

SRIPAT SINGH COLLEGE

Govt. Sponsored:: NAAC Accredited

PO. Jiaganj, Dist. Murshidabad, West Bengal, PIN-742123

<https://www.sripatsinghcollege.edu.in/>, Email: sscollege2009@gmail.com,

Fax: (03483)256961

Department of Geography

Notice

Date: 08/07/2023

Geographical excursion will be on Namchi Village, Sikkim from 2nd to 7th October 2023,

It is notified for all 5th Semester Honours Students of department of Geography that a geographical excursion will be on Namchi Village, Sikkim from **2nd to 7th October 2023**, West Bengal under Semester – V, Paper- GEO/H/CC/P11. All the students may contact the undersigned for the participation.



Head of The Department of Geography

Dr. SAKTI MANDAL
Head, Assistant Professor
Department of Geography
Sripat Singh College, Jiaganj



DR. KAMAL KRISHNA SARKAR
Principal
SRIPAT SINGH COLLEGE
Jiaganj, Murshidabad

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To,

The Principal

Sripat Singh College, Jiaganj, Murshidabad

Date: 08/07/2023

Subject: Request for Permission for Geographical Excursion for Honors Students

Dear Sir/Madam,

I am writing to request permission to organize a geographical excursion for the Honors students of Semester - V. This excursion will serve as an important part of our academic curriculum, allowing students to gain practical experience and a deeper understanding of various geographical concepts studied in class.

We propose to visit Namchi Village, Sikkim from 2nd to 7th October 2023. The visit will offer an opportunity for the students to study socio-economic as well as geographical features, such as landforms, climate, ecosystems, etc., which are highly relevant to their ongoing studies. The trip will be accompanied by faculty members Dr. Ajoy Debnath and Mr. Biswajit Chowdhury, who will guide and supervise the students during the excursion.

We assure you that all necessary safety measures will be taken, and a detailed itinerary, including transportation and accommodation arrangements, will be submitted for your review prior to the excursion.

We kindly request your approval and support for organizing this academic excursion, as it will significantly enhance the learning experience of the students.

Thank you for considering our request. We look forward to your positive response.

Yours sincerely,



Dr. SAKTI MANDAL

Head, Assistant Professor

Department of Geography

Sripat Singh College, Jiaganj



SRIPAT SINGH COLLEGE

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DEPARTMENT OF GEOGRAPHY

Date: 20/09/2023

To,
The Principal
Sripat Singh College,
Jiaganj, Murshidabad, Pin- 742123

Sub: Prayer for withdrawal of 25,000.00 (fifteen thousand only) for (expenditure funds)

Geographical excursion from 2nd to 7th October 2023.

Respected Sir,

I would like to inform you that, the Department of Geography, Sripat Singh College, is going to arrange a Geographical Excursion to Namchi Village, Sikkim from **2nd to 7th October 2023** taking B.Sc. 5th Semester Honours students guided by two respected teachers of the Department.

So, I request you to allow me to draw the above-mentioned rupees as an expenditure purpose for the said educational tour and obliged.

Thanking You

Sakti Mandal

Head of the Department of Geography

Dr. SAKTI MANDAL
Head, Assistant Professor
Department of Geography
Sripat Singh College, Jiaganj

**List of Students of Semester - V (Hons)
for Geographical Excursion Namchi Village, Sikkim from 2nd to 7th October 2023**

NAME	AGE	SEX
BIPASHA DAS	19	F
ANWESHA SAHA	19	F
ARGHA GHOSH	20	M
SUPRIYA MONDAL	19	F
SIMRAN SARKAR	20	F
SOUMYAJIT PAL	20	M
SABNUR AKHTAR	20	F
SAMSUNNEHAR KHATUN	19	F
MOMOTAJUR RAHAMAN	22	M
AKTARUNNESH KHATUN	19	F

NAFISA LIJA	20	F
SARIJUL SK	21	M
KRISHNA DAS	19	F
NIPA SARKAR	19	F
PRIYA MONDAL	19	F
JOYTI MONDAL	20	F
ARUPANANDA BHADURI	20	M
MUSTAK AHMMED	21	M

SAMPURNA ROY	20	F
SHREYA SINHA	19	F
MEHERUNNAHAR	21	F
JESMIN JAHAN DOLY	20	F
SUBARNA MONDAL	21	F
PRIYANKA MONDAL	20	F
HASMOT ALI	20	M
ASIF ALI	20	M
RAMEN DAS	20	M
TARAK DAS	20	M

