

Chapter 4

Site, Situation and Functional Characteristics of Settlements in the Rammam Basin

4.1. Introduction

The origin of a settlement depends on a site – a particular place suitable for habitation purpose. Paul Vidal Da La Blasch (1926) in his book ‘Principles of Human Geography’ wrote “there is a great variety of human establishments, but they should be studied from every angle in order to give each element its due. The first to be considered is that of the site, for it is the one in which geographical influences seem to stand out most prominently”.

Situation, on the other hand, refers to the relationship between a settlement and the settlements in its immediate vicinity through a variety of links (Singh, 2013, p.90). It also refers to the centrality or accessibility of a settlement within the vast region. The settlements located at the nodal points always enjoy its situation and grow faster due to their better connectivity to the surrounding areas. The origin, growth and decay of any settlement thus depend on both of its site and situation.

In the mountainous tracts of Rammam Basin, ridge-line, break of slope, confluence points of streams, river terraces, ridge slopes and edge of forests are the suitable sites where settlements have been established. The inhabitants of this basin have chosen their settlement sites wisely keeping in mind the availability of agricultural land, pastureland, building material, water for domestic and irrigation purposes and other products which are important to sustain life.

The tract is inhabited by people belonging to various ethnic groups (as discussed in detail in Chapter 2) and they respond to their environment differently. In the basin under study, the high altitudes are favoured by the Sherpas whereas the low lying valley settlements or river terraces are preferred by the Nepalese and Lepchas.

Some of the settlements in the basin enjoy situational facility and have turned into Bazar areas which attracted many people to these sites. As a result, these settlements have grown faster than the neighbouring settlements. Thus, the study of settlement site and situation is very important to understand the people and their relation to environment in the Rammam Basin.

After enumerating site and situation of settlements in the basin, the functional characteristics of the settlements on the basis of engagement of population with primary, secondary and tertiary activities have also been discussed in this chapter to understand the general pattern of functions of settlements in the study area.

4.2. The settlement sites in the study area

4.2.1. Settlement sites based on physiography

The settlement sites in the Rammam basin mostly depend on the physiography of the basin. As mentioned earlier that the basin under study is a mountainous tract, so there are scarcity of flat lands except the river terraces for establishments of human habitation. All the terraces of the main river as well as its tributaries have become favourable sites of human habitation in the basin under study. Apart from terraces, *bhanjyang* (sagging place/mountain saddle) areas are also favourable sites for human habitation in the basin as these sites show several advantages which have been discussed later. Other favourable sites of human habitation in the basin are ridge tops, confluence point of streams, break of slopes, etc. which have been discussed in the later paragraphs.

A. River terrace settlements

River terraces can be found at various altitudes such as 400m (Karmatar), 800m (Dhalam), 1000m (Lodhama Bazar), and 2200m (Samanden, Gorkhey) at different parts of river Rammam and its tributaries. From source to confluence point of river Rammam, it has formed three terraces (paired) on both sides of its valley. The heights of these terraces are – 400m, 800m, and 2200m. The right hand tributaries of river Rammam such as Siri khola and Lodhama khola also formed terraces at various altitudes.

In the upper course of river Rammam, it has formed terrace near Gorkhey at an altitude of 2200m. The terrace is narrow nearly 5m to 20m in width but it has housed one third of the population of the hamlet Gorkhey. At Samanden (a Lepcha word meaning flat or leveled land), 1.5km south of Gorkhey, this terrace becomes wide enough – more than 80 metre. The flattish portion of Samanden terrace is 0.12 sq. km in area. Both of two terraces are elongated, sword-like (*khukri*) shape as the widths of the terraces are less than the length. These two terrace settlements together housed 58 households along with 272 populations (as per 2011 census).

Daramden or **Dhalem** is a village located in Daramden block of Soreng sub-division in West Sikkim. In the middle course of river Rammam, a wide terrace has been formed near **Daramden** at an altitude of 800m. The area of the terrace is 1.41 sq.km, and this is the largest terrace of the basin in terms of area. The terrace is inclined towards river Rammam as its altitude varies from 1100m near the top of the slope in the west to 800m near the river Rammam. The settlement Dhalem (a Lepcha word meaning staircases) is located over this terrace. The settlement including its agricultural field is square in shape with two nuclei of residential areas: one around a temple, and another near the Gram Panchayat office of Lower Fambong. This terrace is resided by 349 households with 1886 persons (as per 2011 census).

In the lower course of river Rammam terraces can be seen on the right hand side at Goke at an altitude of 380m. The hamlet **Karmatar** (Tar, a Nepali word meaning flat land), with area of 0.28 sq.km, is located at this terrace and the pattern of the settlement is elongated as width is less than length. Another hamlet named **Kamjer Busti** is located on another terrace at 460m altitude. This is also elongated in shape with 0.39 sq. km. in area. Both of these terraces are located under the Gram Panchayat of Goke I. The hamlet Karmatar is inhabited by 140 households with 733 persons whereas the hamlet Kamjer Busti is inhabited by 42 houses with 754 persons as per 2011 census.

Kerabari, (in Nepali, Kera meaning banana, Bari – field) located under Goke I Gram Panchayat, is another settlement developed on a terrace formed at the confluence point of river Rammam with river Great Rangit, locally called as Bari Rangit khola. The site of this settlement is unique and has been discussed later in detail under the heading of Confluence point settlement.

Lodhama Bazar (Budhware) is another best example of a river terrace settlement as it is located at the lower terrace of the river Lodhama khola. This settlement is located at the right bank of the river Lodhama. The altitude of this settlement varies between 1050m near Lodhama khola to 1090m near the Deorali danra. This settlement is one of the oldest haats (weekly Market) of this region. On the left bank of river Lodhama, Fatingtar is located at an altitude of 1200m. Both the settlements are elongated in shape as widths of terraces are less than length.

River Terrace Settlements in the Rammam Basin



1. Samanden; 2. Lodhama Bazar; 3. Daramden; 4. Karmatar; 5. Kamjer Busty; 6. Kerabari

Source: Researcher

Photo Plate 4.1

The hamlet Lodhama Bazar is 0.1 sq. km in area. Lodhama Bazar is resided by 150 households with 703 persons.

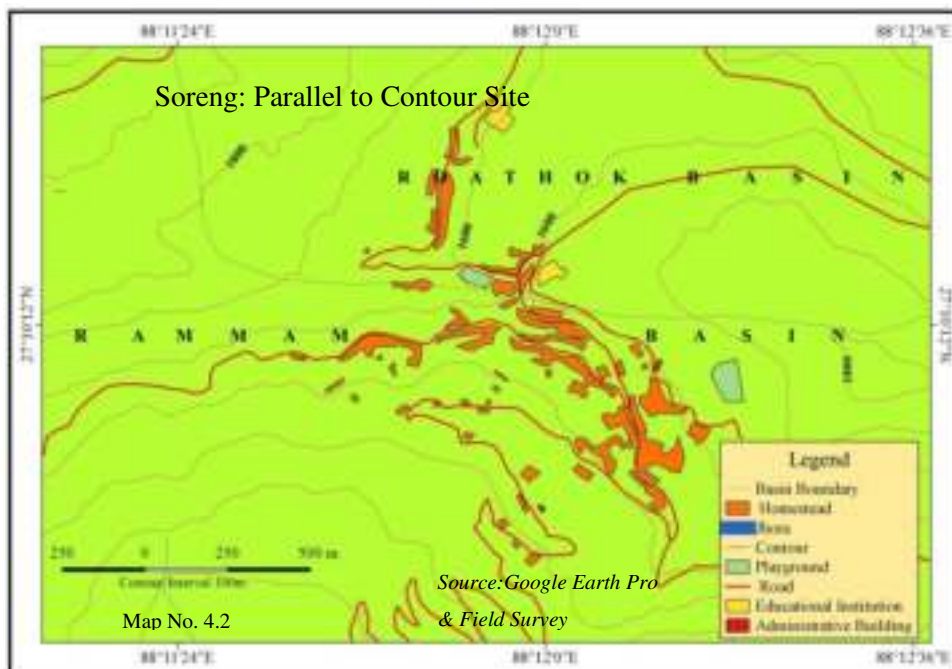
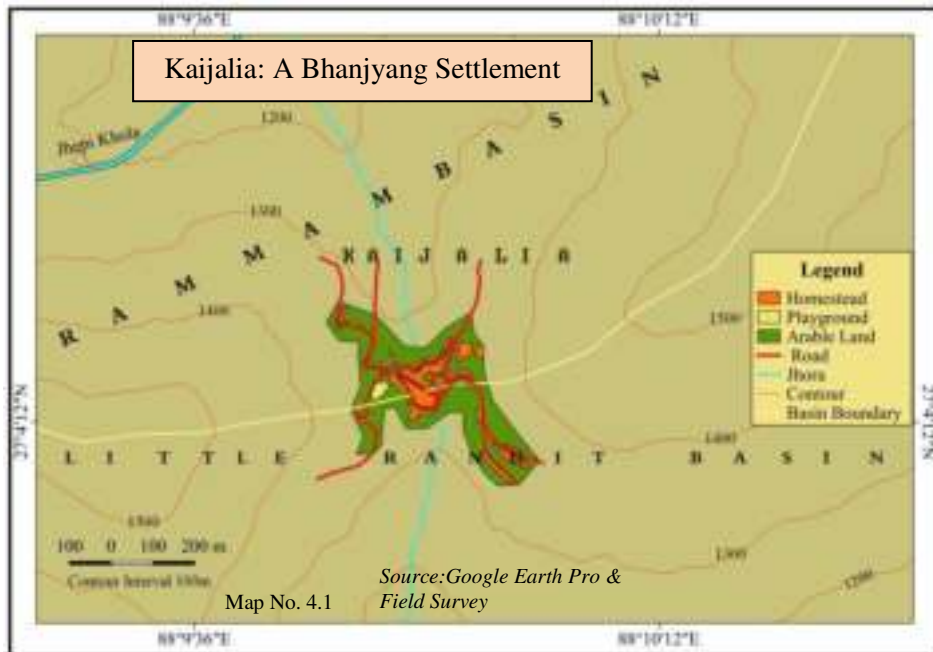
Timburey, name derived from ‘Timbur’ tree (*Litsea citrata*), is another example of terrace settlements developed over the terrace formed on the left bank of river Sirikhola at an altitude of 2000m. This picturesque hamlet is located under Sirikhola-Daragaon Gram Panchayat and is a tourist attraction also due to its location on the trail from Sandakphu via Gurdum-Sirikhola to Rimbick. It is inhabited by 45 households with 237 persons as per 2011 census. The hamlet is mainly resided by people belonging to Tamang ethnic group. The terrace is 100m in length and 70m in width and area of the hamlet is 0.15sq.km. Lungyum at Salyangdang and Budang at Chumbong village are other terrace settlements grown in the basin.

