The hill portion of the district is made up of "a mass of mountainous spurs and ranges" with heights of 12,000 feet with no flat valleys or plains, lakes, precipices, and few or no bare slopes except in areas where the forests have been cleared for tea gardens or cultivation. The main ridges move in all directions and lead to many long spurs on either side which forms valleys varying in climate and elevations. They mostly stretch from north to south, with the principal rivers flowing in the same direction; although many spurs and the torrents between them flow east and west, or north to south in some cases. The interior of the district may therefore be described as "a confused labyrinth of ridges and valleys" (O' Malley, 1907, p.2). The northern boundary of the district starts on the west at the peak of Phalut nearly 12,000 ft high which forms the boundaries of Nepal, Sikkim and India; and runs east from Phalut along a ridge descending to the Rammam river. The boundary then follows the course of the river, joining the Rangit and following it upto the Tista. East of that, the boundary follows the Tista upstream until it meets the Rangpo-Chu, then moves up the Rangpo-Chu followed by Rishi-Chu to a spur of the Rishi La, the boundaries of Sikkim, Bhutan and India. From here, the boundary with Bhutan follows downwards along the Ni-Chu in a south-easterly direction until it meets the Jaldhaka river from where the boundary follows the course of the river southwards until it reaches the Jalpaiguri district. The district is bounded by Nepal on the west. From Phalut the boundary on the west moves along the southward ridge joining the river Mechi which continues as the boundary right down into the plains and up to the south-west corner of the district. On the south, the district is bounded by the Jalpaiguri district from the Khumani forest on the east to the village of Phansidewa on the Mahanadi river and westward of Phansidewa by the Purnea district of Bihar (Dash, 1947, p.1).

The differences in altitude and aspects lead to significant climatic variations in the district in spite of its size, especially between the hills and the plains. While the hill areas enjoy pleasant summer, heavy rainfall during the monsoons and cold winters with snowfall in higher altitudes, the climate in the plains is characterized by "hot summer, shorter rainy season and mild dry winter" (Chakrabarty, 1986). The intra-district variations in climatic conditions besides being affected by altitude, is also due to the configuration of the neighbouring mountains which deflect winds and significantly affect local rainfall and temperature (Dash, 1947, p.14).

The region receives heavy rainfall throughout the monsoon months, but average rainfall varies considerably from one place to another, as it depends on a number of local

conditions such as the configuration and height of local mountain features (*ibid*). The rainfall in the region fluctuates between a few millimeters in winters to 400-800 millimeters during the summers. Although altitude has no effect on rainfall received, the slope facings of the different areas may affect the rainfall pattern with the southwest, southeast or south facing slopes receiving much higher rainfall than those facing north, northwest or northeast (Desai, 2014, p.33). The heavy downpour makes the district vulnerable to landslides, most of which occur during or soon after the monsoons. In a hilly area like Darjeeling the quantity of rainfall and its pattern needs to be taken into account given that "slope percentage plays an important role in respect of surface runoff, water seepage/infiltration and land use pattern" (Desai, 2014, p. 32).

3.4. ECONOMY

3.4.1. District Domestic Product

An important economic indicator of the growth and pattern of economic development of a state or a district is the State Domestic Product (SDP)/ District Domestic Product (DDP) at factor cost with per capita income being used as a measure of the well-being and standard of living of the people (GoWB, 2015). West Bengal is a middle income state and it ranked 5th in respect of Gross State Domestic Product (GSDP) and 18th in respect of per capita income at constant (2004-05) prices for the year 2012-13(Q) among the different Indian states (*ibid*). The hill states of the country have achieved a lower rate of growth in Net State Domestic Product (NSDP) indicating poor economic growth performance, one of the reasons for which could be the disturbed law and order conditions in these regions due to insurgency (Awasthi, 2012, p. 31) which may hold partly true for Darjeeling district, being a witness to several political disturbances over a span of about three decades. Though the hill district of Darjeeling occupied the 14th position in respect of Net District Domestic Product (NDDP) at constant (2004-05) prices for the year 2012-13(Q) among the different districts of West Bengal, it occupied the second position in respect of per capita income at constant (2004-05) prices for the same year, and the top position in respect of the average annual growth of NDDP at constant (2004-05) prices for the period 2005-06 to 2012-13 (GoWB, 2015).

The percentage contribution of the district to the state's NSDP at constant (2004-05) prices is only a little above 2% though the rates have been increasing, albeit at a slow rate. In 2012-13 the percentage share of the district to the NSDP at constant (2004-05) prices was 2.93 percent. The real value of the NDDP of the district at constant (2004-05) prices rose from Rs. 4,576.98 crores in 2004-05 to Rs. 9,003.08 crores in 2012-13 giving an average

annual growth rate of 8.87 percent. The annual growth rate of the NDDP at constant (2004-05) prices over the period 2005-06 to 2012-13 has been higher than the annual growth rate for the state with the exception of 2006-07 and 2007-08. The rate however picked up in 2008-09 and reached 15.81 percent in 2009-10, the second highest growth rate among the districts, after which the rates again declined in the following year. In 2012-13 however the rate has again increased to 8.55 percent.

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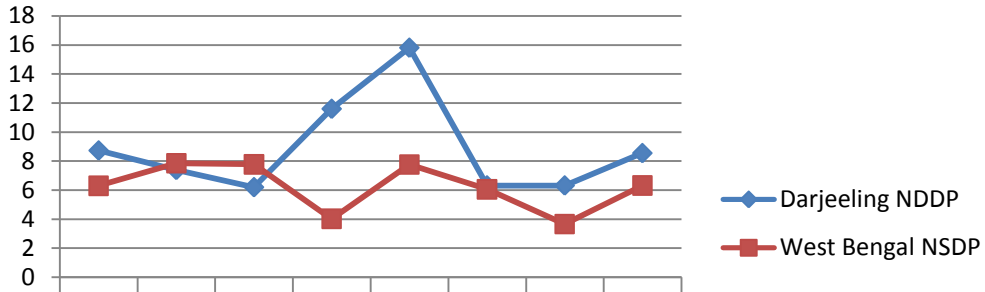


	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12(P)	2012-13(Q)
Darjeeling NDDP	8.73	7.39	6.2	11.6	15.81	6.32	6.32	8.55
West Bengal NSDP	6.3	7.85	7.78	4.03	7.77	6.06	3.67	6.32

Source: GoWB, 2015.

Figure 3.1: Annual Growth Rate of Net District Domestic Product at Constant (2004-05) Prices, Darjeeling District and West Bengal, 2005-06 to 2012-13.

The sectoral composition of NSDP and NDDP (Table 3.1) reveals the declining share of the primary and secondary sectors and the increasing share of the tertiary sector for the state and the district. For the district the share of the primary sector declined from 26.43 to 15 percent and for the secondary sector from 14.14 to 10.65 percent between 2004-05 and 2012-13. The share of the tertiary sector on the contrary has increased from 59.42 to 74.34 percent during the same period. The highest Compound Annual Growth Rate has also occurred in the tertiary sector followed by the secondary and the primary sector during the same period. The per capita incomes of the district as well as the state have shown an increase with the district registering a growth rate of 6.53 percent and the state a growth of 5.17 percent. Clearly, the per capita income of the district is higher than the state average.

The sectoral composition of NDDP shows that there has been services led growth in the district and the state where the service sector has grown at the expense of the primary and the secondary sectors. An increase in per capita income in the district and the high income elasticity of demand for services may have led to a higher growth of the tertiary sector. The

increasing importance and the highest share of the tertiary sector in the district's domestic product however, do not imply a high level of development in the district. The growing importance of transport and communications in the region and the dependence on tourism could have contributed to the rising importance of the tertiary sector. A considerable portion of the output in the tertiary sector may also have been generated in urban informal activities. Economists opine that the services led growth without the development of the secondary sector cannot be sustained for long as the economy will be unable to meet the increased demands for food, clothing and other industrial products as an economy undergoes structural transformation.

Table 3.1: Sectoral Composition of Net State Domestic Product and Net District Domestic Product and Per Capita Income at Constant (2004-05) Prices, West Bengal and Darjeeling, 2004-05 to 2012-13

Year	Primary		Secondary		Tertiary		Per Capita Income (Rs.)	
	Darjeeling	West Bengal	Darjeeling	West Bengal	Darjeeling	West Bengal	Darjeeling	West Bengal
2004-05	26.43	26.22	14.14	18.09	59.42	55.69	26348.4	22648.91
2005-06	24.53	25.16	14.81	17.57	60.65	57.28	28045.42	23808.28
2006-07	23.28	23.76	14.65	17.80	62.08	58.44	29480.42	25399.79
2007-08	21.73	23.16	14.48	17.85	63.79	58.98	30645.82	27094.44
2008-09	19.88	21.63	12.98	16.03	67.14	62.34	33497.57	27913.73
2009-10	17.43	21.31	13.00	16.44	69.57	62.25	37972.06	29799.05
2010-11	16.38	19.57	12.80	16.80	70.82	63.63	39513.04	31314.18
2011-12	15.15	18.82	10.98	15.03	73.87	66.15	41121.03	32164.00
2012-13	15.00	18.25	10.65	14.41	74.34	67.35	43695.79	33889.16
CAGR	1.39	1.50	5.04	3.23	11.92	8.76	6.53	5.17

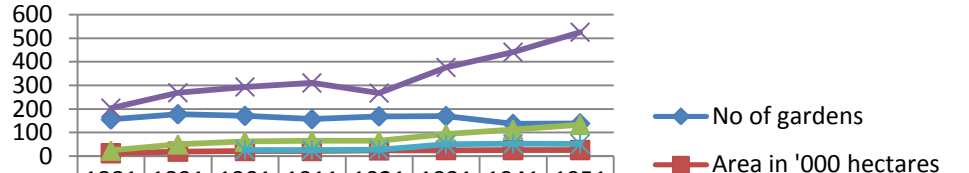
Source: GoWB, 2015. Note:CAGR-Compound Annual Growth Rate

3.4.2. Tea

The economy of the Darjeeling hills is primarily dependent on tea, tourism and agriculture. The tea industry is the backbone of the hill economy with the Darjeeling Hills having the highest concentration of tea industries in the Eastern Himalayas and absorbing the largest number of workers in the region (Chhetry, 1999, p.36). The growth of the tea industry has also been the most powerful factor contributing to the growth of population in the district (Das and Bhuimali, 2011, p. 67).

The credit for the establishment of the tea industry in Darjeeling goes to Dr. Campbell, the then Superintendent of Darjeeling, who in 1840 started the experimental growth of tea in Darjeeling. However, it was not until 1856 that the industry was established

as a commercial enterprise, and the Alubari tea garden was opened by the Kurseong and Darjeeling Tea Company, and another garden in Lebong was set up by the Darjeeling Land Mortgage Bank. About the same time the planters started focusing their attention to the Tarai and in 1862 the first garden was opened out at Champta near Khaprail. Meanwhile, the development of the tea industry in the hills gathered momentum as the soil and climate were found to be suitable to the growth of tea and by 1866 there were about 39 gardens with 10,000 acres under cultivation, having an outturn of over 4,33,000 lbs. of tea. During the next 30 years, the number of gardens in the district more than quadrupled and the outturn increased by a massive amount (O' Malley, 1907, pp.72-74). The Figure 3.2 shows the tea statistics in the district for the period 1881-1951.