ADITYA PARDHAN	20	M
SAYAN PAUL	20	M
GOPAL MONDAL	21	M
SURATH MONDAL	20	M
EMON RAHAMAN	20	M
KOBIRUL HASAN	23	M
TOHIRUL ISLAM	20	M
NUR AMIN	20	M
MD ALAMIN	20	M

Photographs of Geographical Excursion Namchi Village, Sikkim from 2nd to 7th October 2023



UNIVERSITY OF KALYAN

FIELD WORK BOOK

SOCIO-ECONOMIC STRUCTURE OF
TATHANGCHEN AREA OF GANGTOK
DISTRICT OF SIKKIM

BY ARGHA GHOSH

ROLL :- 2115247 NO:- 2189030

REGN NO: - 091523 SESSION:- 2021-2022

SEMESTER :- BSC GEOGRAPHY 5th SEMESTER



Azimganj, West Bengal, India

Station Rd, 87J5+8R2, Azimganj Station Rd, Azimganj, Jaganj Azimganj, West Bengal 742104, India

Lat 24.230798°

Long 88.259555°

02/10/23 06:50 PM GMT +05:30

Google

GPS Map Camera

ACKNOWLEDGEMENT:-

A field Report is a partial fulfilment of B.Sc. HONOURS 5th SEMESTER of Kalyani University. In the very worth the physical and socio-economic aspect of Tathangchen Area, in Gangtok, Sikkim - 737101, India has been represented almost all minute details.

Firstly, I expressed gratitude to head of the Dept. Dr. Sakti Mandal sir and professor Dr. Ajay Debnath sir to make our field study successful in short duration with their appropriate and convenient planning and by providing their valuable advice to us.

Lastly, I am thankful to all of my good wishers, teachers, parents and classmates for spending their time in helping and giving support whenever I need it in fabricating my project.

CONTENTS

- 1 A BRIEF HISTORY OF SIKKIM STATE
- 2 SOCIO-ECONOMIC PROFILE
- 3 TRANSPORT AND COMMUNICATION
- 4 CONCLUSION

CHAPTER-1

A BRIEF HISTORY OF SIKKIM STATE

INTRODUCTION

Sikkim is a small mountainous state in the Eastern Himalaya Region in India. It covers an area of 7,096 km², extending approximately 114 km from North to South and 64 km from East to West. The state is situated between 88°00'58" East longitude to 88°55'25" East longitude and 27°04' and 28°07'48" North latitudes. It is surrounded by vast stretches of Tibetan plateau in North, Chumbi Valley & Kingdom of Nepal in the west with nine sub-divisions and eight towns the state has four districts namely East, West, North and South.

The state being part of inner ranges of mountains of Himalayas has no open valley and no plains but varied elevations ranging from 300 to 8583 m. above mean sea and snow bound land.

The Himalayas is our country's pride and is a symbol of value system. They are in almost every way superlative. They are the highest mountain range on Earth with just about all the highest mountains in them. They form one of the greatest physical and cultural barriers and they are stupendously beautiful, still relatively unspoilt and full of fascinating human and

and natural life. A comprehensive study on the environmental and social changes in the entire Himalayas maybe the need of time to identify and justify the methodology of change, which is consisted with preservation of Himalayan values, heritage, natural resources of the area.

► AREA INTRODUCTION :-

The total geographical area of the state is 7096 sqkm, but according to 1958-60 survey operation and the Gazetteer of sikkim, the land area under different utilization catagories in 7299 sqkm. Detailed break up is as follows :-