B. Bhanjyang Settlements

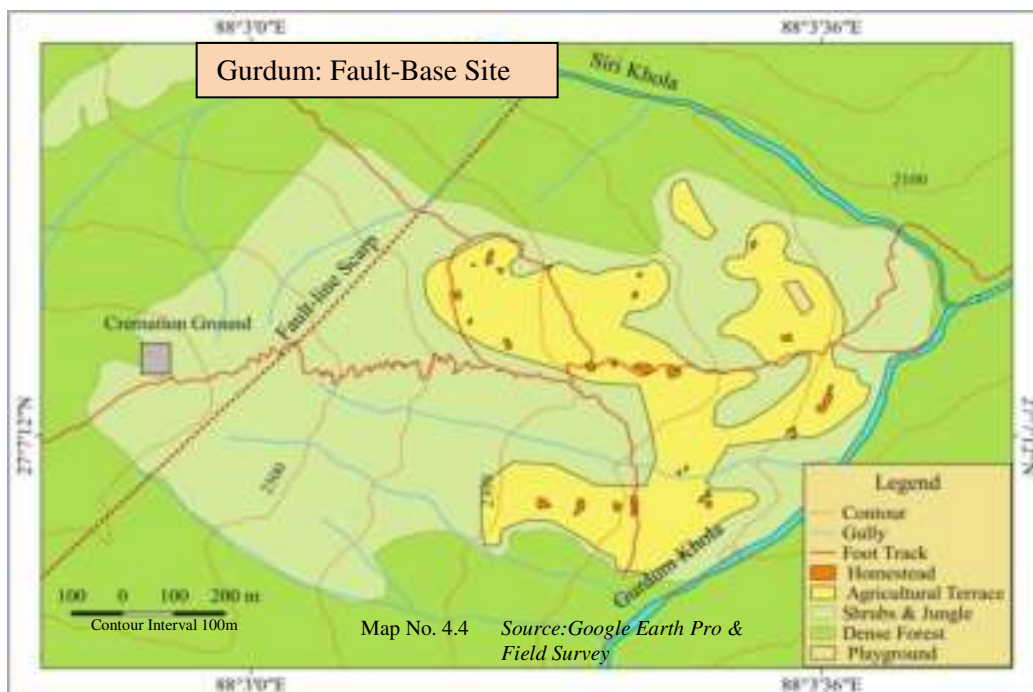
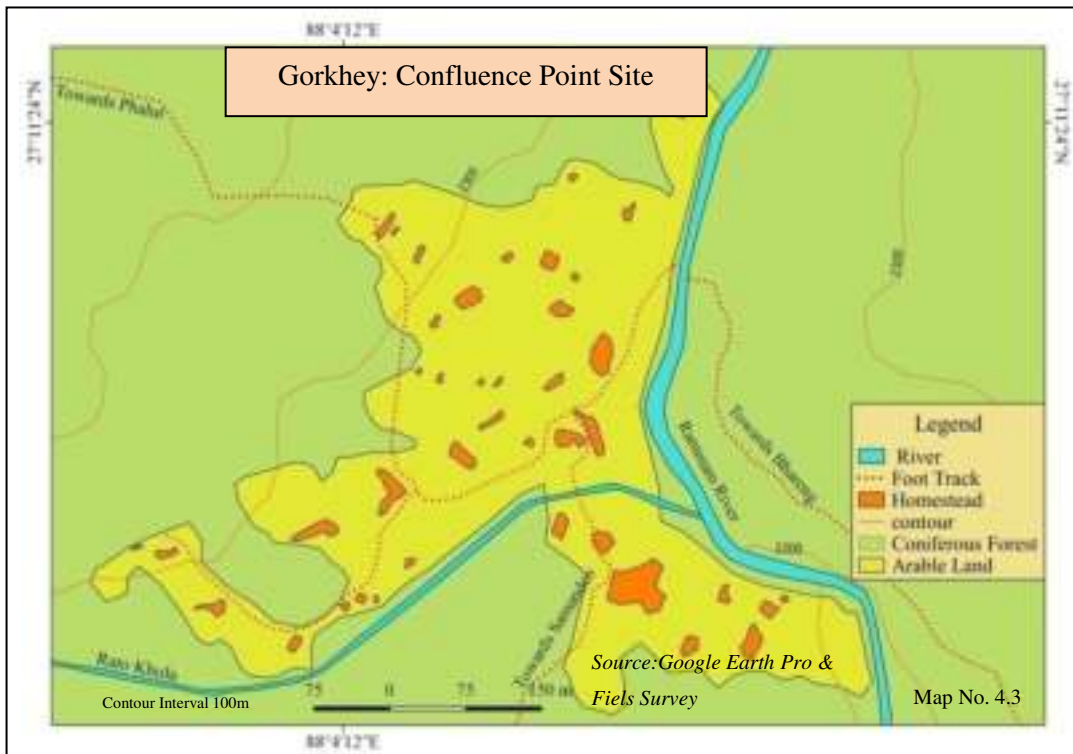
Bhanjyang is a Nepali word meaning a lowlying area between a pair of hills or ridges. The settlements located in these areas are generally named with the term *Bhanjyang* added at its end. *Bhanjyang* areas are favourable site for human habitation in the basin because the hamlets developed on these sites enjoy several facilities such as protection from chill wind, abundant supply of water from *jhoras*, thick soil layer, relatively stable landmass, etc. Besides these geographical facilities, these *bhanjyang* areas also act as mountain pass to connect one side of the ridges to the other side. As a result, these areas enjoy better connectivity which leads to development of large market places in these sites. In the following paragraphs few *bhanjyang* settlements have been discussed in detail:

Kaijalia Bhanjyang is the best example of a *bhanjyang* settlement in the Rammam basin. The name Kaijalia has been derived from a tree named ‘Kainjal’ (*Bischofia javanica*) which is a Nepali word. Kaijalia bhanjyang is located at the gap between Deorali danra in the west and Samalbong danra in the north-east at an altitude of 1300m in the southern part of the basin. This gap connects Rammam basin in the north to Little Rangit basin in the south. This site also enjoys situational facilities and has become a nodal centre as several roads joined at this site. Kaijalia Bhanjyang is resided by 196 households with 793 persons as per 2011 census. The hamlet is located under Kaijalia Gram Panchayat. Due to its nodal location a large permanent market has been developed here.

Settlement Sites in the Rammam Basin



Settlement sites in the Rammam Basin



Soreng is another important settlement located at a bhanjyang site in the northern part of the basin. This *bhanjyang* connects Rammam basin in the south to Roathok basin in the north. Though most part of the settlement is located within the basin but Soreng school, B.Ed college are located on the other side of the basin and the bhanjyang site is the nodal point of several roads coming from various directions. Due to its good connectivity, Soreng Bazar is located near the site.

Daragaon Bhanjyang is located on the Danragaon spur, a projected part of the Sabarkum danra at an altitude of 2000m in the southern part of the basin. This is relatively a small settlement compared to the above mentioned *bhanjyang* settlements as it is located in the remote part of the basin. This site is inhabited by 63 households with 333 persons as per 2011 census. Unlike the other two bhanjyang settlements, this settlement does not enjoy any situational facility as the site is located at relatively lower altitudes than other surrounding settlements. One metalled road crossed through Upper Daragaon to reach hamlets like Lek kharka and Rammam which are located at higher altitudes.