	1881	1891	1901	1911	1921	1931	1941	1951
No of gardens	155	177	170	156	168	169	136	138
Area in '000 hectares	11.5	18.5	20.9	20.9	23.9	24.8	25.6	25.3
Production in lakh kgs	23.4	49.5	61.4	64.6	63.9	93.0	112.6	132.8
Yield in kgs/hectare	203.7	268.1	293.1	310.0	267.3	375.2	440.0	524.1
Percentage of Workers			26.06	26.09	27.97	49.33	52.28	50.6

Source: Das and Bhuimali, 2011, p. 68.

Figure 3.2: Tea Statistics, Darjeeling District, 1881-1951

After Independence most of the tea gardens were sold to Indian companies. However, due to lack of prior experience and absence of long term policy of the Government of India with respect to management in tea plantations, the new management who took over the reins from their British counterparts carried on the old business in a stereotyped manner with no motivation for introducing technological changes. The position of the tea companies particularly in Darjeeling therefore continued to deteriorate (Das, 2014, p. 120). Since 1961 there has been a fall in production and acreage and the number of labourers employed.

Over the years amalgamation of several estates has led to decline in the number of gardens. Further closure of several gardens has also contributed to this decline. Between 1991 and 2001 the number of tea gardens has declined from 132 to 86. Unofficial records however show the number of gardens in 2001 as only 65 which show the closure of 50 percent of the

tea gardens which is alarming. In 2011-12 there were 87 tea gardens in the district occupying an area of 18,091.96 hectares and providing employment to 51,485 people (GoWB, 2014).

The tea industry in recent years has been facing several challenges. The productivity in the Darjeeling Hills is very low compared to the all India average. The hilly terrain along with the lack of proper infrastructure, the high costs of labour in addition to low productivity have led to increase in the production costs. The effects of climate change in the form of erratic rainfall pattern causing frequent landslides along with other environmental hazards have also contributed to significant losses for the gardens along with deterioration in the quality of tea. Moreover, hardly any extra land is available for expansion or establishment of new estates. The dwindling condition of the tea gardens in the region and their subsequent closure has caused starvation deaths in several families.

3.4.3. Agriculture in Darjeeling

The agricultural activities practiced in the hill and mountain regions are significantly different from the mainstream agriculture practiced in the lowland areas and is termed as mountain farming. "Mountain farming is broadly defined as all land based activities, such as cropping, horticulture, animal husbandry, forestry, and their interlinkages, and is the prime source of sustenance of the mountain populations. Farming is also the prime user of the natural resource base and production environment in the mountain areas" (Partap, 1995). The hill and mountain regions, particularly the lower and middle mountains where annual cropping is one of the land-based activities may be regarded as one of the fragile or marginal resource areas which is defined as "one which cannot tolerate the degree of disturbance implied by the intensity of use associated with specific usage" (Jodha, 1991). In fragile areas sustainable agricultural practices are hindered due to the specific features of these regions which are related to the physiographic constraints.

Prior to the advent of the "skilful Nepalese cultivators" the system of cultivation that was practiced in the interior of the hills by the nomadic tribes i.e. the Bhutias and Lepchas, and by the Meches and the other aboriginal tribes on the foothills, was *jhumming* or shifting cultivation. *Jhumming* consisted of clearing the forest by burning the forest cover for growing crops using the hoe. However in a year or two the soil would soon become exhausted and the tribes would move on to a fresh patch and follow the same procedure. The Nepalese immigrants brought along with them the "superior method" of terrace cultivation which includes constructing terraces on the mountain slopes for growing crops by using the plough and is a distinctive and important feature of Himalayan cultivation. Cultivation thus expanded rapidly in the middle of the 19th century. Due to the reservation of forests, appropriation of

land for tea cultivation and extension of plough cultivation with the advent of the Nepalese the wasteful system of *jhumming* gradually disappeared (O'Malley, 1907, p. 64; Dash, 1947, pp. 102-103).

Though the system of land management/village administration remained significantly the same in the district, the nature of economy changed during the British period (Subba, 1985, p.37). The hills east of the River Teesta which includes the Kalimpong sub-division was made an agricultural area, while the hills to the west which comprises of Sadar and Kurseong sub-division was covered with tea gardens, the area under ordinary non-plantation crops being very small and confined to an area north-west of the Little Rangit river known as Chebu Lama's grant (*ibid*; Dash, 1947, pp. 99-100). The clear demarcation in the economy of the district may be due to the following reasons: late annexation of Kalimpong sub-division, nature of the land itself which is not very steep in Kalimpong as compared to Darjeeling and the climatic conditions which are more suitable to cultivation in Kalimpong as compared to the land in the west of River Teesta (Subba, 1985, p. 37).

The agriculture practiced in the Darjeeling Hills is different in nature from agriculture in the rest of the country in that the agriculture in the hills is primarily traditional and is characterised by small scale of operations and high labour intensity with the agricultural goods market being highly unregulated (Chettry, 1999, p. 59). The physical configuration of the district makes the conditions for agriculture extremely diverse. In the lowland areas there are stretches of alluvial soil suitable for rice cultivation. However in the hills many of the slopes are stony and precipitous and unsuitable for cultivation, although on the gentler slopes the soil is very fertile (Dash, 1947, p. 99). Due to the physical constraints therefore, the agricultural pattern of the hills is not the same as in the plains (Dasgupta, 1990, p. 62). In the hills only 13% of the total land is available for cultivation (*ibid*). The incline of the slopes, aspect of land and elevation have important influence on the fertility of land, hence nature of cultivation. Cultivation of land on steep slopes and felling of trees may give way to landslips. On less steep slopes the plough can be used and if the land is precipitous then the hoe can be used. Aspect of the land also has an influence on the fertility. An eastern or southern aspect is best since they get the benefit of the morning and midday sun whereas a northern aspect is cold and sunless (O'Malley, 1907, p. 64-65). However, even parts of the east and west facing slopes at times get little sunshine especially when the lands are eclipsed by hilltops or when they are in deep valleys (Subba, 1985, p. 104). Altitude or elevation of the land also has an immense influence on the fertility of land hence nature of cultivation.

3.4.3.1. Cropping Pattern

The farming system prevalent in the hill region of the district can be classified as a mixed crop system, primarily dominated by food crops. Before the advent of the British there was very little cultivation, so it may be said that all the crops, fruits and vegetables grown in the district are not native but have been introduced and acclimatised (Dash, 1947, p.107). The agricultural crops in the region can be broadly grouped into two categories-food crops and cash crops. The food crops include rice in wet cultivation, and maize, millets, buck-wheat in dry cultivation (also known as sukhakhet) and potato, barley etc. while the cash crops include tea, cinchona, ginger, cardamom, potaoes, fruits and vegetables (Dash, 1947, p. 103; Desai, 2014, p.83). Agriculture is greatly influenced by altitude and slope aspect and the methods of cultivation in the hills vary with the crops to be grown. No crops are grown above 2,895 meters due to the cold. Tea plantations are found between 762-1,981 meters, as also paddy. The vegetables are cultivated in the lower slopes and fruits such as orange, papaya, peaches, guava, plums, mangoes etc. are grown in the valleys and areas with low altitudes. Wheat, buck-wheat, barley, millets etc. are found to be cultivated above 1,372 meters. Cash crops like cardamom and ginger on the other hand are mainly cultivated in places where water supply is plenty such as the lower slopes and along the *jhoras* (Desai, 2014, pp. 83, 116). The principal vegetables grown in the region are peas, beans, potatoes, cauliflowers, beetroots, carrots, radishes, tomatoes, squash, *rayo saag* etc. which can be marketed far and near. It is possible to grow many of these vegetables over different altitude ranges (Chettry, 1999, p. 61). Table 3.2 shows the tentative cropping pattern of the Darjeeling Hills according to the altitude of the land. Though the cropping pattern depends on other factors such as aspect and nature of the land as well, it is clear from Table 3.2 that paddy, maize, millets and vegetables etc. cannot be grown at high altitudes.

Table 3.2: Cropping Pattern in Darjeeling Hills

Altitude	Kharif	Rabi
Below 1,000 meter	Maize/ Paddy/Millet/Vegetables	Wheat/ Barley/Potatoes
Between 1,000 and 1,500 meter	Maize/ Paddy/Millet/Vegetables	Wheat/ Barley/Potatoes
Between 1,500 and 2,000 meter	Maize/ Potatoes/Vegetables	Wheat/ Barley/Potatoes
Above 2,000 meter	Monocrop of Potatoes/ Barley/Vegetables	

Source: Dasgupta, 1990, p. 62.

3.4.3.2. Production of Major Crops

The district has lower productivity levels as compared to the other districts for almost all crops. The productivity of the district for almost all major crops is also lower than the state average. The percentage share of the district in the total production of the major crops is also miniscule with the exception of maize (Table 3.3).

Table 3.3: Percentage Share of Darjeeling District in Total Production of Major Crops in West Bengal, 2010-11 to 2012-13

Crops	Rice	Wheat	Maize	Pulses	Oilseeds	Fibre Crops	Sugarcane
2010-11	0.58	0.40	46.84	0.18	0.04	0.37	0.03
2011-12	0.49	0.48	46.62	0.19	0.03	0.39	0.06
2012-13	0.45	0.26	37.37	0.20	0.04	0.44	0.05

Source: Computed by Author from GoWB, 2009b, 2014 (District Statistical Handbook Darjeeling 2007, 2012)

As regards production of maize, the district ranked the highest contributing 37 % of the total production of maize in the state in 2012-13. The percentage share of the district in the total production has however declined, albeit marginally for rice, sugarcane and wheat; and by almost half for maize between 2011-12 and 2012-13. For pulses, oilseeds and fibre cops the percentage shares have increased slightly.

The area under the principal crops, total production and productivity of major crops in the Darjeeling district as well as for the hill and plain regions of the district can be understood with the help of Table 3.4. With the exception of potatoes and maize the area under different crops in the plains is greater than in the hill region. In 2006-07 productivity of wheat and pulses was slightly higher in the hills as compared to the plains. However, in 2011-12 the productivity of all the major crops in the hills was lower than that in the plains. The low productivity in the hill regions could be attributed to the prevalence of small and marginal holdings which may further be fragmented and scattered; low soil fertility; poor irrigation facilities and inability to use modern technology and inputs (Mamgain, 2004, p.47).

Boro paddy is not cultivated in the hills while aus paddy contributed a very small percentage (0.20 percent) to the district's total production in 2011-12. Aman paddy forms almost 20 percent of the total production of the district. Wheat production in the hills constitutes around 10 percent of the district's production. The highest contribution is of maize which formed almost 97 percent of the district's production. Pulses, oilseeds and potatoes constituted 39, 31 and 53 percent respectively to the district's total production in 2011-12. The production of most of the crops has shown an increase in the hills during the five year

period with the exception of pulses and potatoes which have shown a slight decline. For the district aus paddy and pulses have shown a slight decline.