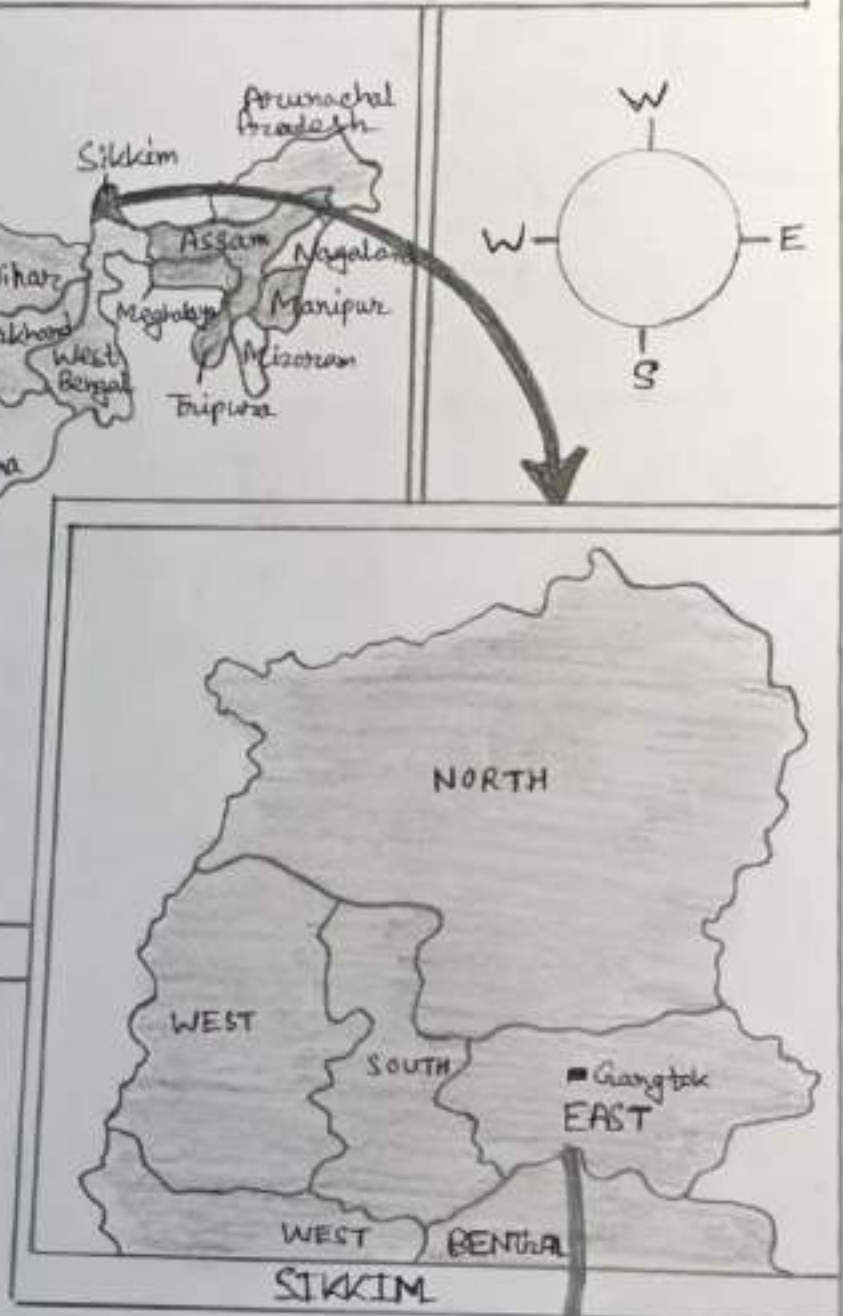
Land Use pattern	Area in '000ha	Area in %
Barren Land	209.01	28.28
Land put to Non-agricultural use	69.96	9.58
Permanent pastures and grazing land including cultivable waste	102.49	14.40
Land under miscellaneous tree crops and grasses	4.17	0.57
Forest land	265.21	36.34
Land under operational holdings	79.06	10.83
Total	729.90	100.00

Source: Internet

LOCATION MAP



INDIA



SIKKIM



EAST SIKKIM

NATURAL RESOURCES :-

The Sikkim Himalayas has excellent scope for value added eco-tourism and traditions, unique in Art, Culture, and folk dances live in perfect harmony and it is one of the most peaceful states in the country. There is strong sense of community living with district commitment in the people to serve the society. They have the strong sense of volunteerism.

The state is bestowed with abundant natural resources. covering just 0.2% of the geographical area of the country, it is tremendous biodiversity and has been identified as one of the Hot spot for biodiversity. The Sikkim Himalayas that spread over Sikkim and the hill region of Darjelling harbors more than 26% of the flowering plants reported in the country and known to be an important phytogeographical reserve of the country. Species wise, it has about 4500 Flowering plants, 550 orchids, 227 High altitude lakes and wetlands and over 104 rivers and streams.