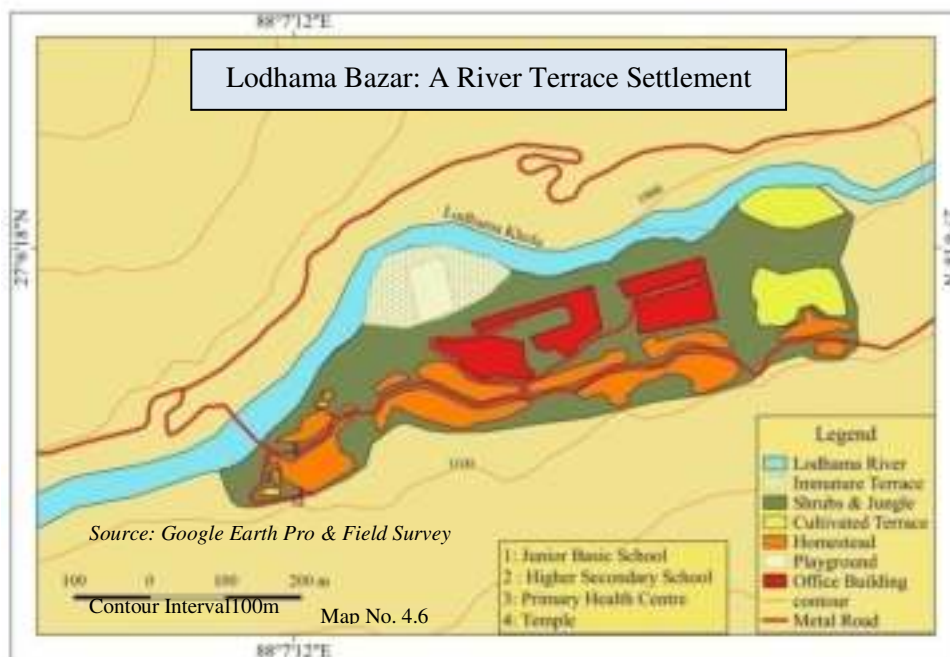
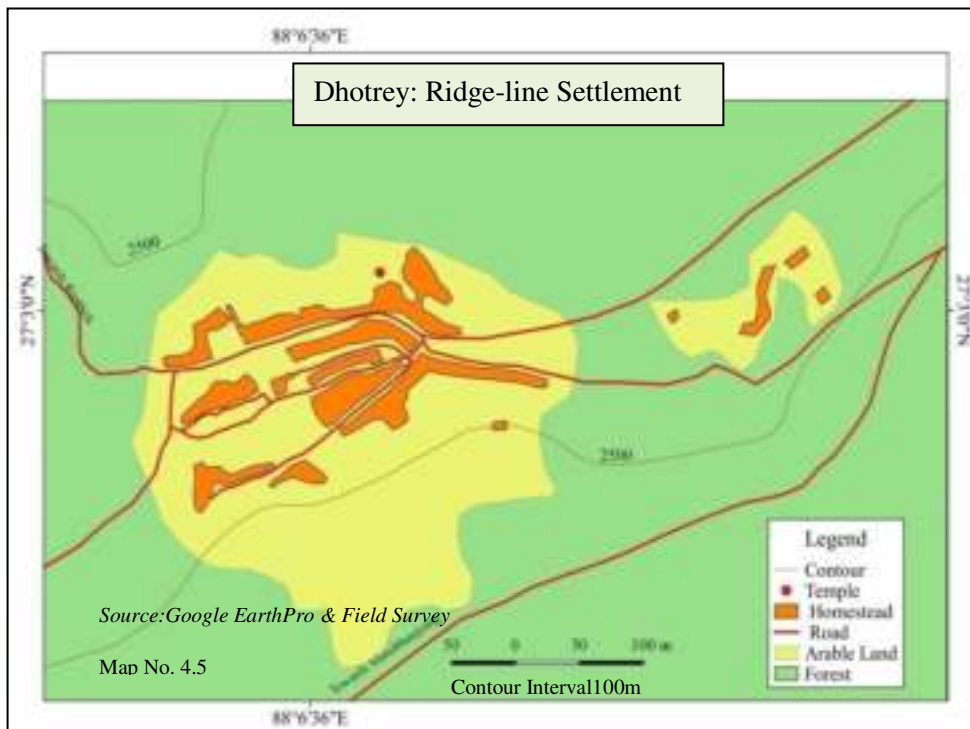
C. Ridge-line or Danra settlements

There are some settlements in the tract which have been developed on the summit section of the ridges and spurs. Goke on the ridge-line of Samalbong danra, Dhotrey on the ridge-line of Deorali danra are examples of such settlements.

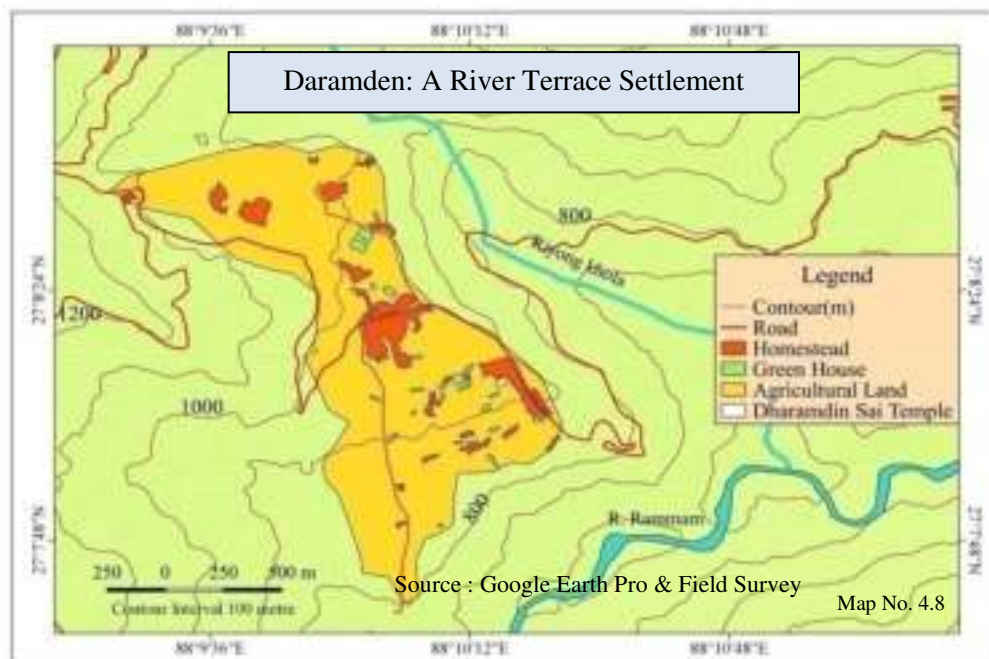
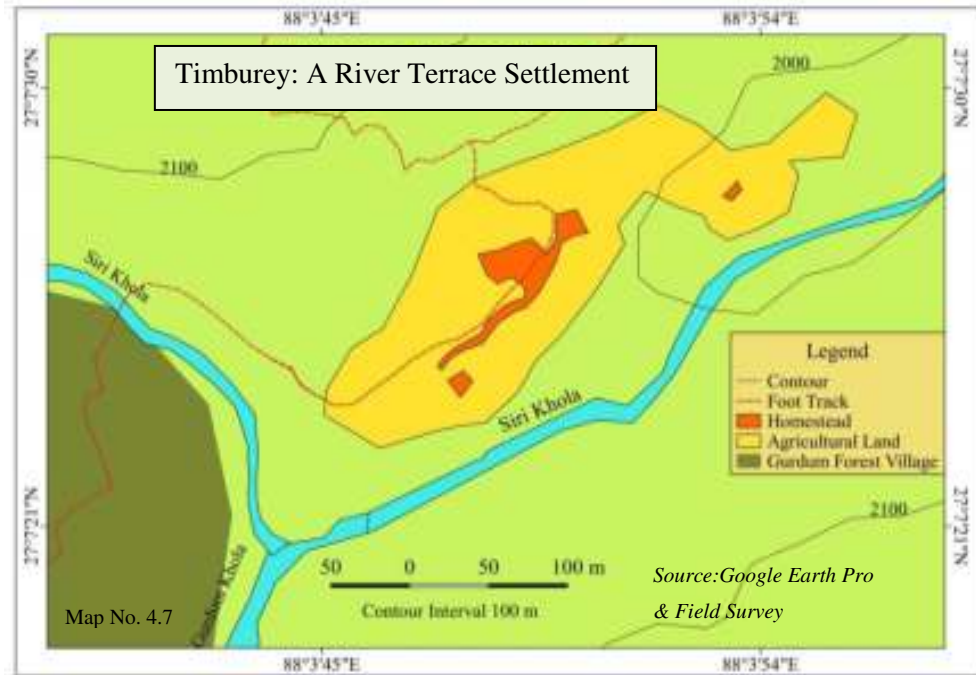
Gok is a Lepcha word meaning inaccessible place lying on a narrow promontory between the rivers Rammam and *Chhota* (Little) Rangit. According to O' Malley (1907) "an old military post was located here to vigil the enemy". This village is located at an altitude of 700m. Due to its ridge-line location it gets high insolation which is favourable for agriculture in the village. This is mainly an agricultural village as more than 75% population is engaged in agricultural activities. As per 2011 census, 256 households with 1173 persons reside in this village in two hamlets viz, Upper and lower Goke. This village is nodal point between Bijanbari in the east, Nayabazar in the north and Karmi in the west.