Table 3.4: Area, Production and Productivity of Major Crops in Hill and Plain Regions of Darjeeling District, 2011-12

Year		2006-07			2011-12			Production as % of District 2011-12
Crop	**Region**	**Area in hect.**	**Production in '000 metric tonnes**	**Productivity in kg/hect**	**Area in hect.**	**Production in '000 metric tonnes**	**Productivity in kg/hect**	
Aus	Hill	-	-	-	7	0.01	1857	0.20
	Plain	4356	8.9	2040	3461	6.4	1863	99.8
	Total	4356	8.9	2040	3468	6.5	1863	-
Aman	Hill	5392	9.6	1773	5596	11.9	2134	19.7
	Plain	20144	37.0	1838	21646	48.6	2247	80.3
	Total	25536	46.6	1824	27242	60.6	2224	-
Boro	Hill	-	-	-	-	-	-	-
	Plain	1536	3.2	2071	1579	4.3	2723	100
	Total	1536	3.2	2071	1579	4.3	2723	-
Wheat	Hill	228	0.35	1526	201	0.40	1965	9.5
	Plain	1988	2.8	1418	1792	3.8	2097	90.5
	Total	2216	3.2	1429	1993	4.2	2083	-
Maize	Hill	NA	NA	NA	15226	35.0	2301	97.3
	Plain	NA	NA	NA	428	0.99	2313	2.7
	Total	14600	30.8	2110	15654	36.0	2301	-
Jute*	Hill	-	-	-	-	-	-	-
	Plain	2481	31.4	13	3039	33.7	11	100
	Total	2481	31.4	13	3039	33.7	11	-
Pulses	Hill	98	0.07	694	97	0.05	505	39.2
	Plain	196	0.11	536	138	0.08	551	60.8
	Total	294	0.17	588	235	0.13	532	-
Oilseeds	Hill	55	0.03	491	133	0.05	391	32.6
	Plain	216	0.11	491	275	0.12	425	67.4
	Total	271	0.13	491	408	0.17	414	-
Potato	Hill	2684	46.9	17479	3239	46.2	14254	53.3
	Plain	1632	33.3	20411	1735	40.5	23330	46.7
	Total	4316	80.2	18588	4974	86.6	17420	-
Sugar cane	Hill	NA	NA	NA	-	-	-	-
	Plain	NA	NA	NA	8	0.93	116375	100
	Total	NA	NA	NA	8	0.93	116375	-

Source: Computed by Author from GoWB, 2009b, 2014 (District Statistical Handbook Darjeeling 2007, 2012)
*Note: NA-Not Available. Pulses include masur, maskalai and khesari, Oilseeds include mustard and til. * Production in thousand bales of 180 kg each and Productivity in bales per hectare.*

3.4.3.3. Production of Fruits and Vegetables

West Bengal is primarily a rice producing state. However, in recent years diversification in cropping pattern towards high value cash crops is taking place which would help to increase the contribution of non-rice crops to output ratio for achieving higher agricultural growth rates in the future besides contributing towards higher levels of nutrition, poverty reduction, employment generation and sustainable natural resources management (Bhattacharya, 2008). The state is a leading producer of a wide variety of horticultural products which includes traditional and non-traditional vegetables, fruits and high value exotic flowers.

Historically, the Darjeeling hills have pioneered the development of floriculture in India, with the nurseries at Kalimpong in the Darjeeling district being among the first to export floriculture products from India to the USA, UK and other European countries (Chattopadhayay and Roy, 2011). The state including the hill areas of Darjeeling district also has immense potential in the cultivation of medicinal plants and herbs.

Table 3.5: Area and Production of Fruits and Vegetables, Darjeeling district and West Bengal, 2001-02 to 2010-11.

Year	Darjeeling				West Bengal				As % of State			
	Fruits		Vegetables		Fruits		Vegetables		Fruits		Vegetables	
	Area	Prod	Area	Prod	Area	Prod	Area	Prod	Area	Prod	Area	Prod
01-02	10.3	0.171	20.5	0.198	147.6	1.986	838.8	10.25	7.0	8.6	2.4	1.9
02-03	10.5	0.174	20.8	0.204	152.2	1.786	874.9	10.64	6.9	9.7	2.4	1.9
03-04	10.6	0.172	21.6	0.214	160.9	2.016	859.8	10.92	6.6	8.5	2.5	2.0
04-05	10.9	0.177	21.9	0.225	166.3	2.128	868.4	11.06	6.5	8.3	2.5	2.0
05-06	11.1	0.187	22.4	0.241	172.7	2.302	889.8	11.56	6.4	8.1	2.5	2.1
06-07	8.7	0.176	21.6	0.238	187.1	2.641	903.6	12.09	4.7	6.7	2.4	2.0
07-08	11.1	0.208	21.7	0.235	194.3	2.767	912.4	12.56	5.7	7.5	2.4	1.9
08-09	11.2	0.209	21.7	0.235	203.3	2.776	922.8	12.80	5.5	7.5	2.3	1.8
09-10	11.2	0.209	21.8	0.234	208.3	2.861	932.7	13.03	5.4	7.3	2.3	1.8
10-11	11.4	0.214	22.7	0.240	211.6	2.953	943.3	13.33	5.4	7.3	2.4	1.8

Source: GoWB, 2005, 2009b, 2014(District Statistical Handbook Darjeeling 2004, 2007 and 2012). GoWB, 2006, 2009a (Statistical Abstract West Bengal, 2005 and 2008) and Economic Review West Bengal 2011-12).
Note: Area in thousand hectares and production in million tonnes.

The Table 3.5 shows the total area under, and the production of fruits and vegetables in the district and the state. The percentage contribution of the district in terms of total area and production for fruit cultivation has shown a decline from 2001-02 up to 2006-07 thereafter which it has increased and remained almost steady up to 2010-11. For vegetables however,

the percentage share of the district in total area has remained more or less steady for the decade and so has the percentage share of the district in total production of the state. The productivity of different fruits and vegetables in the district has not shown much change but is higher as compared to the productivity of other principal crops.

The area, production and yield of different fruits and vegetables in the district for the period 2008-09 and 2011-12 are shown in Table 3.6.

Table 3.6: Area, Production and Yield of Different Fruits and Vegetables, Darjeeling District, 2008-09 to 2011-12

Fruits and Vegetables	08-09			09-10			10-11			11-12		
	Area	Prod	Yield	Area	Prod	Yield	Area	Prod	Yield	Area	Prod	Yield
Mango	0.1	0.2	2833.3	0.1	0.2	2833.3	0.1	0.2	3166.7	0.1	0.2	3500
Banana	0.3	3.9	15760	0.3	3.9	15760	0.3	3.9	15760	0.4	5.5	15828.6
Pineapple	4	126.9	31964.7	4	126.9	31725	4.2	131.9	31783.1	4.2	133.9	31654.8
Papaya	0.1	3	33222.2	0.1	3	33222.2	0.1	3	30100	0.1	2.9	32222.2
Guava	0.1	1.5	16111.1	0.1	1.5	16111.1	0.1	1.5	16111.1	0.1	1.7	13750
Jackfruit	0.2	2.6	15117.6	0.2	2.6	15117.6	0.2	2.6	15117.6	0.2	2.6	15117.6
Litchi	0.1	0.6	9166.7	0.1	0.6	9166.7	0.1	0.6	9166.7	0.1	0.6	9166.7
Mandarin Orange	3.7	36	9777.2	3.7	36.2	9818.4	3.7	36.5	9873	3.8	37.6	9936.5
Other Citrus fruits	0.1	1.2	8857.1	0.1	1.2	8857.1	0.1	1.2	8857.1	0.1	1.3	8928.6
Others	2.7	32.8	12312	2.6	32.7	12369.6	2.6	32.8	12381	2.7	32.8	12373.6
Tomato	1	13.5	13915.3	1	14.5	14948.3	1	14.7	14959.2	1	14.7	14808.1
Cabbage	1	30.1	30292	1	30.1	30292	1	30.5	30198	1	31.1	30194.2
Cauliflower	0.9	26.6	29092.9	0.9	26.6	29092.9	0.9	27	29000	0.9	27	29000
Peas	2.6	12.2	4674.8	2.6	12.2	4674.8	2.7	12.6	4733.1	2.7	12.1	4545.1
Brinjal	1.2	24.6	20642.9	1.2	24.6	20647.1	1	20.6	21500	1.2	26.2	21677.7
Onion	0.1	0.5	8846.2	0.1	0.5	8846.2	0.1	0.5	9600	0.1	0.4	8000
Cucurbits	5.2	80.6	15630.3	5.3	78.6	14952.4	5.3	81.4	15266.4	5.3	81.4	15499
Ladies Finger	0.5	6.1	12004	0.5	6.1	12004	0.5	6.2	12215.7	0.5	6.1	12019.6
Radish	1.1	13.9	12428.6	1.1	13.9	12428.6	0.8	9.7	12802.6	1.1	14.4	12945.9
Others	8.2	26.7	3271.2	8.2	26.7	3270.4	9.5	36.8	3865.5	8.3	27.9	3367.9

Source: GoWB, 2014 (District Statistical Handbook Darjeeling 2012)
Note: Area in thousand hectares. Production in thousand tonnes. Yield in kgs per hectare.

3.4.3.4. Land Use Pattern

In order to understand the relationship between man and the environment it is important to study land use pattern. In view of rapidly increasing population pressure and decreasing man land ratio, the study of land use becomes increasingly crucial so as to achieve optimum utilization of land and prevent its exploitation and degradation. Land use classification may

be defined as "the systematic arrangement of various classes of land on the basis of certain similar characteristics, mainly to identify and understand their fundamental utilities in satisfying the needs of human society" (Das, 1990, p.141). Among the different uses of land, the most important is agricultural use of land since it is essential for survival.

When the British first took over the area from Sikkim in 1835, the region was entirely covered with forest with little habitation. With growth in population the forests were converted into cultivated land and tea gardens (Dash, 1947, p.123). In fact, the main problem in the Darjeeling hills is population explosion since deforestation has taken place to a large extent to cater to the large volume of population, which results in maximum soil erosion in the hills (Desai, 2014, p. 100). In 1901 more than 50 percent of the geographical area was under forests whereas in 2011-12 only 38 percent of the total reporting area was under forests. Between 1901 and 1931 Darjeeling's forest area diminished by 6.08 percent, between 1931 and 1961 by 0.61 percent and by 11.95 percent between 1961 and 1991 (Das and Bhuimali, 2011, pp. 148-149). During 2002-03 and 2011-12 the forest area has remained constant. The percentage of arable land on the other hand has increased continuously between 1901 and 1991. While only 20 percent of the total geographical area was arable in 1901, the percentage increased to 56 in 1991; with an increase of 0.62 percent between 1901 and 1931, 11.54 percent between 1931 and 1961, and 24.49 percent between 1961 and 1991 (*ibid*).

Table 3.7: Classification of Land Utilisation Statistics, Darjeeling District, 2007-08 to 2011-12 in thousand hectares

Year	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2007-08	325.47	124.57	37.22	2.38	0.83	2.00	1.80	3.82	12.15	140.70
2008-09	325.47	124.57	39.88	2.48	0.87	2.21	1.67	3.75	17.53	132.51
2009-10	325.47	124.57	40.16	2.14	1.13	2.33	1.55	3.65	17.67	132.27
2010-11	325.47	124.57	40.53	2.46	0.83	2.35	1.49	3.22	16.44	133.58
2011-12	325.47	124.57	38.62	2.57	0.57	2.64	1.31	3.18	17.36	134.65

Source: GoWB, 2014 (District Statistical Handbook, Darjeeling , 2012) (1) Reporting Area (2) Forest Area (3) Area under Non-agricultural use(4) Barren & unculturable land (5) Permanent pastures & other grazing land(6) Land under Misc. tree groves not included in Net area sown (7) Culturable waste land (8) Fallow land other than Current fallow (9) Current fallow (10) Net area sown.