Table: Wild Biodiversity at a Glance
Flowering plants : 4500
Mammals : 144+
Butterflies : 600+
Birds : 550
Fishes : 48
Rivers and streams : over 104
Lakes and Wetlands : 227

Source: Internet

The abrupt telescoping of the terrain from the hot steamy foothill valleys to the arctic cold of the snow capped peaks, which has produced the marked altitudinal zonation in the rainfall, humidity, climate and vegetation is also responsible for the great variety and numerical abundance of the resident bird life, making Sikkim perhaps the richest area of its size any where in the world.

Forestry is the major land use in the state and nearly 82% of the total geographical area of the state is under the administrative control of the state forest department. This proportion is one of the largest in the country. The forest cover of the state is 46% of the total geographical area of the state.

This figure is one of the largest in the country.

There is one high largest in the country.

There is one high altitude National Park and Six Wildlife Sanctuaries, which together constitute over 31% of the total geographical area of the state.

Table: Sikkim Forest	Recorded Area
Reserve Forest	5452 sq km
Protected Forest	389 sq km
Total	5841 sq km
Very Dense	458 sq km
Moderately Dense	1904 sq km
Total	3262 sq km
Total Forest and tree cover	3284 sq km

Source: Internet

A BRIEF PAST HISTORY :-

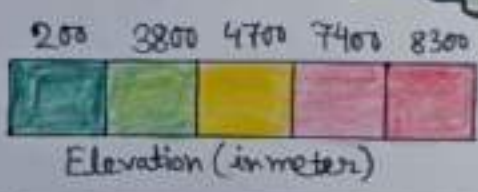
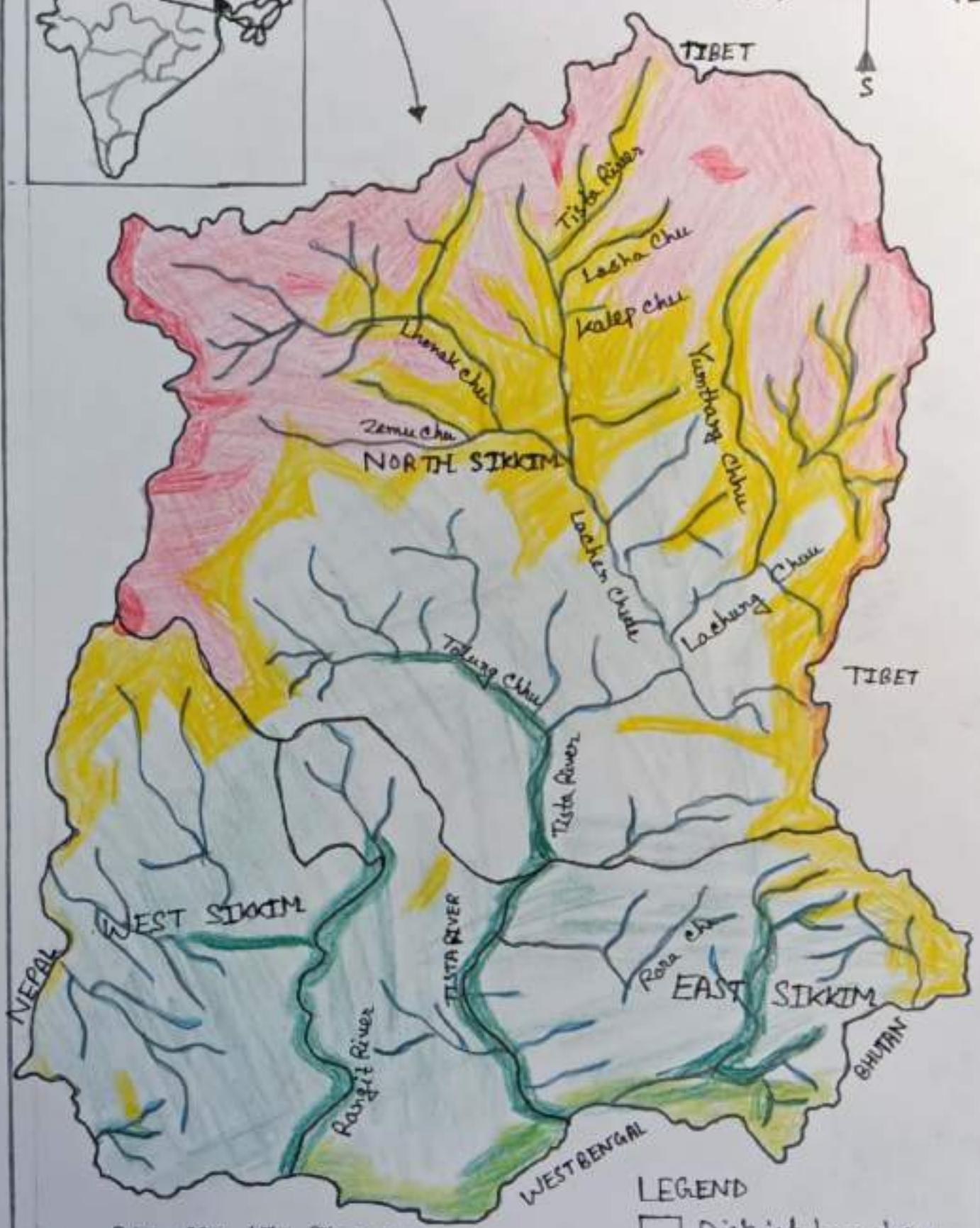
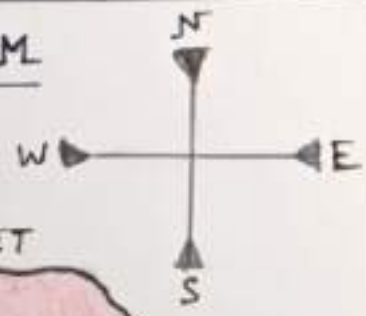
The Tenth enogyal (Maharajah) of Sikkim after completing his studies in Oxford University in 1908 was given the charge of Forests, Monasteries and Schools. The Forest Department was constituted in 1909. As per notification dated 15.05.1911 (F.D), The Maharajah of Sikkim was declared a "Forest officer". In 1909 the then demarcation of the forest areas of the then support system and required full protection were set. A part as Reserve forests. These forests were to be left in their natural state and heavy penalties were imposed for illegal activities in these areas. Other forest areas that could be worked on a small scale in order to meet the timber and fuel wood requirements of the local populace were carved out in the vicinity of village. Those forest that were set a part in this manner to meet the wood requirement of the local people were called Khormal forests and those that were set a part of grazing grounds for the village cattle were called Groucharan forests. Forest rule and regulation were first of all instituted during this period.