Dhotrey is a Nepali word meaning a place having been torn by weathering and mass wasting. Dhotrey Forest Village is located on the ridge-line of Deorali danra at an altitude of 2500m. It is a hamlet under the village of Singalila Forest located under Lodhama II Gram Panchayat. As per 2011 census 79 households with 351 persons, reside in the hamlet.

Settlement Sites in the Rammam Basin



Settlement Sites in the Rammam Basin



The hamlet is surrounded by forests and is far away from other hamlets located in the basin under study. It is located on the way from Kaijalia to Tonglu and also joined to Maneybhanjyang (one of the largest bhanjyang settlements in Darjiling Himalaya) in the south and Rimbick in the north. Apart from these two villages, Daragaon, Gumbadara are also examples of this type of settlements in the tract.

D. Settlements on slope

i. Parallel to Contour

Sorneg has developed on the slopes of the water divide between Rani khola in the south and Roathok khola in the north. The settlement has developed at an altitude between 1500m to 1600m. The settlement extended from east to west in between the contours of 1500m and 1600m parallel to the contour lines and thus has got a typical crescent shape which has been discussed in detail in chapter 5.

Sombaria is another settlement which has developed parallel to the contour line of 1500m in the eastern slope of Okhery spur. Sombaria or Sombarey (derived from the word 'Som-bar' meaning Monday) is a permanent market place located under Upper Fambong Gram Panchayat Unit in the northern part of the basin. The settlement is named after the weekly market day of 'Som-bar' (Monday). The settlement is extending north to south direction parallel to the contour mentioned above.

Rimbick Bazar, or middle Rimbick has developed parallel to the contour lines between 1800m and 1900m on the extended part of Rimbick danra. The Bazar is extending from south to north along the said contour lines. Rimbick Bazar or Middle Rimbick is resided by 452 persons in 101 households as per 2011 census.

ii. Site transverse to Contour

Daragaon developed on a projected part of Sabarkum danra. The village extends from 1500m at the confluence point of Siri khola and Rammam river to 2400m. The village has developed on the top of the projected part running from 1800m to 2400m transverse to the contours.

Beechgaon ('*Beech*' meaning middle in Nepali and '*Gaon*' meaning village) is the village located in between Daragaon on the north and Sirikhola village in the south.

This village also developed transverse to the contour as the village extends from 2000m to 2400m.

E. Fault-base Site

Gurdum is a Nepali word meaning the place located at a nook of mountain. It is located at the base of a large cliff created by a Reverse Fault in Sandakphu danra (ridge) with a large cliff. Establishment of this settlement is evident as the people residing here receive several opportunities from nature. They get forest products grown over the upthrow side, supply of water from perennial springs issued at the base of the Fault plane, gets shelter from the chill Katabatic wind along the ridge top and get also the advantage of gardening and farming on fertile soils deposited at the downthrow side. One family of this habitation has taken a further facility for improving economic condition by opening a private lodge to host tourists and trekkers trekking across the place. Gurdum is resided by 37 households with 202 persons as per 2011 census.

F. Confluence point of streams

The confluence point of the mountain torrents are the most suitable places for establishment of small settlements. They indicate the shortest path for crossing the confluenced streams as well as shorten the actual length of the mountain tracks. For instance the settlement **Gorkhey** lies at the confluence point of the streams Ratokhola and river Rongbong, the upper stretch of the river Rammam.

Kerabari (Nepali word '*Kera*' meaning banana, '*Bari*' meaning field) is another confluence point settlement located at the meeting place between the rivers Rammam and Great Rangit (locally known as Bari Rangit khola) at an altitude of 320m in the southern part of the basin. This is a hamlet of village Goke located under Goke I Gram Panchayat. The settlement is located on the terrace formed by the former river. The settlement covers an area of 0.35sq.km and is inhabited by 74 households and 334 persons as per census, 2011. This settlement is very close to Nayabazar Notified Bazar Area located on the northern part of the basin.

G. Entrance at Gorge

At the entrance of a gorge where the gradient of the river valley suddenly increases settlement may grow if a piece of flat land is available. **Sepi** is a good example of such

type of settlement lying just below the entering point of the river Rammam into its gorge of the upper section. **Sepi** is a Nepali word meaning the place lying at the shadow zone of the mountain. Here the number of households is increasing day by day because the middle terrace of the river just ends at this point and provides a narrow strip of flat fertile land for production of crops too.

H. Break of Slope

At some points the ridge slopes suddenly decreases with the formation of deeper layers of solum. These points are useful sites for establishment of small arable lands along with hamlets. Rammam Forest Village and Upper Sirikhola Forest Village show good examples of such sites where the slope of Sabarkum danra suddenly decreases from 22° - 15°. Rammam Forest Village is resided by 51 households with 257 persons whereas Sirikhola Forest Village is resided by 8 households with 55 persons as per 2011 census.

4.2.2. Settlement sites based on other factors

A. Settlement Site with high insolation

The settlements growing on projected spurs are very much dependant on the amount of insolation. Thus the 'adret' (sunny) side of the ridges is primarily chosen for the growth of any settlement. Such sites are protected from chill northerly winds too by the crags lying over the summit section of the ridges. High amount of insolation increases not only the surface temperature of the place but also helps to grow the crops rapidly. The growth of settlements in the southern flank of the ridges makes it clear that high amount of insolation is one of the key factors in choosing favourable settlement sites. Almost seventy percent of the settlements in the Rammam Basin are either located on the eastern or southern slopes of the ridges. Gumbadara, Yakreybong, Namla, Lodhama, Kankibong, and Jhepi in the southern part and Bhareng, Ribdi, Okhery, Sombaria, Daramden, etc in the northern part of the basin are villages of best examples of such adret location. Very small settlements like Kalyan or Daragaon Forest Village also reveal such type of location.

B. Settlements on the ubac (lee) side

On the contrary, the ubac (lee) side of the ridges causes repulsion for the growth of any settlement. Chill wind associated with moist surface air-layer makes a plight for the

settlers. In many cases this type of settlements, if grown without its climatic consideration, is abandoned when a new settlement is grown nearby at favourable site. Though there are some lee side settlements in the tract such as:

Barahatta and **Chotahatta** located on northern slopes of Deorali danra are, to some extent, lee side settlements. The existence of these types of settlements is mainly due to the increasing population pressure on the tract. Both these hamlets are located under Lodhama II Gram Panchayat and are resided by 638 persons and 621 persons respectively as per 2011 census.

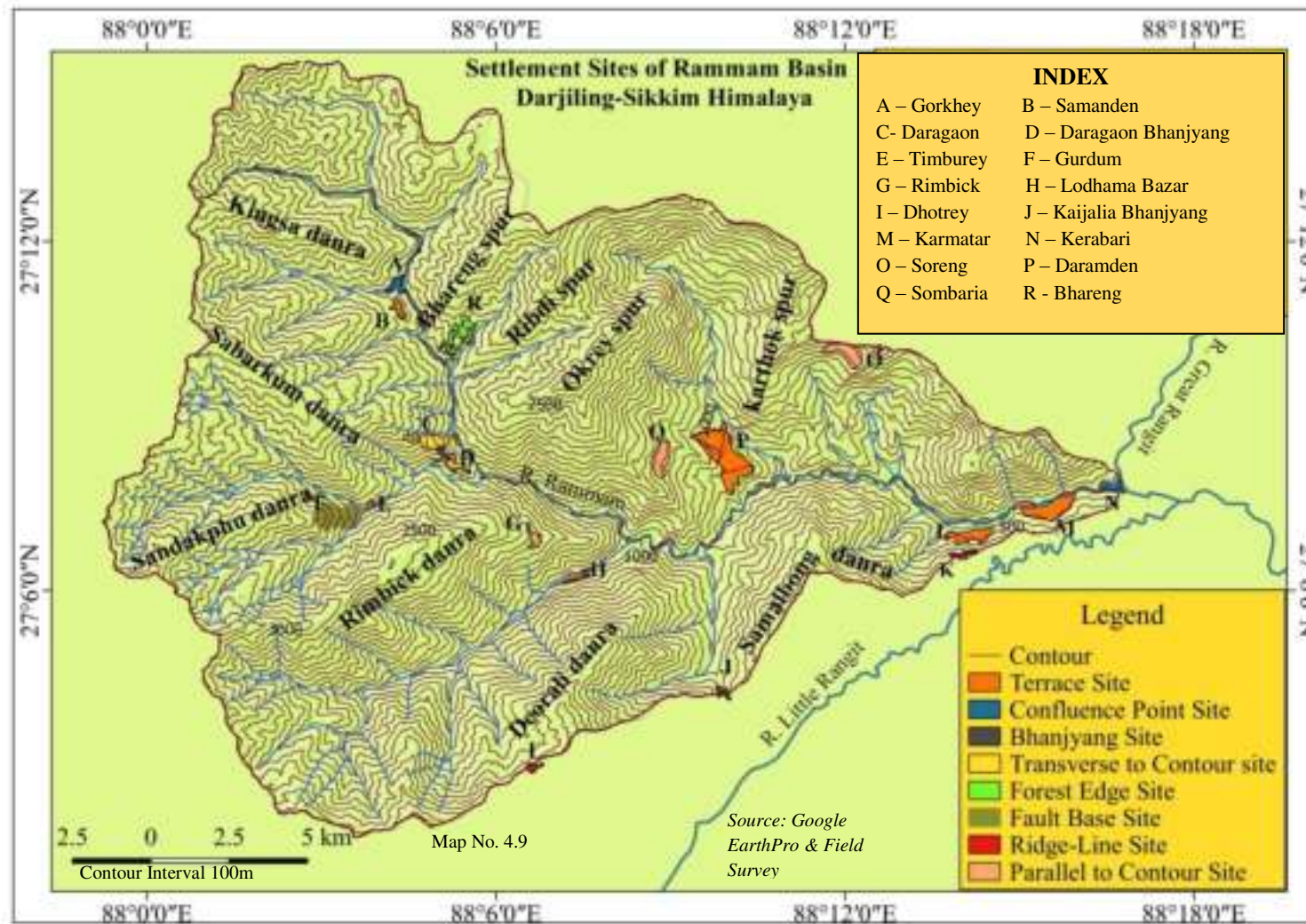
Tubun is a Lepcha word meaning the hamlet lying at the shadow zone or backside of the mountain. It is located in northern slopes of Rimbick danra. This hamlet is mainly inhabited by people belonging to Lepcha ethnic group. As per 2011 census, the hamlet is resided by 58 households with 262 persons. The hamlet is located under Rimbick Gram Panchayat.