In the Darjeeling Hills the problems related to the land use is the high density of population. Since the scope for extension of agricultural land is limited, there is increasing pressure on

forested and other restricted land to cope up with the increasing demand for food. Another problem is that the carrying capacity of the roads has never been examined with respect to geology etc. The increase in vehicular traffic in recent years due to expansion of trade and commerce along with heavy rainfall has contributed to the frequent landslides especially along the roadsides (www.darjeeling.gov.in). The classification of land utilization is shown in Table 3.7.

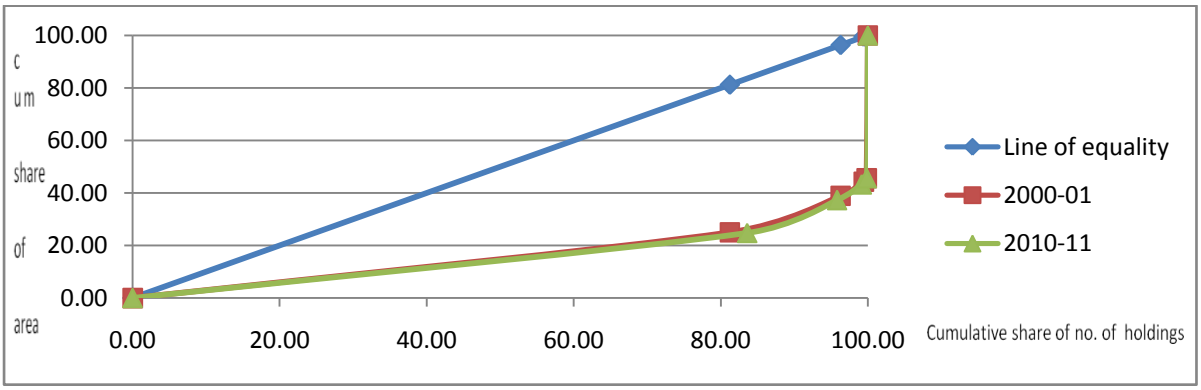
3.4.3.5. Economic Structure of Land Holdings

The distribution and structure of operational holdings (Table 3.8) in the district clearly reveals inequality in the distribution of holdings. Table 3.8 shows that more than 95 per cent of the total holdings are under small and marginal farmers who own 37 percent of the total operated area. The percentages have not shown much variation over the decade.

Table 3.8: Distribution of Operational Holdings over Size-class, Darjeeling, 2000-01 to 2010-11

Size-Class in hectare	Number			Area		
	2000-01	2005-06	2010-11	2000-01	2005-06	2010-11
Marginal	81.22	83.21	83.59	25.33	25.01	24.77
Small	15.08	12.58	12.22	13.57	12.77	12.52
Semi-medium	3.15	3.67	3.37	5.35	6.28	5.97
Medium	0.38	0.40	0.67	1.38	1.48	2.38
Large	0.17	0.15	0.14	54.36	54.46	54.36
Total	100	100	100	100	100	100
Total Number	92001	103697	104358	152376	151957	151303
Average size of holdings in hectares				1.66	1.47	1.45

Source: GoWB, 2009b, 2014 (District Statistical Handbook Darjeeling, 2007, 2012). Note: Marginal-Below 1.0 hectare, Small-1.0 hectare and above but less than 2.0 hectares, Semi-medium-2.0 hectares and above but less than 4.0 hectares, Medium-4.0 hectares and above but less than 10.0 hectares, Large-10.0 hectares and above. It includes mostly institutional holdings



Source: Computed by author from GoWB, 2009b, 2014 (District Statistical Handbook Darjeeling, 2007, 2012).

Figure 3.3: Land Holding Structure, Darjeeling District, 2000-01 and 2010-11

The Lorenz curve for number and area of land holdings for the years 2000-01 and 2010-11 is shown in the Figure 3.3 which exhibits the predominance of small and marginal peasantry where a small proportion of total peasants are controlling a significant share of total area.

3.5. DEMOGRAPHY

The status of women of any region can be better understood by an analysis of the demographic attributes of that region viz. fertility, mortality, marriage, migration and social mobility, as these attributes "shape the size and composition of human population" and have a strong influence on the quality of life and the social position of women (Banerjee and Mukherjee, 2005, p. 21). Banerjee and Mukherjee, further mention that there is a two-way relation between women's experiences of empowerment (or disempowerment) and the demographic characteristics with each influencing the other (*ibid*).

3.5.1. Growth of Population

The growth of Darjeeling district is a remarkable example of population expansion that has ever been recorded in Bengal (O' Malley, 1907, p.35). When it was first acquired by the East India Company in1835 from the Raja of Sikkim it was mostly covered by forest and the population comprised of only "100 souls" on an area of 138 square miles (*ibid*). The low population may have been due to the heavy forest, poor communications and "a primitive system of government which countenanced slavery" and did not promote development (Dash, 1947, p.49). The onus of altering the present state of affairs rested with Dr. Campbell, the first Superintendent whose main objective was to encourage the settlement of the neighbouring tribes and to promote Darjeeling as the commercial centre of the hills. Dr. Campbell was successful in his endeavours and by 1850 he reported that the number of inhabitants had risen to 10,000 (O' Malley, 1907, p.35). Prior to 1872, enumeration of the population of the entire district had not been carried out. A rough census of Darjeeling Municipality undertaken in 1869 gave a total population of 22,607 persons with the number of males being14,766 and females 7,841 (Hunter, 1876, p.24).

Prior to 1860 there were some annexations and addition of territory to the Darjeeling hill tract along with the Terai. The exact population of the Terai was not known but the 1872 Census showed the total population of the Terai to be 47,985 (Dash, 1947, p. 49). After the Bhutan War of 1865, the Kalimpong sub-division was also annexed, whose population was estimated to be 3,536. In 1881 its population stood at 12,683 which show considerable immigration since annexation (*ibid*).

The first regular Census of the district after the annexations was complete and the district thus constituted was carried out in 1871-72 (*ibid*). The total population stood at 94,712 with the number of males being 53,057 and females 41,655 respectively dwelling in 18,864 houses with the average density of population being 77 per square mile (Hunter, 1876, p. 25). The total population and the decadal growth in population in the district and the state of West Bengal are shown in the Table 3.9.

Table 3.9: Population and Decadal Variation in Population, Darjeeling and West Bengal, 1872-2011

Year	Population		Decadal Variation (Absolute)		Decadal Variation (Percentage)	
	Darjeeling	West Bengal	Darjeeling	West Bengal	Darjeeling	West Bengal
1901	2,65,780	169,40,088	-	-	-	-
1911	2,79,899	179,98,769	14,119	10,58,681	5.3	6.3
1921	2,94,237	174,74,348	14,338	-5,24,421	2.1	-2.9
1931	3,32,061	188,97,036	37,824	14,22,688	12.9	8.1
1941	3,90,899	232,29,552	58,838	43,32,516	17.7	22.9
1951	4,59,617	262,99,980	68,718	30,70,428	17.6	13.2
1961	6,24,640	349,26,279	1,65,023	86,26,299	35.9	32.8
1971	7,81,777	443,12,011	1,57,137	93,85,732	25.1	26.9
1981	10,24,269	545,80,647	2,42,492	102,68,636	31	23.2
1991	12,99,919	680,77,965	2,75,650	134,97,318	26.9	24.7
2001	16,09,172	801,76,197	3,09,253	120,98,232	23.8	17.8
2011	18,46,823	912,76,115	2,37,651	110,99,918	14.8	13.8

Source: Census of India website-www.censusindia.gov.in A-2 Decadal Variation in Population since 1901

The population of the District increased manifold during 1872-1881. This large increase has been attributed partially to "the incompleteness and inaccuracy of the first census" and mostly to the development of the tea industry and the opening of new tea estates; the influx of settlers to cultivate the wastelands of the district; improvements in communications due to building of roads and railways which facilitated development and encouraged educational activity. The importance of the tea industry on the growth of the population of the district may be judged from the fact that in 1872 there were only 74 tea gardens with an area of 14,000 acres. This number increased to 153 tea gardens with total acreage being 30,000 in 1881. The local labour being insufficient to meet the demands of the highly labour intensive tea industry, large scale immigration from the neighbouring areas of Nepal ensued which caused the population to increase by large numbers. The development of the tea industry also led to increase in the number of Europeans as supervising staff. The influx of agriculturists is

apparent from the expansion of population of Kalimpong which had a population of 3,530 in 1865 when it was annexed from Bhutan which increased to 12,683 in 1881 and to 26,631 in 1891 which can be attributed entirely to the immigration of agriculturists (O'Malley, 1907, pp. 35-37; Dash, 1947, p. 50). After 1891 the tea industry experienced depression which may be responsible for the decline in the growth of population. Immigration may also have steadied (Dash, 1947, p. 50).

After 1941 the population shows a sharp increase. This may be attributed to the fact that since the figures after 1951 were drawn from the Census of India, it included the population of a part of Phansidewa area which belonged to Bihar and also to West Dinajpur until 1959 (Subba, 1985, p.10). The growth rate of population has however been declining since the 1980s. Another trend worth mentioning is that the growth rate of population of the district is higher than that of the State. Subba mentions three important factors among others which have led to greater increase in urban population of the district as compared to that of the state which may be the reason for the higher growth rate of total population in the district- the large influx of Tibetans after the Chinese annexation of Tibet, in migration of the non-Nepalese communities like Marwaris, Biharis, etc. and the out migration of the members of rural agricultural households to urban areas in search of jobs, education etc. (*ibid*, p.11). An important feature of the population growth in the district especially up to 1901 is that the growth has been exogenous and not endogenous (Dasgupta, 1990, p. 10), and is a remarkable example of population growth caused due to in migration (Das & Bhuimali, 2011, p. 38).

The Darjeeling district comprises of three sub-divisions which lie in the hill areas- Darjeeling Sadar, Kalimpong and Kurseong, and Siliguri sub-division which lies in the plains. The Darjeeling Hills occupy an area of 2,477.83 square kms and had a population density of 353 persons per square kilometer according to 2011 Census. The Table 3.10 shows the population of the district and the population of the hill region as a percentage of the district.

The three hill sub-divisions together accounted for more than half (almost 53 percent) of the population of the district in 1991 which declined to 49 and 47 percent respectively in 2001 and 2011. The decline in the proportion of the hill population may be an indication of migration of the hill population to the lowland areas or an in migration from the surrounding states or countries to the Siliguri sub-division of the district. Almost 58 percent of the district's rural population resided in the hills in 1991 which has gradually declined to 53 and 52 percent respectively in 2001 and 2011. Since more than 50 percent of the district's rural population resides in the hill areas the hill economy is primarily rural. As regards the urban

population, the hills comprised about 41 percent of the district's urban population in 1991 which increased slightly to 41.24 percent in 2001 but again declined to 40 percent in 2011. The proportion of the district's female population residing in the hills is greater than the proportion of the male population in both rural and urban areas which may again be an indication of male outmigration from the hill areas.