PHYSIOGRAPHY:-

Physiographically, Sikkim can be said to have its feet in the ocean and its head in the sky. The altitudes vary from 300 meters to 8500 meters above mean sea level. The entire state is a young mountain system with highly folded and faulted rock strata at many places. It encompasses the lesser Himalayas, Central Himalayas and the Tethys Himalayas. Great Mountain running from 3000 meters to 8500 meters in height separates the state from surroundings. In fact, it has no flat piece of land good size and where. Major portion is covered by the pre-cambrian rock and is much younger in age. The rock type consists of phyllites and Schists and therefore, the slopes are highly susceptible to weathering and prone to erosion and landslides. The trend of the mountain system is in general east-west direction. The mountains rise in elevation northward. The northern portion of the state is in general east-west direction. The mountains rise in elevation northward.

Soil of the region being the nutrient medium, is indispensable in vegetations.

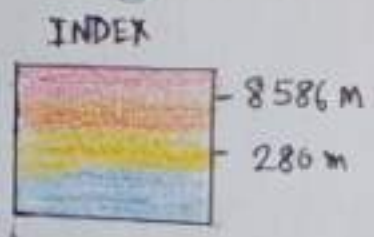
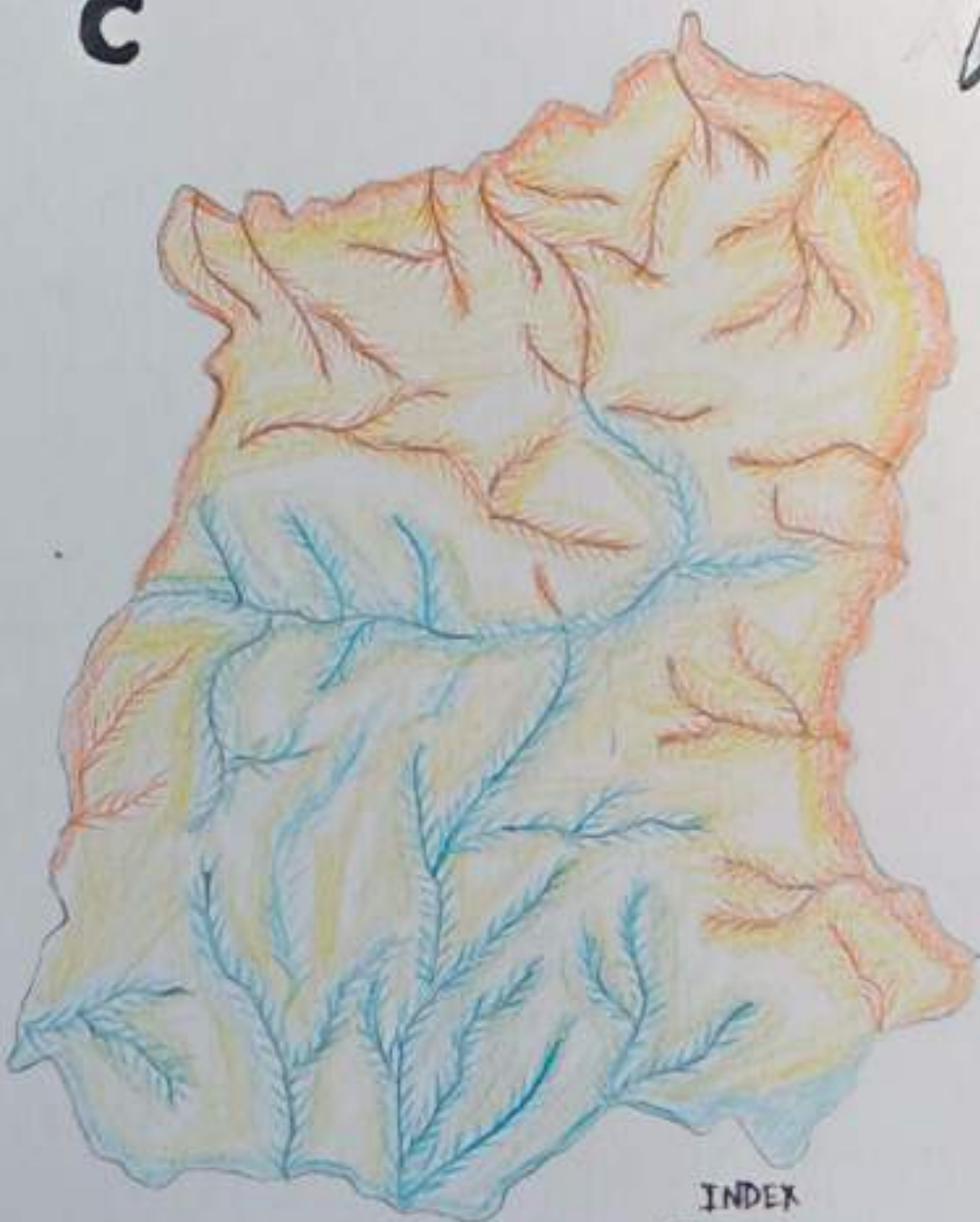
PHYSIOGRAPHY OF SIKKIM



- LEGEND
- District boundary
 - Major drainage

ELEVATION MAP OF SIKKIM

C



Source: Nature.Com

88°0'0"E 88°0'0"E

27°0'0"N 27°0'0"N

27°30'0"N 27°30'0"N

27°0'0"N 27°0'0"N

88°0'0"E 88°30'0"E

GEOLOGY OF SIKKIM

General Description:

Sikkim or Sikkim Himalayas is mostly covered by Proterozoic metapelites of low to medium grade and Buxa carbonate-quartzite association, high gneisses with deformed granite gneiss. The Palaeozoic - Mesozoic rocks include Gondwana - equivalent Rishi group and Tethyan rocks. Each of these rocks ranging in age mostly from Proterozoic to Mesozoic has distinct tectono-sedimentary, magmatic, metamorphic and structural characteristics.