Rajavir, meaning 'Great slope' ('Vir' a Lepcha word meaning steep slope), indicating the steep ridge-slope lying at that place due to vigorous hydraulic actions of the river Rammam. This is a hamlet of Rimbick village under Sirikhola-Daragaon Gram Panchayat. As per 2011 census, 270 persons in 45 households live in this hamlet.

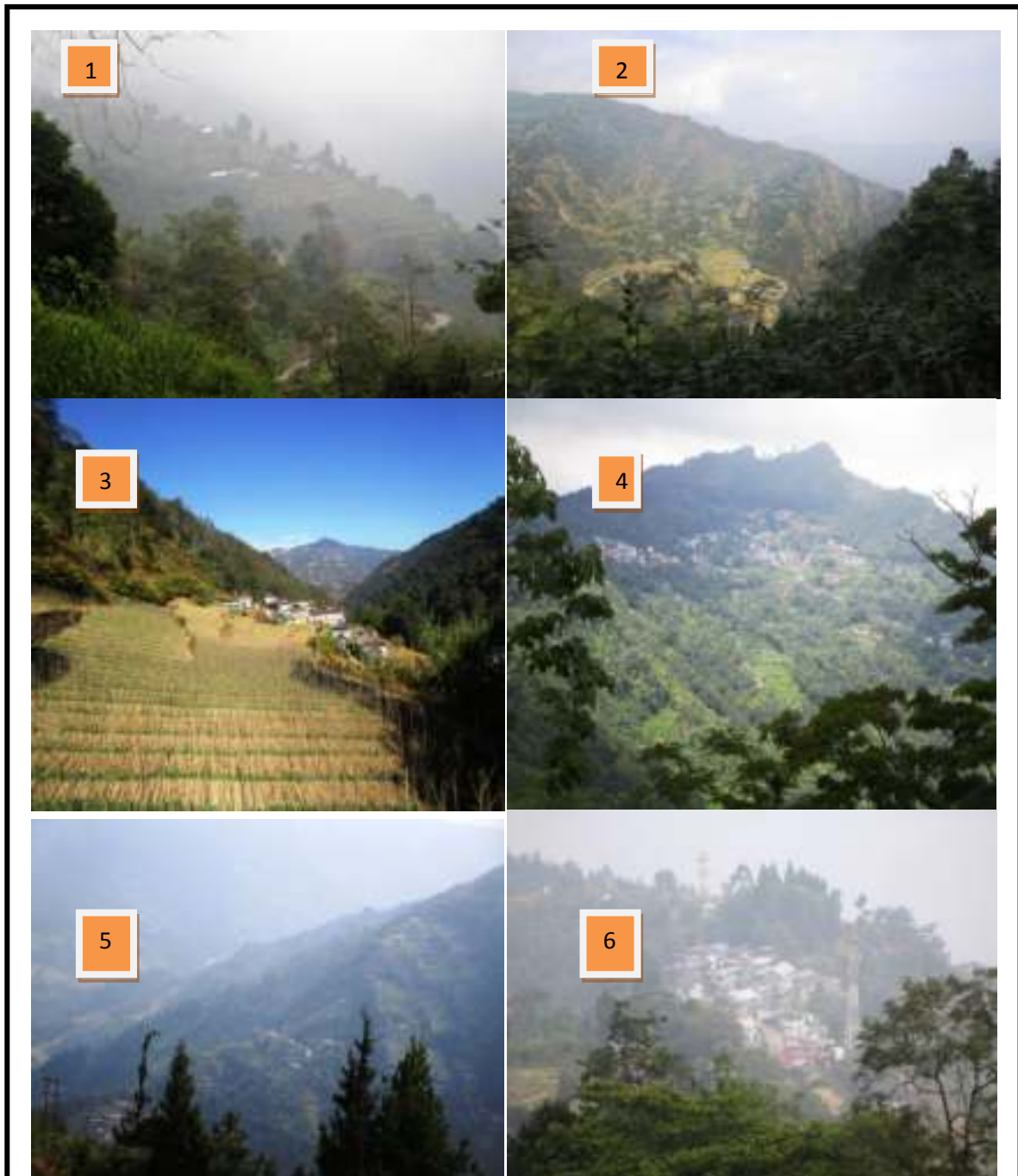
Jawleygaon is a Nepali word meaning twin villages. All these settlements have developed on the northern slopes of Rimbick danra. Jawleygaon consisting of upper and lower part is resided by 83 households with 398 persons as per 2011 census.

C. Forest Edge

Rammam, Upper Daragaon (Kalyan), Upper Beechgaon, Upper Sirikhola, Gurdum all are located at the edge of the Singalila National Park and all these are forest villages. Bhareng, Buriakhop Rumbuk and Burikhop dodok are also Forest edge settlements lying in Northern part of the Rammam basin. The inhabitants of these hamlets depend largely on the forests for their livelihood. These habitations provide shelter to the trekkers trekking through the forests and thus help to maintain the forest as well as help to develop tourism in this tract.



Settlements on Various Sites in Rammam Basin



1. Beech Gaon; 2. Salyangdang; 3. Timburey; 4. Soreng, 5. Kankibong; 6. Gumbadanra

Source: Researcher

Photo Plate 4.2

D. Agricultural land

The settlers of the villages such as Samanden, etc. are mainly farmers. They raise their crops like Maize, millet and different types of vegetables along the narrow contour strips of the streams passing by. The method of their cultivation is subsistence type with the use of primitive tools and manures. Plantation of cardamom is now being popular in this region. The moist slopes of the hills are generally used for this cash crop.

E. Wet point

Any settlement grown for human habitation requires the supply of water. The settlements lying over the ridge tops and summit section of the region under study suffer a lot due to lack of water. But the hamlets and villages lying on the hill slope, especially near the springs, get its supply sufficiently. The village Rammam shows such facility as its households along with their terraced fields being located along the alignment of numerous springs which ultimately join the middle part of the river Rammam.

4.2.3. Settlement sites preferred by different communities

According to Paul Vidal De La Blache (1926) "Nature prepares the site man organizes it to enable him satisfy his desires and needs" (Blache, 1926, p.271). This affirms that the idea of a site is fundamentally cultural (Singh, 2013, p.90). Man prefers to live in those places which provide the materials for his living such as food, drinking water and building materials. The methods of acquiring such materials are not same for all groups of mankind. The types, quantity and quality of these materials required also vary in different groups of people. For this reason some places seem favourable to some people whereas others find the land unsuitable for their habitation. The places chosen for establishment of settlements in the Rammam basin are thus specified in the following sites:

A. High Mountain settlements of the Sherpas

The altitude of the settlements in Rammam basin varies from 320 m at Kerabari and 2750m at Hilley. Maximum number of settlements in the basin is located between 700m-2100m altitudes. But there are few hamlets which are located above 2000m altitude such as Kalyan Forest Village (2380m), Beechgaon Forest Village (2368m), Beechgaon (2145m), Samanden (2372m), Lower Sirikhola (2072m), Sirikhola Forest

Village (2479m), Gurdum (2220m), and Gorkhey (2262m) in the southern part of the basin. The percentage share of Sherpa population in these hamlets are Kalyan Forest Village (96.32%), Beechgaon Forest Village (72%), Beechgaon (69.41%), Samanden (52.76%), Lower Sirikhola (51.68%), Sirikhola Forest Village (49.07%), Gurdum (47.25%), and Gorkhey (36.94%). In the northern part Bhareng and Ribdi are villages with concentration of Sherpa population. The Sherpas are original inhabitants of southern part of Tibet. From this land they first migrated to eastern part of Nepal at Solu Khumbu region and thence some of them came eastward and crossed the Singalila Range to settle at the higher altitudinal settlements in the Rammam Basin. The Sherpas are basically herders and rearing of yak was once their principal livelihood. In the higher altitudes especially above 2000m, it is difficult to cultivate crops as the temperature is very low. Due to lack of favourable temperatures the cropping seasons are lengthy; almost six months in this belt. Only maize, some vegetables and potatoes can be grown in this belt. So, this belt is not favourable for those who rely solely on agriculture for their living. Thus, the Sherpas are best suited to these high altitudinal belts. The Sherpa people located in this belt rear dzoes –a hybrid of yak and cow. The Sherpa people make their ‘Goth’ (temporary shelter for animal and man while traveling for fodder of the herds in the jungle) near the summit line and the male members of the family take their herds over the summit for fodder in summer months. As this altitudinal belt is located on the famous trail of Maneybhanjyang-Sandakphu-Gurdum-Sirikhola-Rimbick or Maneybhanjyang-Sandakphu-Phalut-Gorkhey-Samanden-Rammam-Sirikhola-Rimbick, so many settlers of these villages have engaged themselves in tourism business, such as hotel, homestays and acting as guide and porter for tourists.