Table 3.10: Population of Darjeeling Hills as a Percent of District, 1991-2011

Year	1991			2001			2011		
	Person	**Male**	**Female**	**Person**	**Male**	**Female**	**Person**	**Male**	**Female**
Total									
Darjeeling District	1299919	679323	620596	1609172	830644	778528	1846823	937259	909564
Darjeeling Hills	684818	351881	332937	790591	401520	389071	875703	440257	435446
As Percent of District	52.68	51.8	53.65	49.13	48.34	49.98	47.42	46.97	47.87
Rural									
Darjeeling District	903859	467324	436535	1088740	556633	532107	1118860	566965	551895
Darjeeling Hills	522475	267871	254604	575940	290521	285419	583639	294454	289185
As Percent of District	57.8	57.32	58.32	52.9	52.19	53.64	52.16	51.94	52.4
Urban									
Darjeeling District	396060	211999	184061	520432	274011	246421	727963	370294	357669
Darjeeling Hills	162343	84010	78333	214651	110999	103652	292064	145803	146261
As Percent of District	40.99	39.63	42.56	41.24	40.51	42.06	40.12	39.37	40.89

Source: *Census of India, 1991-2011 (Census of India website-www.censusindia.gov.in)*

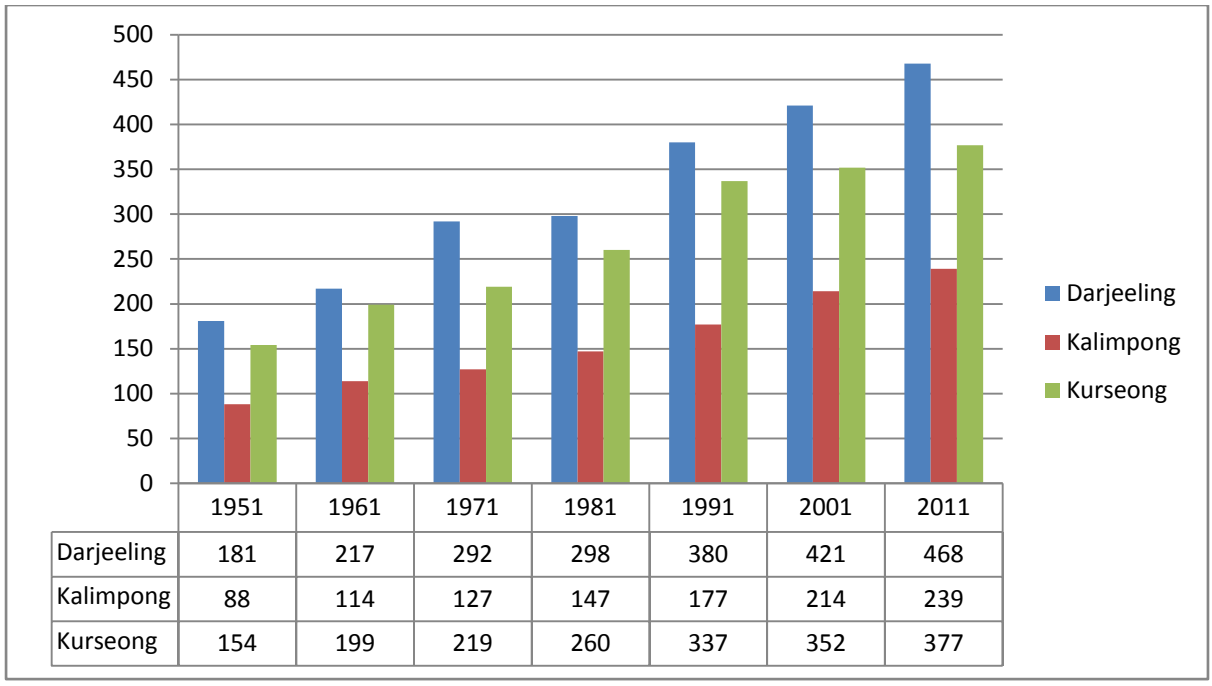
3.5.2. Population Density

O' Malley (1907) mentions that in the first regular census of the Darjeeling district undertaken in 1871-72 the average density of population was 81 per square miles. He further mentions that the district as a whole, was very sparsely populated with only 214 persons per square mile by 1901. However if the 38 percent of the total area which is occupied by reserved forests is excluded the density will rise to 346 persons per square mile (O' Malley, 190, pp. 35, 38). However the density has been increasing continuously over the years and stands at 586 per square km according to 2011 Census (Table 3.11). During the seventy years since 1941 to 2011 the population density has increased almost five times. Among the three hill sub-divisions the highest population density can be found in Darjeeling Sadar sub-division followed by Kurseong and Kalimpong (Figure 3.4).

Table 3.11: Density of Population of Darjeeling District, 1901-2011

Year	1901	1921	1941	1961	1981	1991	2001	2011
Density of Population per square km	208*	236*	314*	497*	325	413	511	586

Note: persons per square mile.*
Source: Data upto 1961- Das and Bhuimali, 2011, pp. 43-44. Data for 1981-calculated from Primary Census Abstract Darjeeling District, 1981.Data for 1991-2011-calculated from Census of India, 1991-2011 (Census of India website-www.censusindia.gov.in)



	1951	1961	1971	1981	1991	2001	2011
Darjeeling	181	217	292	298	380	421	468
Kalimpong	88	114	127	147	177	214	239
Kurseong	154	199	219	260	337	352	377

Source: Data for 1951-1971-Sanyal (1986). Data for198-Compiled from Primary Census Abstract, Darjeeling Data for 1991-2011- Compiled from Census of India, 1991-2011 (Census of India website-www.censusindia.gov.in)

Figure 3.4: Density of Population per square km, Darjeeling Hills, 1951-2011

3.5.3. Urbanization

"From a sociological point of view urbanisation means the spread of urbanism" which is regarded as a phenomenon that "automatically leads to a substantial transformation in a person's way of life such as changes in attitudes, values or behavioural patterns" (Chatterjee, 2006 cited in Das, 2014, p. 79). The development of Darjeeling as a hill station leading to urbanization began with the establishment of a sanatorium by the British army personnel. However, the real catalyst was the establishment of the tea gardens which gave birth to Darjeeling town along with popular towns like Kurseong and Kalimpong (Das, 2014, p.79). The emergence of Mirik as a new town in the later decades is also an extension of tea garden and tourist centre (Desai, 2014, p. 146). The physical configuration of the Darjeeling

Himalayas which is comprised of hills, ridges, spurs and deep valleys has also greatly influenced the development and distribution of urban settlements in the region, producing a settlement pattern markedly different from the rest of the state (Dasgupta, 1986).

West Bengal belongs to the group of states which is relatively more urbanised with the state average being slightly higher than the all India average. The North Bengal region to which the district belongs has 18.70 percent of population residing in urban areas. With the exception of the districts of Darjeeling and Jalpaiguri the other districts of the region have low proportion of urban population. It has been noted that the level of urbanisation in the Darjeeling Hills soared from 17.24 percent in 1971 to 21.59 percent in 1981 (Das, 2014, p. 80). Further, the Darjeeling hill areas has had a very high growth in the level of urbanisation, as such it has become the most urbanised of all hill urban areas of the Eastern Himalayas (*ibid*). Table 3.12 shows the percentage of urban population in the Darjeeling Hills, Darjeeling district and West Bengal for 1991-2011.

The proportion of urban population shows an increasing trend in the hills, district, the state and the entire country since 1991. In the Darjeeling district a little less than 40 percent of the population resides in urban areas according to 2011 Census.

Table 3.12: Percentage of Urban Population in Darjeeling Hills, Darjeeling District and West Bengal, 1991-2011.

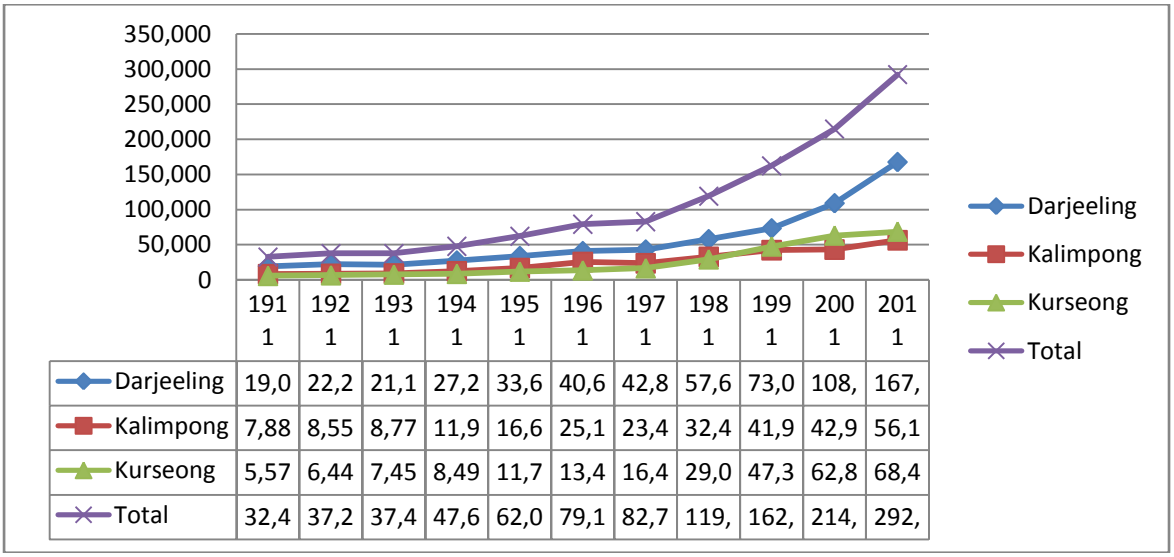
Years	1991			2001			2011		
	Person	**Male**	**Female**	**Person**	**Male**	**Female**	**Person**	**Male**	**Female**
Darjeeling Hills	23.71	23.87	23.53	27.15	27.64	26.64	33.35	33.12	33.59
Darjeeling District	30.47	31.21	29.66	32.34	32.99	31.65	39.42	39.51	39.32
West Bengal	27.48	28.35	26.53	27.97	28.58	27.32	31.87	31.97	31.77
India	25.73	26.18	25.25	27.82	28.29	27.31	31.14	31.37	30.91

Source: Compiled from Census of India, 1991-2011 (Census of India website-www.censusindia.gov.in)

The percentage of urban population in the hill areas is however 33 percent in 2011 which is lower than that for the district. The hill areas as well as the district however, show higher percentage of urban population compared to the state and the entire country. Among the three hill sub-divisions, Darjeeling sub-division has a larger number of urban population in comparison to Kurseong and Kalimpong sub-division (Figure 3.5). The increase in the percentage of urban population is higher for the females as compared to the males between 2001-2011 for the Darjeeling district including the hills as well as for the state and the country. The character of male and female urbanization is significantly different as the

reasons for their migration to urban areas may not be the same. While men migrate in search of better employment opportunities, women migrate when they marry or when the whole family migrates. They seldom do so in search of better employment opportunities (Mehrotra, cited in Banerjee and Mukherjee, 2005).

The increasing population density and the rates of urbanisation are associated with numerous problems related to lack of civic amenities like sanitation, water supply, growth of slums, and increase in criminal activities etc. which adversely affect the quality of life of the women folk and their status (*ibid*). Desai (2014) notes that most of the hill towns, almost 70 percent are small in character but accommodate less than 40 percent of the urban population (Desai, 2014, p. 148) which is an indication of the growing urban density. In Darjeeling hill areas too medium and small towns are expanding quite rapidly. Urbanisation in the Darjeeling hills, notes Dasgupta (1986), is characterised by "uncontrolled and unplanned haphazard growth, mushrooming of squatter colonies through illegal and forceful occupation of land, inadequate urban facilities like water supply, sewerage etc. and congested and unhealthy living conditions" with negative impacts on the health and quality of life of the people including women living in these areas.