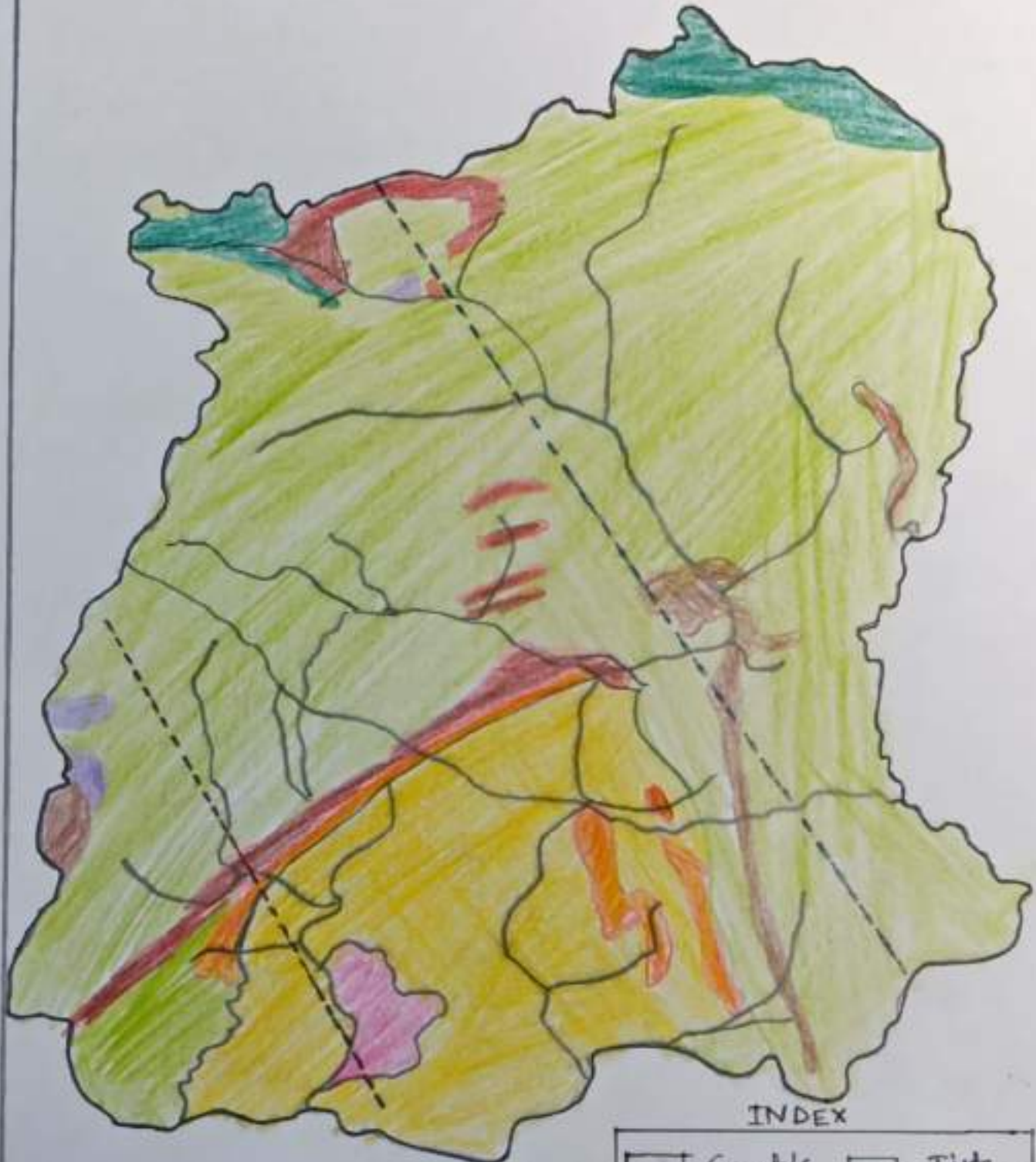
The major lithotypes of Sikkim region belong to the eastward extension of rock types of Nepal Himalaya which complex fold - thrust tectonostrophic sequences forming nappes, windows klippen etc.

The phenomenon of Inverted Metamorphism seen in the Sikkim Himalaya, problem also pertains to the mechanism by which Tethyan Phanerozoic sequence escaped regional metamorphism.

Southern Part or Gangtok Division:-

Different types of rocks and minerals have been found in South district. Some of them are quartzite, gneiss granite etc. which are not useful for the agricultural purpose. The hard rocks in agricultural fields are difficult to break and remove. The soft rock strata, after breaking of materials like phylites conglomerates, pebbles / soil etc. are to some extent useful for agricultural field. In general, the Buxa formation is better suitable for cultivation compared to the Daling.