B. Terrace and Bhanjyang settlements of the Nepali people

The people migrated from the west lying Nepal in late 18th century were well adept in cultivation. The river terraces along the master river Rammam and its main tributaries like Siri khola, Ribdi khola, Lodhama khola and Jhepi khola have been used to raise Maize and Rice by them since their first habitation in the tract. The terraces are covered with Quaternary alluvia and are located above the high inundation level. Besides the production of Maize and Rice, the terraces are intensively cultivated for raising different types of vegetables, hill potatoes, millet and cardamom (cash crop). Hence the settlements of the Nepalese are located along the terraces generally in between their arable lands and pastures. Lower Daragaon, Dilpali, Namla, Lodhama, are best examples of such settlements.

C. Sites for Lepcha Settlements (at middle heights)

The Lepchas are the first human group making their settlements in the basin under study. They are directly dependant on nature for their living still today. Hence the settlements of the Lepcha people lie generally on the higher altitudes of the mountains where they find small piece of land for producing their food stuffs by primitive methods. They collect their housing materials from the forests surrounding them. At present Lepchas are concentrated in the hamlets of Tubun-Toksar, Gumbadara, and Yakreybong in the southern part; and in the hamlets of Rongliyang of Upper Fambong and at Lower Rumbuk village in the northern part of the basin.

D. Low altitude settlements of Mangars

Mangar people are among the earlier inhabitants of Sikkim and are concentrated in the northern part of the basin at an altitude of 700m to 1000m. The hamlets with high concentration of Mangar population are found at Mangarjung and Mangsari. According to J.R.Subba (2011), “The Mangars were also there in prehistoric period of the present Sikkim, ruling some of the areas in Sikkim. They were there at Mangsari Mangarjong area of West Sikkim”.

4.3. Situation of Settlements

Whenever a site experiences human habitation the number of households begins to grow. But the rate of the growth of a settlement depends primarily upon its situation, i. e, its relative location (Broek & Webb, 1980). It is mainly considered by cultural aspects including presence of all civic amenities as well as religious factors. Like other alpine settlements of the world the settlements of the region under study can be classified as follows:

A. Halting point across the trekking route

Settlements may grow at a certain distance and at habitable places along the strenuous trekking route traversing the Ranges. **Gurdum** and **Timburey** are such settlements grown almost in the midway of the trekking path from Sandakphu to Rimbik. The first one has a single but large private lodge with good accommodation, while the latter one possesses two private lodges with scenic beauty of the river Siri khola.

Gorkhey is another settlement located on the famous trail between Phalut-Bhareng and Phalut-Rimbick. This settlement has four private lodges and one trekkers’ hut for tourists’ accommodation.

TEMPLES AND MONASTERIES IN RAMMAM BASIN



Monastery at Rammam (above left); Cave Temple of Shiva at Sirikhola (above right); Samten Monastery at Rimbick (Middle left); Temple at Gorkhey (middle right); Temple at Lodhama Bazar (below left); Temple at Gumbadara (below right)

Source: Researcher

Photo Plate 4.3

Sirikhola is another settlement grown on the midway on the trekking path of Gorkhey – Rimbick. It has one Trekkers hut and three private lodges.

B. Religious Centre

As the hill people are very much dedicated to their religion, some settlements show religious activities as one of their principal functions. The settlement **Rimbick** reveals such characteristic where two temples along with a small Monastery have been set up for satisfying the spiritual needs of the settlers. Samten Monastery, established in 1910, is located at Maneydara at an altitude of 2200m serves the same purpose in its surrounding area.

Rammam is another settlement where people belonging to Buddhist community from the surrounding areas come to perform their religious rites in a tiny Monastery located at the heart of the village.

C. Route convergence

At the point of route convergence settlements grow easily for the availability of transport facilities. **Soreng** is situated at such a point where the roads meet coming from Jorethang, Karthok and Dentam. The roads are Macadam-type and are suitable for plying of heavy vehicles, so the settlement is growing rapidly.

Kaijalia Bhanjyang is another settlement located at the route convergence between Darjiling-Rimbick (Metalled road) and Dhotrey to Goke (boulder path). The metalled road from Bijanbari to Rimbick connects settlements of Chhota Rangit Basin to the settlements of Rammam Basin.

Daragaon, another such settlement, though very small in size, is situated at the convergence of several village paths coming from Rammam, Sabarkum and Rimbick. It cannot avail for getting the opportunity of running heavy vehicles directly, and, hence, it is experiencing slow rate of growth till now.

D. Local permanent market and periodic markets

Rimbick and Soreng are two large agglomerations having fixed market place. Agricultural products produced in their hinterland are transported to the main towns of the respective districts and other commodities are imported and sold for the local buyers at these markets. Besides these two places, permanent market place can be seen at Lodhama Bazar, Jhepi, Kaijalia, Kolbong and Goke in the South Rammam Basin and Sombare, Soreng, Nayabazar Notified Bazar Area in the North Rammam Basin (as

discussed in chapter 2). All the essential commodities are sold at these markets. Rimbick and Lodhama Bazar are very old permanent Bazars and large amount of agricultural products (mainly potatoes and peas) are used to be exported from these two bazaars (**Dash, 1947**).

Over the study area, weekly/periodic markets (or haats) are set up on various days. These weekly markets attract many buyers and sellers from distant places. Local people sell their agricultural products in these periodic markets. Rimbick (Tuesday), Lodhama Bazar or Budhware (Wednesday), Dhotrey (Saturday), Bansbotay (Thursday) in the Southern Rammam Basin and Nayabazar (Wednesday), Sombarey (Monday) and Soreng (Thursday) in the Northern Rammam Basin are such market places.

E. Police Check Post (Chauki)

With the growing population in the tract some new police stations and check posts have been set up at important places. Lodhoma and Sombaria are two such settlements where new police stations have started to function recently. For the accommodation of personnel, some new buildings have been constructed at each of the settlements. Henceforth, the settlements have been grown much as the new comers look for security.

4.4. Changing Physico-Cultural Environment in the Rammam Basin and its impact on the site and situation of settlements

The changing physico-cultural environment in the Rammam basin during the last four decades shows enormous influence upon the site and situation of local settlements. The major changes are discussed briefly in the following paragraphs:

The flash flood in the basin in September, 1999 caused severe damage in the communication system of the terrain (Samanta, 2018). Numerous landslides and landslips occurred just after the flood period which changed local landscape as a whole. Many small settlements completely washed away, especially, along the Siri khola, Ribdi khola and Riyong khola. Some tiny hamlets were disappeared completely such as on the upper portions of Sepi, Lower Daragaon, Ribdi and lower portions of Okhery, Tikpur and Siktam. The distressed families were to be shifted at safe sites of the said hamlets.

Among the changes in cultural environment important aspect was found with the progress of Rammam Hydel Power Project in 1990's. For carrying building materials and equipments in the dam site (below Rajavir) as well as at the site of power generating plant (near Lodhama Bazar) motorable roads were constructed from the nearest bazar areas (such as Rimbick and Lodhama Bazar). These bituminous roads along with its branches (built in coming years) caused spectacular development of the settlements. The hamlet Gumbadara (1600m) started to attract migrants from surrounding hamlets as the settlement site was proposed for various developmental activities. The number of homesteads increased rapidly along the road giving rise to linear settlement pattern.

The formation of Darjiling Gorkha Hill Council in 1988 brought a great hope for the people residing in south Rammam Basin, i.e. in the part of Darjiling district. Hiking and tourism (due to the end of political unrests) increased manifold since early 1990s. In consequence of that number of trekkers hut and hotels also increased. The architectural characteristics of many old houses were changed on account of financial assistance by the administration. Thatched roofs were replaced by corrugated iron sheets, ground floors were transformed in to concrete structure and the transition of sanitary system was improved prominently.

After completion of Rammam Hydel Power Project (Phase I) the settlements of northern Rammam Basin also began to be improved. Many homestays were established at Okhery and some hotels also set up at Okhery and Soreng. In consequence of this tourism activities developed especially around these two settlements.

Since the consciousness about local economy and polity has been growing among local people for last four decades, the cultural landscape of the terrain is developing rapidly. Every possible arable land on the mountain slopes (except the areas of national park and reserved forests) are now being used for raising crops. The homesteads of each settlement are sprawling towards the extended fields for cultivation. This may cause areal extension of those settlements.

The network of power supply (from Rammam Hydel Power Station) has spread out almost all over the settlements in the Rammam Basin. This has brought a tremendous change in the lives of local people. The economic activity has been diversified, market areas have developed largely, and many educational institutions have also been grown

on the both parts of the river Ramman. Thus, the areal extension of large settlements is increasing rapidly.