	1911	1921	1931	1941	1951	1961	1971	1981	1991	2001	2011
Darjeeling	19,0	22,2	21,1	27,2	33,6	40,6	42,8	57,6	73,0	108,	167,
Kalimpong	7,88	8,55	8,77	11,9	16,6	25,1	23,4	32,4	41,9	42,9	56,1
Kurseong	5,57	6,44	7,45	8,49	11,7	13,4	16,4	29,0	47,3	62,8	68,4
Total	32,4	37,2	37,4	47,6	62,0	79,1	82,7	119,	162,	214,	292,

Source: Data for 1911-1971-Compiled from Dasgupta, 1986. Data for 1981-Primary Census Abstract, Darjeeling, 1981. Data for 1991-2011-Compiled from Census of India, 1991-2011 (Census of India website-www.censusindia.gov.in)

Figure 3.5: Growth of Urban Population, Darjeeling Hills, 1911-2011

Further, the proliferation of the township along downward slopes has made the region prone to natural calamities like landslides (Maitra, 1986). It has been mentioned by Haigh and

Vallely (2010) that both in developing and developed countries, there is evidence to suggest that women are more likely to die as a result of natural calamities due to climate change, and if they survive, suffer more in the aftermath due to heavier burden of workload in the process of rebuilding their households. The many challenges that women face as a consequence of natural disasters may in turn affect their ability to return to paid employment, since women are generally concentrated in the informal sector, which often suffers most when disasters strike and recovers the slowest (Masika, 2002 cited in Haigh and Vallely, 2010).

The disproportionate growth of urban settlements in the Darjeeling hill region has led to an increase in demand for employment along with social and civic services of a very large magnitude which cannot be provided by the resources of this region (Maitra, 1986). The problems of unemployment, stagnation and low income which are the inevitable consequences of urbanisation have also fuelled the flames of political upheavals in the region (*ibid*). Since the hill towns and cities have not emerged due to planned intervention but expanded as trade centres, their expansion needs to be controlled and must be in an environmentally sustainable manner (Desai, 2014, p. 148).

3.5.4. Age Distribution of Population

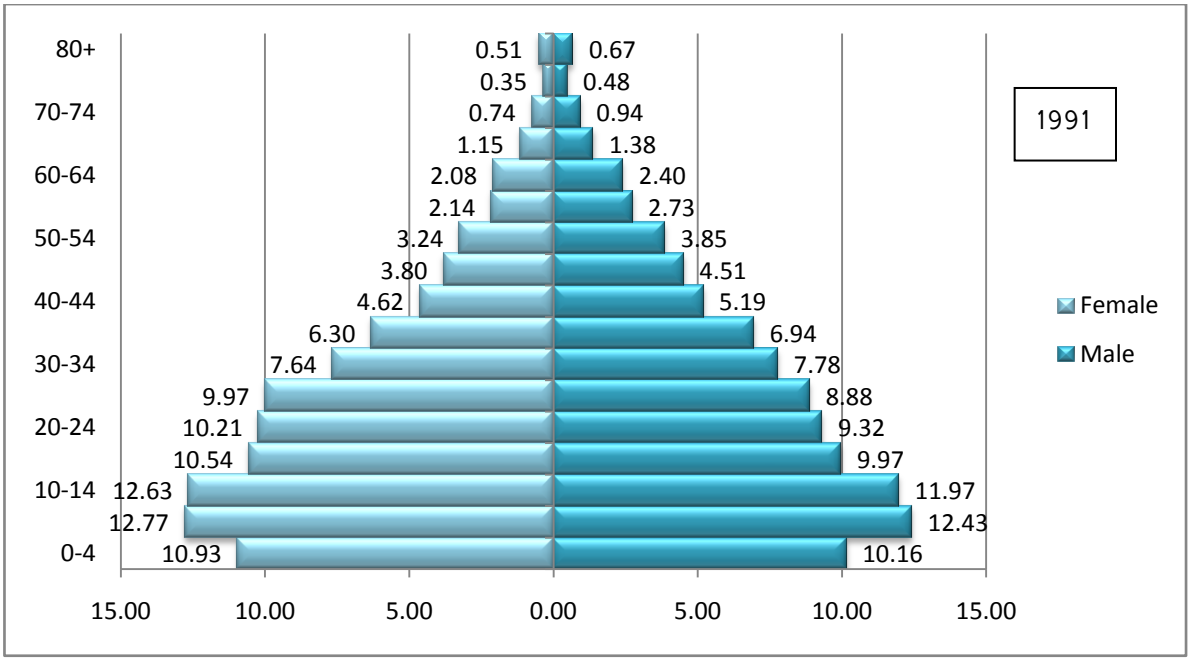
Besides the total size, the age and sex structure of the population is an important demographic characteristic of the population as it determines the future growth potential of an economy, besides being a basic determinant of a nation's supply of manpower and influences requirements for essential goods and services (Premi, 2006, p. 103). The sex-age structure of a population at any time is the result of past levels of fertility, mortality and migration and has an effect on present levels of birth and death rates and rate of future population growth rates (*ibid*). As a consequence of the demographic transition that almost all countries pass through which is characterised by decline in death rates faster than decline in birth rates, a country's population may grow rapidly with a higher proportion of the younger age groups. However, within a period of 15-25 years the younger age population reaches the working age and the productive capacity of the economy expands and demographic dividends may be reaped in the form of increase in the size of the labour force and its repercussions on the economy due to increased human and physical capital formation. For women it may imply an increase in workforce participation due to decline in fertility (Bloom, 2011). India, passing through this stage of demographic transition has one of the largest proportions of population in the younger age groups. Due to this large base India has high potential for future growth though it may take another 20-30 years for the population to become stationary.

Table 3.13: Percentage Distribution of Population by Age Group, Darjeeling District, 1991- 2011

Age Group	1991		2001		2011	
	M	F	M	F	M	F
0-4	10.16	10.93	8.29	8.56	7.11	7.01
05-09	12.43	12.77	10.84	10.95	8.91	8.71
10-14	11.97	12.63	12.11	12.24	10.24	10.13
15-19	9.97	10.54	10.71	10.78	10.3	10.1
20-24	9.32	10.21	9.04	10.11	9.68	10.34
25-29	8.88	9.97	8.43	9.58	9.24	9.92
30-34	7.78	7.64	7.76	7.89	7.89	8.29
35-39	6.94	6.3	7.65	7.59	7.66	8.08
40-44	5.19	4.62	6.25	5.47	6.8	6.61
45-49	4.51	3.8	5.09	4.54	5.75	5.6
50-54	3.85	3.24	3.84	3.39	4.87	4.47
55-59	2.73	2.14	2.81	2.45	3.5	3.25
60-64	2.4	2.08	2.38	2.28	2.89	2.76
65-69	1.38	1.15	1.81	1.66	1.98	1.81
70-74	0.94	0.74	1.27	1.1	1.42	1.28
75-79	0.48	0.35	0.65	0.52	0.79	0.7
80+	0.67	0.51	0.77	0.72	0.84	0.83
ANS	0.4	0.38	0.31	0.17	0.13	0.12
Total	100	100	100	100	100	100

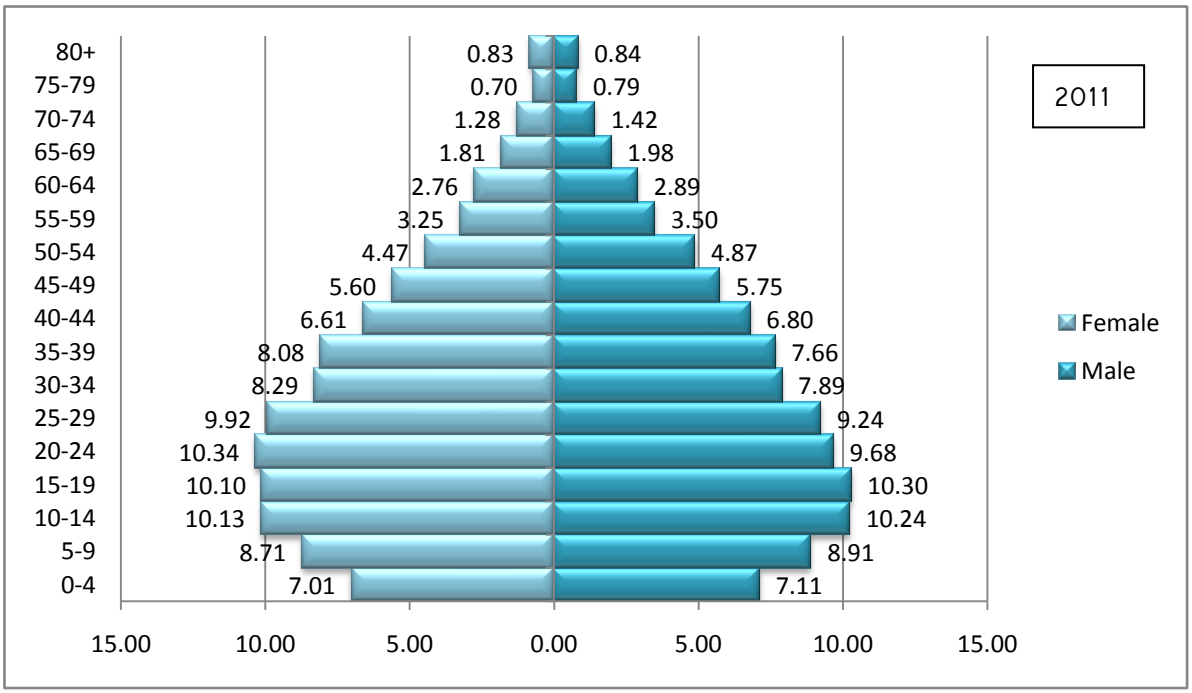
Source: Complied from Census of India, 1991-2011 (Census of India website-www.censusindiagov.in).
Note: M-Male, F-Female

The age structure of a population is generally represented in five yearly age groups. Table 3.13 which shows the age-sex structure of the population for the Darjeeling district reveals that the share of population in the age groups 0-4, 5-9 and 10-14 years has shown a decline between 1991-2011 except for the 10-14 age group for males which has shown a slight increase between 1991-2011. The decline in the share of the child population could be attributed to the declining birth rates. This decline also implies a decline in the child dependency rate. The share of the adult population i.e. most of the age groups between 15-59 years has shown an increase. This is the population in the working age group and increase in their share could mean an increase in work participation rates. The share of the aged population has also shown a continuous increase since 1991 which could be the result of increase in life expectancy. This also increases the dependency ratio and calls for social security measures for the older section especially women since women in the older age group form a vulnerable social group as they may be jobless or widowed or without any kinship and may be subject to illness and poor health (Banerjee and Mukherjee, 2005).



Source: Compiled from Census of India, 1991 (Census of India website-www.censusindia.gov.in)

Figure 3.6: Age-Sex Pyramid, Darjeeling District, 1991



Source: Compiled from Census of India, 2011 (Census of India website-www.censusindia.gov.in)

Figure 3.7: Age-Sex Pyramid, Darjeeling District, 2011

3.5.5. Sex Ratio

Sex ratio defined as the number of females per thousand males is an important indicator of gender development and the relative status of women in the society as it can be used to assess

relative excess or deficit of men or women in a given population at that point of time. It has also been regarded as an indicator of inequality in intra-household allocation between boys and girls (Dreze and Sen, 1995, p.144). It also provides information about the present settlement pattern of an area besides being an indicator of future demographic pattern, with a high sex ratio indicating a stable settlement and a lower sex ratio a male dominated settlement pattern which is indicative of a migratory population (Desai, 2014, p. 146). The population sex ratio depends on three factors: the sex ratio at birth, differential mortality rates between men and women at different ages, and losses and gains through migration (Coale, 1991, cited in Hesketh and Xing, 2006). Sex ratio at birth favours males but females being more resistant to diseases have greater overall longevity; which implies that in the absence of discrimination in access to health care and nutrition females have lower morality across all age groups (Sen, 1992 cited in Hesketh and Xing, 2006). However, the deficit of women in the population is evidence of the discrimination that women face in their capacity to survive which according to scholars is the outcome of a complex nexus of socio-cultural forces which come into play right from the time of conception and continue even after birth (Banerjeee and Mukherjee, 2005) due to the tradition of son preference. The discrimination against women is manifested in their unequal access to "life supporting resources such as food, nutrition and health care, especially during childhood" (Som and Mishra, 2014).

Many parts of the Third World have sex ratios well below unity in contrast to Europe and North America (Dreze and Sen, 1995, p. 141). India is one of the several Asian countries with low sex ratios although there have been improvements in the different Census years. However there are inter-regional variations in sex ratio in the country with the southern states particularly Kerala showing better status of women as compared to large parts of north India, especially the north-western states (Banerjeee and Mukherjee, 2005). This is a reflection of the character of gender relations in different parts of the country (Dreze and Sen, 1995, p. 142). West Bengal's sex ratio has never been better than that of India as a whole which has been attributed partly to the migration of males from surrounding areas for purpose of employment. However when the sex ratio was adjusted for migration it was found to show considerable improvement and stood close to the all India level (Banerjeee and Mukherjee, 2005). Darjeeling district has shown an alternate rise and fall in the sex ratio since 1901 and has a lower sex ratio than most of the hill areas of North-East India and the averages for West Bengal and India which points to the presence of floating migratory population in Darjeeling (Dasgupta, 1990, p. 15). Darjeeling district's sex ratio has shown an improvement during 2001 and 2011 and is higher than that for West Bengal and India which could point to out

migration of males from the district to cities and towns for better employment opportunities. The out migration of male increases the work burden of the women folk left behind in domestic as well as care activities as substantiated by several studies.

Table 3.14: Sex Ratio in Darjeeling Hills, Darjeeling District, West Bengal and India, 1901-2011

Years	Darjeeling	Darjeeling	West Bengal	India
1901	-	876	-	972
1911	-	871	-	964
1921	-	898	-	955
1931	-	881	-	950
1941	-	884	-	945
1951	-	863	865	946
1961	-	864	878	941
1971	-	862	891	930
1981	924	893	911	934
1991	946	913	917	927
2001	969	937	934	933
2011	989	970	950	943

Source: Data for Darjeeling District 1901-1981- Dasgupta, 1990, p. 14. Data for West Bengal and India for 1971 and 1981-Banerjee and Mukherjee, 2005. Data for Darjeeling, West Bengal and India for 1991-2011-Compiled from Census of India, 1991 (Census of India website-www.censusindia.gov.in) Data for West Bengal 1951-1961-Som and Mishra, 2014.Data for India 1901-61-Premi, 2006.

Child sex ratios (CSR) are considered to be better than the overall sex ratio in indicating the status of women as it is not affected by sex-selective migration (Som and Mishra, 2014). The CSR reflects the discrimination that children are subjected to prior to birth through sex-selective abortion of female foetuses, and after birth through infanticide and subsequent neglect of females in the later years. The sex ratio was calculated separately for the age groups 0-6 years and 7 years and above for the first time in the 1991 Census (Premi, 2006, p. 106). From Table 3.15 it is clear that the CSR is showing a declining trend from 1991-2011 for the district as well as the state and India though the district fares better than the state and the country. The declining CSR is not a welcome trend and is indicative of the gender discrimination in the early years of life. It may also result in demographic imbalance over time.

Table 3.15: Child Sex Ratio (0-6 years) Darjeeling District, West Bengal and India,1991-2011

Years	Darjeeling	West Bengal	India
1991	976	967	945
2001	962	960	927
2011	952	956	919

Source: Compiled from Census of India, 1991-2011(Census of India website-www.censusindia.gov.in)

3.5.6. Literacy Rate

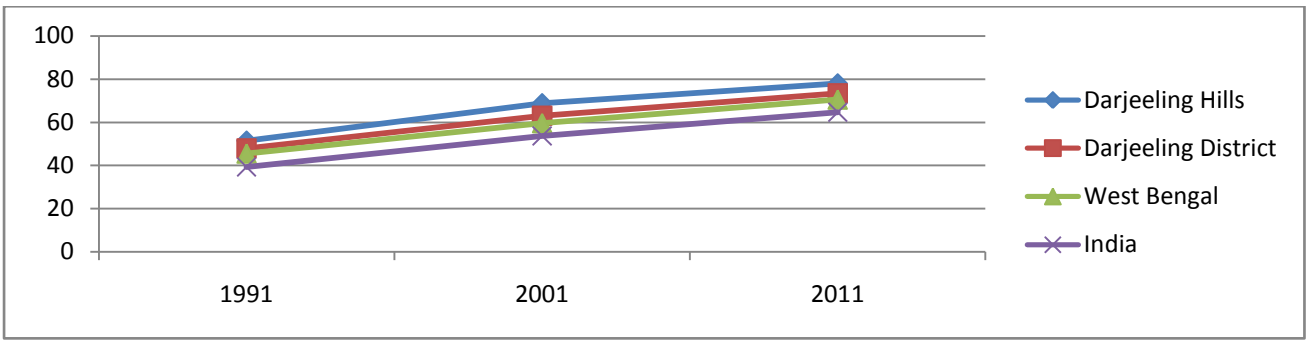
Access to education, particularly basic education is of crucial importance in achieving economic development (Dreze and Sen, 1995) as being educated strengthens other dimensions of human development by expanding the choices people make. Being literate, according to Dreze and Sen is instrumental in self-defence since social interaction often involves the written media, and basic education acts as "a catalyst of social change" (Dreze and Sen, 1995, p. 109). The World Bank has also acknowledged the importance of education as is apparent in the Bank's statement according to which education, especially basic education is an important means of poverty reduction which can be achieved by increasing the productivity of the poor, improving health, reducing fertility and equipping people with the necessary skills which enables them to participate fully in economy and society (World Bank 1995, p. 1). In this context female literacy rates are even more significant in determining the overall status of women and their family members especially the girl children. Women's education is known to have positive impacts on social, human and economic development as it leads to late marriage, lower levels of fertility, low maternal and child mortality rates and lower population growth in the long run. Women's education also helps to achieve women's social, economic and political empowerment. Investment in female education as an important development strategy has thus been emphasised by the World Bank due to its high rates of social return (Oxaal, 1997). However, it is only recently that female education has been recognized as a social issue in India, with female literacy gaining prominence only during the twentieth century (Dreze and Sen, 1995, pp. 132-133). Educational attainment is measured by levels of literacy generally defined as the percentage of literate population above the age of six years. According to the Human Development Report, 1990 although the figures for literacy only crudely reflect access to education, it is nonetheless "a person's first step in learning and knowledge-building", so literacy rates are an important component of any measure of human development (UNDP, 1990, p. 12).

Table 3.16: Literacy Rate, Darjeeling Hills, Darjeeling District, West Bengal and India, 1991-2011

Years	1991			2001			2011		
	Person	Male	Female	Person	Male	Female	Person	Male	Female
Darjeeling	61.4	70.8	51.4	77.0	85.0	68.8	83.8	89.6	78.0
Darjeeling	58.0	67.1	47.8	71.8	80.1	62.9	79.6	85.6	73.3
West Bengal	57.7	67.8	46.6	68.6	77.0	59.6	76.3	81.7	70.5
India	52.2	64.1	39.3	64.8	75.3	53.7	73.0	80.9	64.6

Source: Compiled from Census of India, 1991-2011(Census of India website-www.censusindia.gov.in)

According to the first census that was carried out in independent India in 1951, only one-fourth of the population of the state was literate (Basak and Mukherjee, 2012). In 2011 however, more than three quarters of the population above the age of seven years are literate. The literacy rate for the Darjeeling hills has been higher than the district average which has also been higher than the state and the all India average for both males and females. The upward trend in the female literacy rates as can be seen from Figure 3.8 is a positive indication. Nevertheless, although the increasing and high levels of female literacy rates indicate improvement in the status of women, its importance should not be over emphasised. It should be analysed with respect to other indicators of women's well being.



Source: Compiled from Census of India, 1991-2011(Census of India website-www.censusindia.gov.in)

Figure 3.8: Trends in Female Literacy Darjeeling, West Bengal and India, 1991-2011

3.5.7. Marital Status

Table 3.17 shows the distribution of male and female population of different age groups by marital status for the period 1991-2011. The table reveals that below 20 years of age there is a larger proportion of male population who are not married as compared to the females. In 2011 while only about 3 percent of the male population below the age of 20 are married, a little less than 10 percent of the female population are married showing that girls are getting married at a younger age than boys. Early marriage leads to early childbirth with adverse impacts on the health of young mothers and their children. In the age group i.e. 20-29 less than 50 percent of the males are married as compared to females in all three Census years whereas more than 70 percent of the female population in that age group was married in 1991 and 2001 which decreased to a little less than 70 percent in 2011. A closer look at the percentage of widowed population reveals that for all age groups the percentage of widowed female population is greater than that for men. For higher age groups there is a higher percentage of female population who are widowed. For the 70+ age group more than 60

percent of the female population is widowed as compared to male population whose percentage is less than 25 percent for all three census years. Widowed women especially in the older age group constitute a vulnerable section since they are in poor health, may not have regular source of income and are dependent on their children or relatives. Separated or divorced population is negligible.

Table 3.17: Distribution of Population by Age Group and Marital Status, Darjeeling, 1991-2011

	Never Married		Married		Widowed		Divorced/Separated	
Age	**Male**	**F**	**M**	**F**	**M**	**F**	**M**	**F**
1991								
10-19	97.82	86.47	2.09	10.18	0.02	0.06	0.05	0.12
20-29	54.36	24.46	45.03	74.36	0.32	0.87	0.28	0.62
30-39	13.34	6.06	85.15	88.80	1.06	3.27	0.44	0.92
40-49	38.75	23.31	59.94	70.50	0.94	3.18	0.35	0.77
50-59	4.20	2.59	88.51	72.96	6.55	22.70	0.74	0.87
60-69	3.31	1.79	82.36	52.74	13.59	43.98	0.74	1.00
70+	8.31	3.03	66.35	28.64	23.94	66.60	1.06	0.40
2001								
10-19	98.03	89.77	1.84	9.89	0.05	0.19	0.08	0.15
20-29	53.94	25.44	45.24	72.64	0.40	1.03	0.42	0.90
30-39	12.94	7.39	84.78	87.32	1.16	3.82	1.13	1.47
40-49	5.50	5.27	90.93	82.76	2.31	10.36	1.27	1.62
50-59	4.25	4.67	88.98	71.15	5.66	22.81	1.12	1.38
60-69	4.36	4.57	81.21	51.79	13.50	42.51	0.93	1.12
70+	6.43	5.23	67.55	33.28	24.99	60.55	1.03	0.93
2011								
10-19	97.26	90.23	2.60	9.45	0.05	0.17	0.08	0.15
20-29	56.83	29.96	42.34	68.28	0.29	0.83	0.54	0.92
30-39	14.19	9.02	83.77	85.77	0.83	3.52	1.20	1.70
40-49	6.31	5.70	90.34	81.86	2.00	10.44	1.36	2.00
50-59	4.61	5.26	89.30	71.05	4.82	21.94	1.26	1.74
60-69	4.38	5.23	83.87	51.69	10.67	41.72	1.08	1.36
70+	5.26	5.58	69.59	31.16	24.09	62.38	1.05	0.88

Source: Compiled from Census of India, 1991-2011(Census of India website-www.censusindia.gov.in)

3.6. CONCLUSION

The present chapter provides a brief introduction of the study area in terms its history, geography, economy and demography as these factors are important in planning and designing policies catering to the precise needs and specificities of the region. The history of Darjeeling, much like the weather presents a record of constant changes with frequent

invasions and conquests by the neighbouring countries like Nepal, Bhutan and Sikkim vying with each other for possession of the region (Das, 2014). In 1840 Darjeeling was officially recognised as a district (*ibid*, p.38), and in 1866 with the final addition of Kalimpong the district reached its present dimensions (Dash, 1947, p. 41).