4.5. Functional Classification of settlements

M. Ghosh (1984) studied functions performed by the rural settlements in North Bengal and classified rural settlements into Market Centres, Plantation Settlements, Nodal Centres, Khasmahal Settlements, Forest Villages and Ordinary Villages. G.P. Gupta (1984) studied rural settlements of Ganga-Yamuna doab and classified rural settlements into Agricultural Villages, Transport Villages, Holi Place Villages, Urbanised Villages, Market Villages and Seasonal Fair Villages. R. Wadhva (2012) studied specialised and deficient functions on the basis of occupations of working force in the settlements of Sirsa district using 'z' score.

In this study settlements under the basin have been divided into various functional groups on the basis of persons engaged in different economic activities. For this purpose, census data of 2011 has been analysed and settlements have been categorised on the basis of persons engaged in primary, secondary and tertiary economic activities. As census data provides data on four categories such as cultivator, agricultural labourer, household industry worker and other worker, so to classify the settlements into various functional groups on the basis of persons engaged in primary economic activities, cultivator and agricultural labourers have been considered together as primary economic activity, household industry worker as secondary economic activity and other workers as tertiary economic activity (Table 4.3).

To find out the combination between various economic activities, Rafiullah's Positive Deviation Method has been applied (table 4.4). The mathematical expression of Rafiullah's Positive Deviation Method is as follows:

$$d = (\sum d^2 p - d^2 n) / n^2$$

Where, d is the deviation,

dp is positive difference

dn is negative difference from the median value of the theoretical curve and

n is number of functions in the combination

4.5.1. Classification of Villages on the basis of percentage of persons engaged in primary economic activity following Positive Deviation Method devised by Rafiullah

The settlements in the basin have been divided into three groups as follows:

A. Settlements with Primary Activity

Bhareng, Ribdi, Okhery, Tikpur and Burikhop Rumbuk in the northern part; and Hatta, Kankibong, Jhepi, Lamagaon, Kaijalia, Kolbong, Murmidong, Karmi and Goke in the southern part of the basin, are villages with more than 75 percent workers engaged in primary economic activities like **cultivator and agricultural labourers**. The percentage shares of secondary and tertiary activities are very low in this group of villages.

B. Settlements with Mixed types of Activity

Siktam, Salyangdang, Longchok, Lower Fambong, Dhalam, Upper Fambong, Rumbuk, Burikhop Dodok, Karthok, Timberbong, Tharpu, Soreng, Malbasey and Chumbong in the northern part; and Singalila Forest, Rimbick, Namla, Lodhama and Samalbong in the southern part of the basin are the settlements under this group. The percentage share of workers engaged in primary activity in these settlements varies from 25% to 75%.

As per Positive Deviation Method, these settlements have combination of two to three activities. In some of these settlements, combination of primary and secondary activities can be found whereas there are two settlements namely Malbasey and Lower Fambong where combination of three activities can be found.

Among the above mentioned settlements, Salyangdang, Longchok, Dhalam, Upper Fambong and Soreng are the settlements dominated by tertiary activity i.e. more than 60% workers in these settlements are engaged in tertiary activity, whereas, Siktam, Burikhop Dodok, Timberbong and Tharpu are dominated by primary activity with more than 60% workers engaged in primary activity.

Soreng, an administrative centre and sub-divisional head quarters of the Soreng sub-division, has many offices, market, college located at this settlement. Besides Soreng,

Table 4.1: Industrial Category of Population, Rammam Basin

Village	Cultivator		Total	%	Agl. Labourer		Total	%	H. Industry Worker		Total	%	Other Worker		Total	%	Total	Total in %
	Main	Merg.			Main	Merg.			Main	Merg.			Main	Merg.				
Bhareng	216	1	217	94.76	0	0	0	0.00	0	0	0	0.00	12	0	12	5.24	229	100.00
Ribdi	232	207	439	77.70	1	0	1	0.18	5	6	11	1.95	107	7	114	20.18	565	100.00
Okhery	286	245	531	74.06	23	13	36	5.02	1	8	9	1.26	105	36	141	19.67	717	100.00
Tikpur	315	404	719	70.21	51	0	51	4.98	10	17	27	2.64	104	123	227	22.17	1024	100.00
Siktam	112	0	112	37.71	72	4	76	25.59	1	0	1	0.34	96	12	108	36.36	297	100.00
Salyangdang	60	30	90	23.20	7	18	25	6.44	5	3	8	2.06	71	194	265	68.30	388	100.00
Longchok	24	83	107	21.75	31	39	70	14.23	0	1	1	0.20	76	238	314	63.82	492	100.00
Dhalam	132	36	168	21.68	74	11	85	10.97	21	13	34	4.39	295	193	488	62.97	775	100.00
Timberbong	471	63	534	55.39	17	46	63	6.54	9	6	15	1.56	178	174	352	36.51	964	100.00
Upper Fambong	183	69	252	21.05	62	42	104	8.69	42	11	53	4.43	651	137	788	65.83	1197	100.00
Lower Fambong	1	108	109	40.67	1	11	12	4.48	2	9	11	4.10	82	54	136	50.75	268	100.00
BurikhopRumbuk	438	127	565	81.53	10	4	14	2.02	1	1	2	0.29	96	16	112	16.16	693	100.00
BurikhopDodaak	451	238	689	63.56	6	33	39	3.60	7	5	12	1.11	219	125	344	31.73	1084	100.00
Tharpu	6	7	13	2.65	45	297	342	69.80	1	5	6	1.22	109	20	129	26.33	490	100.00
Soeng	226	75	301	23.87	84	74	158	12.53	33	1	34	2.70	707	61	768	60.90	1261	100.00
Malbasey	607	45	652	42.34	80	138	218	14.16	17	147	164	10.65	367	139	506	32.86	1540	100.00
Chumbong	178	181	359	50.35	49	81	130	18.23	3	6	9	1.26	175	40	215	30.15	713	100.00
Rumbuk	413	117	530	69.55	7	33	40	5.25	9	0	9	1.18	129	54	183	24.02	762	100.00
Karthok	72	20	92	28.13	69	59	128	39.14	2	6	8	2.45	81	18	99	30.28	327	100.00
Nayabazar	0	1	1	0.24	0	0	0	0.00	11	0	11	2.57	398	18	416	97.19	428	100.00
Nayabazar F. B.	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	5	1	6	100.00	6	100.00
Soeng F. B.	0	0	0	0.00	1	2	3	21.43	0	0	0	0.00	8	3	11	78.57	14	100.00
Sombaria F. B.	0	0	0	0.00	0	0	0	0.00	0	0	0	0.00	4	0	4	100.00	4	100.00
Hilley F. B.	1	0	1	3.70	0	0	0	0.00	0	0	0	0.00	26	0	26	96.30	27	100.00
Singlila forest	174	310	484	60.65	0	24	24	3.01	6	215	221	27.69	54	15	69	8.65	798	100.00
Rimbick	1155	745	1900	57.91	105	257	362	11.03	18	296	314	9.57	609	96	705	21.49	3281	100.00
Namla	425	258	683	64.56	13	82	95	8.98	7	7	14	1.32	200	66	266	25.14	1058	100.00
Lodhama	0	25	25	14.97	0	44	44	26.35	0	0	0	0.00	93	5	98	58.68	167	100.00
Hatta	607	618	1225	74.33	3	117	120	7.28	1	8	9	0.55	173	121	294	17.84	1648	100.00
Kankibong	337	577	914	54.57	142	484	626	37.37	12	12	24	1.43	75	36	111	6.63	1675	100.00
Jhepi	181	633	814	92.08	0	7	7	0.79	4	2	6	0.68	45	12	57	6.45	884	100.00
Lamagaon	277	469	746	66.25	141	50	191	16.96	23	6	29	2.58	103	57	160	14.21	1126	100.00
Kaijalia	499	891	1390	69.12	25	96	121	6.02	14	10	24	1.19	248	228	476	23.67	2011	100.00
Samalbond	171	75	246	29.93	41	105	146	17.76	1	5	6	0.73	243	181	424	51.58	822	100.00
Kolbond	63	424	487	88.38	0	8	8	1.45	2	13	15	2.72	35	6	41	7.44	551	100.00
Murmidong	380	543	923	80.19	2	43	45	3.91	1	61	62	5.39	32	89	121	10.51	1151	100.00
Karmi	294	87	381	85.23	1	9	10	2.24	2	1	3	0.67	40	13	53	11.86	447	100.00
Goke	1862	423	2285	54.46	157	754	911	21.71	12	23	35	0.83	564	401	965	23.00	4196	100.00

Source: DCHB, Darjiling & Sikkim, 2011

other villages are also enjoying good connectivity which might have led these villages to this group.

C. Settlements with Tertiary Activity

Nayabazar Notified Bazar Area, Nayabazar Forest Block, Hilley Forest Block, Sombaria Forest Block and Soreng Forest Block belong to this category. In these settlements less than 25 percent workers are engaged in primary activities. All the five settlements belonging to this category are located on the northern part of the basin. Nayabazar in this group is a Notified Bazar Area and only urban centre located within the Rammam Basin. The people living in this settlement are mainly businessman. Except Nayabazar (NBA), other settlements are forest blocks with little population living in these blocks. No agricultural activity takes place in these settlements as these are protected areas.