The physical configuration of the region characterised by ridges and narrow valleys (Dash, 1947) of differing altitudes, the different rivers that drain the region, along with the climatic variations has had a significant effect in the economy of the region. The climate of the region is favourable for tea cultivation, and the tea industry is an important employment provider along with the tourism industry. Besides, agriculture is also a key contributor to the economy of the Darjeeling hills. However, the sectoral composition of the NSDP and NDDP reveals the declining share of the primary and secondary sectors and the increasing share of the tertiary sector for the district.

Agriculture in the region is greatly influenced by the altitude and slope aspect and the methods of cultivation in the hills vary with the crops to be grown. The cropping pattern is affected by the altitude and no crops are grown above 2,895 meters due to the cold. The district has lower productivity levels as compared to the other districts and to the state average for almost all crops which could be attributed to the prevalence of small and marginal holdings which may further be fragmented and scattered; infertile land; poor irrigation facilities and inability to use modern technology. However, in recent years diversification in cropping pattern towards high value cash crops and horticulture and floriculture is taking place which would help achieve higher growth rates in agriculture besides augmenting the income of the farming communities in the region.

An analysis of the demography of the region reveals that the region has been experiencing increasing population density and increasing urbanisation which are associated with numerous problems related to lack of civic amenities like sanitation, water supply, growth of slums, increase in criminal activities, vulnerability to natural disasters like landslides etc. which adversely affect the quality of life of the women folk and their status. The sex ratio in the Darjeeling hills is relatively higher than that for West Bengal and India which could point to out migration of males from the district to cities and towns which lead to increase in women's work burdens. However, the Darjeeling hills witness higher literacy rates in comparison to the district average which has also been higher than the state and the all India average for both males and females which is a positive indication. However, its importance should not be over emphasised and should be analysed with respect to other indicators of women's well being.

Chapter References

- Awasthi, I.C. (2012). *Livelihood diversities in mountain economy: Constraints and opportunities.* New Delhi: Concept Publishing Company Private Ltd.
- Banerjee, N. and Mukherjee, M. (2005). Demography. In J. Bagchi and S. Dutta Gupta (Eds.) *The changing status of women in West Bengal, 1970-2000: The challenge ahead* (pp. 21-32). New Delhi: Sage Publications India Pvt. Ltd.
- Basak, P. and Mukherjee, S. R. (2012). District level variation in literacy rate in West Bengal. *International Journal of Social Science and Interdisciplinary Research, 1* (7), 1-19.
- Bhattacharyya, R. (2008). *Crop diversification: A Search for an alternative income of the farmers in the state of West Bengal in India*. International Conference on Applied Economics ICAOE. Retrieved from https://pdfs.semanticscholar.org/cf73/33975ec5c9bd863108da24f7af3879a90106.pdf
- Bloom, D.E. (2011). *Population dynamics in India and implications for economic growth*. Programme on the Global Demography of Ageing. PGDA Working Paper No. 65.
- Census of India. *A-2 Decadal variation in population since 1901* http://www.censusindia.gov.in/2011census/PCA/A2_Data_Table.html viewed on 12/08/2018.
- Census of India, West Bengal (1981). *District census handbook, series-23 part XIII-B, village and townwise primary census abstract, Darjeeling district.*
- -------- (1991). *Census of India, 1991,* viewed on 12 October, 2017 http://www.censusindia.gov.in
- -------- (2001). *Census of India, 2001,* viewed on 12 October, 2017 http://www.censusindia.gov.in
- -------- (2011). *Census of India, 2011,* viewed on 12 October, 2017 http://www.censusindia.gov.in
- -------- (2011). *District census handbook, Darjeeling 2011, series-20 part XII-A.* Viewed on 12 October 2017 http://www.censusindia.gov.in
- Chakraborty, S. (1986). A geographical sketch of Darjeeling district. In R.L. Sarkar and M. P.Lama (Eds.) *The Eastern Himalayas: Environment and economy* (pp. 3-12). Delhi: Atma Ram and Sons.

- Chattopadhayay, K. S. and Roy, D. (2011). *Impact study of the national horticulture mission scheme in West Bengal*. Report No. 166 Visva-Bharati Santiniketan: Agro-Economic Research Centre.
- Chettry, S. (1999) *Women workers in the informal sector*: *A study of Darjeeling district in West Bengal.* Delhi: Gyan Sagar Publications.
- Darjeeling district website. Retrieved from www.darjeeling.gov.in/ Viewed on 11/09/2018.
- Das, D. (1990). Land utilisation in Eastern Himalaya: A case study of Darjeeling Himalaya. In S.K. Chadha (Ed.) *Himalayas Environmental Problems* (pp. 141-156). New Delhi: APH Publishing Corporation.
- Das, M. and Bhuimali, A. (2011). *Darjeeling hill economy*. Delhi: Abhijeeet Publications.
- Das, N. (2014). *Darjeeling society economy polity*. Sonada and Siliguri: Salesian College Publication.
- Dasgupta, M. (1986). Urbanisation and unemployment in Darjeeling hills. In R.L. Sarkar and Mahendra P.Lama (Eds.) *The Eastern Himalayas: Environment and economy* (pp.594-603). Delhi: Atma Ram and Sons.
- --------- (1990). *Economic development of Darjeeling hill areas: Problems and prospects.* Calcutta: Uttar Publications Pvt. Ltd.
- Dash, A.J. (1947). *Bengal district gazetteer: Darjeeling* (First Reprint, 2011). Siliguri, West Bengal: N. L. Publishers.
- Desai, M. (2014). *Darjeeling the queen of hills: Geo-environmental perception.* Kolkata: K. P Bagchi & Company.
- Dreze, J. and Sen, A.K. (1995). *India: Economic development and social opportunity.* New Delhi: Oxford University.
- *Economic review, West Bengal, 2011-12*. Retrieved from http://www.bengalchamber.com/economics/west-bengal-statistics-2011-2012.pdf
- Government of West Bengal (GoWB). (2005). *District statistical handbook, Darjeeling, 2004.* Bureau of Applied Economics and Statistics, Department of Statistics and Programme Implementation, Government of West Bengal.
- -------- (2006). *Statistical abstract, West Bengal, 2005.* Bureau of Applied Economics and Statistics, Department of Statistics and Programme Implementation, Government of West Bengal.

- -------- (2009a). *Statistical abstract, West Bengal, 2008.* Bureau of Applied Economics and Statistics, Department of Statistics and Programme Implementation, Government of West Bengal.
- -------- (2009b). *District statistical handbook, Darjeeling, 2007.* Bureau of Applied Economics and Statistics, Department of Statistics and Programme Implementation, Government of West Bengal.
- -------- (2014). *District statistical handbook, Darjeeling, 2012.* Bureau of Applied Economics and Statistics, Department of Statistics and Programme Implementation, Government of West Bengal.
- --------- (2015). *State domestic product and district domestic product of West Bengal, 2013-14*. Bureau of Applied Economics and Statistics, Department of Statistics and Programme Implementation, Government of West Bengal.
- Haigh, C. and Vallely, B. (2010). *Gender and the climate change agenda: The impacts of climate change on women and public policy.* Women's Environmental Network. Retrieved from https://www.gdnonline.org/resources/Gender%20and%20the%20climate%20change%20agenda%2021.pdf Viewed on 22/11/2014.
- Hesketh, T. and Xing, Z. W. (2006). Abnormal sex ratios in human population: Causes and consequences. *PNAS, 103* (36), 13271–13275.
- Hunter, W.W. (1876). *A statistical account of Darjeeling* Reprinted (2012). Siliguri: N. L. Publishers.
- Jodha, N. S. (1991). Sustainable agriculture in fragile resource zones: Technological imperatives. *Economic and Political Weekly, XXVI* (30), A15-A25.
- Lama, B. B. (2008). *Through the mists of time the story of Darjeeling: The land of Indian Gorkha.* Kurseong: Bhawani Offset Printing and Publication.
- Maitra, D. K. (1986). The inter-relationship of growth of settlement and population in hill areas of Darjeeling. In R.L. Sarkar and M. P. Lama (Eds.) *The Eastern Himalayas: Environment and economy* (268-273). Delhi: Atma Ram and Sons.
- Mamgain, R. P. (2004*). Employment, migration and livelihoods in the hill economy of Uttaranchal.* (Doctoral thesis, Centre for the Study of Regional Development, School of Social Sciences, Jawaharlal Nehru University, New Delhi). Retrieved from https://mpra.ub.uni-

muenchen.de/32303/1/Employment_Migration_and_Livelihoods_in_Uttarakhand-R_P_Mamgain.pdf

- O' Malley, L. S. S. (1907). *Bengal district gazetteers: Darjeeling*. (Reprinted 1999) New Delhi: Logos Press.
- Oxaal, Z. (1997*). Education and poverty: A gender analysis.* Report No.53. Report prepared for the Gender Equality Unit, Swedish International Development Cooperation Agency (Sida). UK: BRIDGE Institute of Development Studies.
- Partap, T. (1995). *High value cash crops in mountain farming mountain development processes and opportunities*. ICIMOD Discussion Paper Series No. MFS 95/1. Kathmandu, Nepal, International Centre for Integrated Mountain Development.
- Premi, M. K. (2006). *Population of India in the new millenium: Census 2001*. New Delhi: National Book Trust.
- Rai, B. (2008). *Khambus (Rais): Their retold accounts.* Namchi, South Sikkim: Nirman Prakashan.
- Roy, B. (n. d). *Encyclopaedia Darjeeling*. Kolkata: Mandalay Books India (P) Ltd.
- Sanyal, B. M. (1986). The impact of economic development on structural composition of workforce in Darjeeling hill areas. In R.L. Sarkar and M. P.Lama (Eds.) *The Eastern Himalayas: Environment and economy* (583-593). Delhi: Atma Ram and Sons
- Som, K. S. and Mishra, R. P. (2014). Gender imbalance: Trends, pattern and its impact on West Bengal. *International Journal of Scientific and Research Publications, 4* (7), 1-10.
- Subba, T. B. (1985). *The quiet hills: A study of agrarian relations in hill Darjeeling.* Delhi: Cambridge Press.
- United Nations Development Programme (UNDP) (1990). *Human development report, 1990.* United Nations Development Programme, New York: Oxford University Press.
- World Bank. (1995). *Development in practice: Priorities and strategies for education.* Washington DC: World Bank.