Table 4.2: Mean and Standard Deviation of Various Activities

	Primary Activity (%)	Secondary Activity (%)	Tertiary Activity (%)
Mean	58.81	2.68	38.51
S.D.	28.08	7.48	28.73
Mean + 1S.D.	86.89	12.28	67.24
Mean + 2 S.D.		17.08	95.97
Mean + 3 S.D.		21.88	
Mean + 4 S.D.		26.68	
Mean + 5 S.D.		31.48	

Source: Computed by the Researcher

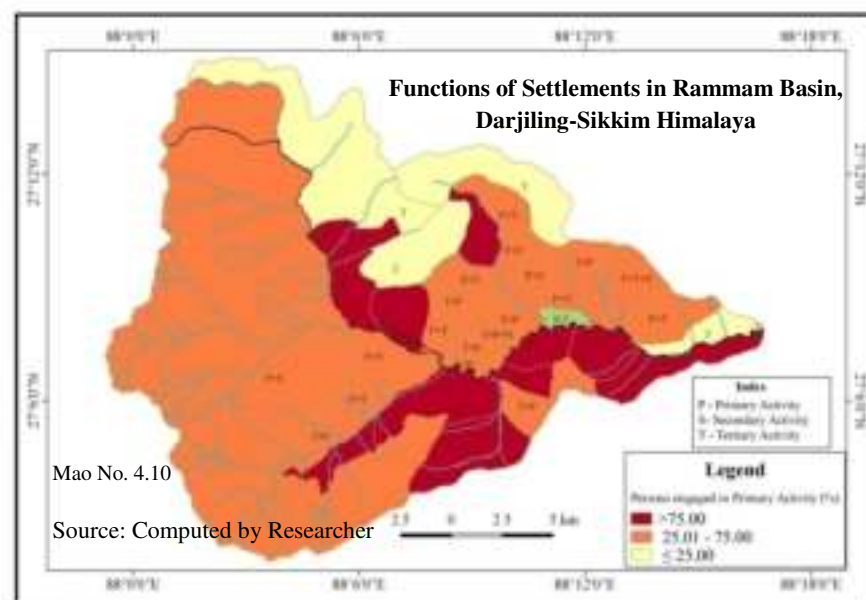


Table 4.3: Distribution of Primary, Secondary and Tertiary Workers in the Settlements of Rammam Basin

Sl. No.	Village	Primary (%)	Secondary (%)	Tertiary (%)	Total
1	Bhareng	94.76	0	5.24	100
2	Ribdi	77.88	1.95	20.18	100
3	Okhery	79.08	1.26	19.67	100
4	Tikpur	75.20	2.64	22.17	100
5	Siktam	63.30	0.34	36.36	100
6	Salyangdang	29.64	2.06	68.30	100
7	Longchok	35.98	0.20	63.82	100
8	Dhalam	32.65	4.39	62.97	100
9	Timberbong	61.93	1.56	36.51	100
10	Upper Fambong	29.74	4.43	65.83	100
11	Lower Fambong	45.15	4.10	50.75	100
12	BurikhopRumbuk	83.55	0.29	16.16	100
13	BurikhopDodok	67.16	1.11	31.73	100
14	Tharpu	72.45	1.22	26.33	100
15	Soreng	36.40	2.70	60.90	100
16	Malbasey	56.49	10.65	32.86	100
17	Chumbong	68.58	1.26	30.15	100
18	Rumbuk	74.80	1.18	24.02	100
19	Karthok	67.28	2.45	30.28	100
20	Nayabazar	0.23	2.57	97.20	100
21	Nayabazar Forest Block	0.00	0	100.00	100
22	Hilley Forest Block	3.70	0	96.30	100
23	Soreng Forest Block	21.43	0	78.57	100
24	Sombaria Forest Block	0.00	0	100.00	100
25	Singlila forest	63.66	27.69	8.65	100
26	Rimbick	68.94	9.57	21.49	100
27	Namla	73.53	1.32	25.14	100
28	Lodhama	41.32	0.00	58.68	100
29	Hatta	81.61	0.55	17.84	100
30	Kankibong	91.94	1.43	6.63	100
31	Jhepi	92.87	0.68	6.45	100
32	Lamagaon	83.21	2.58	14.21	100
33	Kaijalia	75.14	1.19	23.67	100
34	Samalbong	47.69	0.73	51.58	100
35	Kolbong	89.84	2.72	7.44	100
36	Murmidong	84.10	5.39	10.51	100
37	Karmi	87.47	0.67	11.86	100
38	Goke	76.17	0.83	23.00	100

(Source: Computed by the Researcher on the basis of data of District Census Handbook of Darjiling and Sikkim, 2011)

Table 4.4: Combination of Various Activity groups, Distinctiveness of various activities and Functional Types of the Settlements in Rammam Basin

Sl. N	Settlements	Group	Groups on the Basis of Positive Deviation Method	Distinctiveness
1	Bhareng	1	1 (P)	P2
2	Ribdi	1	1(P)	P1
3	Okhery	1	1(P)	P1
4	Tikpur	1	1(P)	P1
5	Siktam	2	2 (P+T)	P1
6	Salyangdang	2	2 (T+P)	T2
7	Longchok	2	2 (T+P)	T1
8	Dhalam	2	2 (P+T)	T1 +S1
9	Timberbong	2	2 (P+T)	P1
10	Upper Fambong	2	2 (T+P)	T1 +S1
11	Lower Fambong	2	3(T+P+S)	T1 +S1
12	BurikhopRumbuk	1	1(P)	P1
13	BurikhopDodok	2	2(P+T)	P1
14	Tharpu	2	2 (P+T)	P1
15	Soreng	2	2 (T+P)	T1 +S1
16	Malbasey	2	3(P+T+S)	S2
17	Chumbong	2	2 (P+T)	P1
18	Rumbuk	2	2 (P+T)	P1
19	Karthok	2	2 (P+T)	P1
20	Nayabazar	3	1(T)	T3
21	Nayabazar Forest Block	3	1(T)	T3
22	Hilley Forest Block	3	1(T)	T3
23	Soreng Forest Block	3	1(T)	T2
24	Sombaria Forest Block	3	1(T)	T3
25	Singlila forest	2	2 (P+S)	P1+S1
26	Rimbick	2	2 (P+T)	P1+S1
27	Namla	2	2 (P+T)	P1
28	Lodhama	2	2 (T+P)	T1
29	Hatta	1	1(P)	P1
30	Kankibong	1	1(P)	P2
31	Jhepi	1	1(P)	P2
32	Lamagaon	1	1(P)	P1
33	Kajjalia	1	1(P)	P1
34	Samalbong	2	2 (T+P)	T1
35	Kolbong	1	1(P)	P2+S1
36	Murmidong	1	1(P)	P1+S1
37	Karmi	1	1(P)	P2
38	Goke	1	1(P)	P1

Source: Computed by the Researcher

1: Single Activity (Primary), 2. Two or three activity group, 3. Single activity (Tertiary)

4.5.2. Distinctiveness of Various Economic Activities

To find out the distinctiveness of various economic activities, Nelson's method has been applied for which mean and standard deviation of various economic activities have been calculated (Table 4.2). Distinctive primary economic activity can be found at Bhareng, Ribdi, Okhery, Tikpur, Siktam, Timberbong, Burikhop Rumbuk, Burikhop Dodok, Tharpu, Chumbong, Rumbuk, Karthok in the northern part and Singalila Forest,

Rimbick, Namla, Hatta, Kankibong, Jhepi, Lamagaon, Kaijalia, Kolbong, Murmidong, Karmi and Goke in the southern part of the basin.

Secondary economic activity is distinctive at Dhalam, Upper Fambong, Lower Fambong, Soreng, Singalila Forest, Rimbick, Kolbong and Murmidong in the southern part of the basin. Whereas Tertiary economic activity is distinctive at Salyangdang, Longchok, Dhalam, Upper Fambong, Lower Fambong, Soreng, Nayabazar, Nayabazar Forest Block, Soreng Forest Block, Sombaria Forest Block, Hilley Forest Block in the northern part and Lodhama and Samalbong in the southern part.

Table 4.5: Settlements under different Functional Type

Settlements under different Functional Type	Northern Part	Southern Part	Total
Settlements with Primary Activity	5	09	14
Settlements with Mixed Type of Activity	14	05	19
Settlements with Tertiary Activity	05	-----	05
Total	24	14	38

Source: Compiled by the Researcher

4.6. Conclusion

From the above discussions it is clear that site and situation play a vital role in the growth and development of settlements. Most of the settlements in the Rammam Basin are located on favourable sites as mentioned above and some of these settlements have also favourable situation which causes these settlements to grow rapidly. But some settlements in this basin are located on less favourable sites too such as settlements on the ubac side of the ridges (e.g., Hatta). The existence of these types of settlements in the basin can only be explained by increasing population pressure on the tract. As the population in this basin is increasing, people are residing at those places which in normal circumstances would have never been chosen as the place of settlement site.

The settlements located in the basin are mostly agricultural in nature. But there are some other settlements also mostly the market places such as Nayabazar (NBA), administrative centres such as Soreng and forest blocks which are non-agricultural in nature. In the basin under study, there are five villages dominated by tertiary activity, 19 settlements dominated by mixed type of activity and 14 villages dominated by primary economic activity.

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