GEOLOGY OF SIKKIM



INDEX

= Gangtok Lineament	= Tista Lineament
- Chungthang Formation	- Garzuthang Formation
- Igneous Intrusive	- Rangit Window
- Lingtse Gneiss	- Tethyan Sediment
- Dorjelling Gneiss	

Source: Sciencedirect. Com

SOIL OF SIKKIM

General Definition :-

Sikkim enjoys a wide range of climate, physiography, geology and vegetation that influence the formation of different kinds of soil. Soil occurring in different landforms are studied in respect of their morphology, physical and chemical characteristics.

The soil of Sikkim belong to 3 orders, 7 suborders, 12 groups and 26 subgroups. It is observed that inceptisols are dominant (42.84%). Followed by Entisols and Mollisols occupied 42.52% and 14.64% respectively. The soil of the south district in general have been derived from parent rocks such as sandstone, phyllite, schist, Gneisses are most dominant among them. The soil are generally acidic to very acidic in reaction having soil pH between 5.0 and 6.0.

Soil Fertility :-



Based on the soil tested by Sikkim state Soil Testing Laboratory, fertility status of soil are prepared following the standard ratings into low, medium and high soil fertility classes in respect of each nutrient, The nutrient indices was calculated by using the formula -

$$\text{Soil nutrient index} = \left(\% \text{ low} \times 1 + \% \text{ Medium} \times 2 + \% \text{ High} \times 3 \right)$$

SOIL MAP OF SIKKIM



INDEX

	Loamy skeletal		Fine loamy soil
	Coarse weak		Loamy shallow soil
	Coarse rocky		Coarse loamy soil
	Skeletal rocky		Fine loamy soil
	Shallow depth		Loamy rocky soil

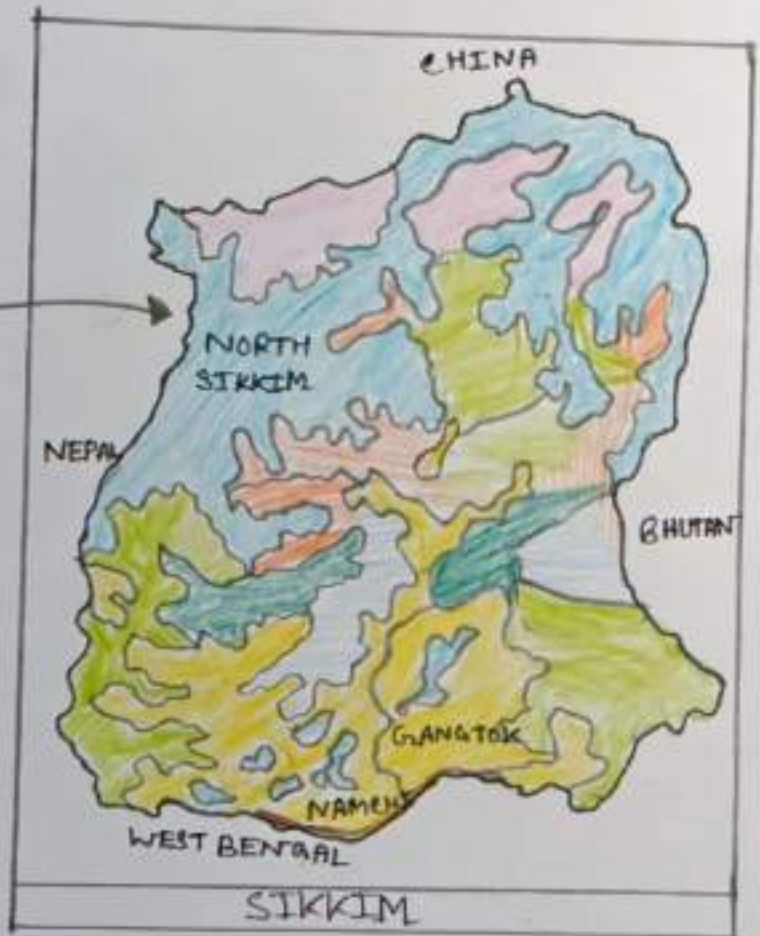
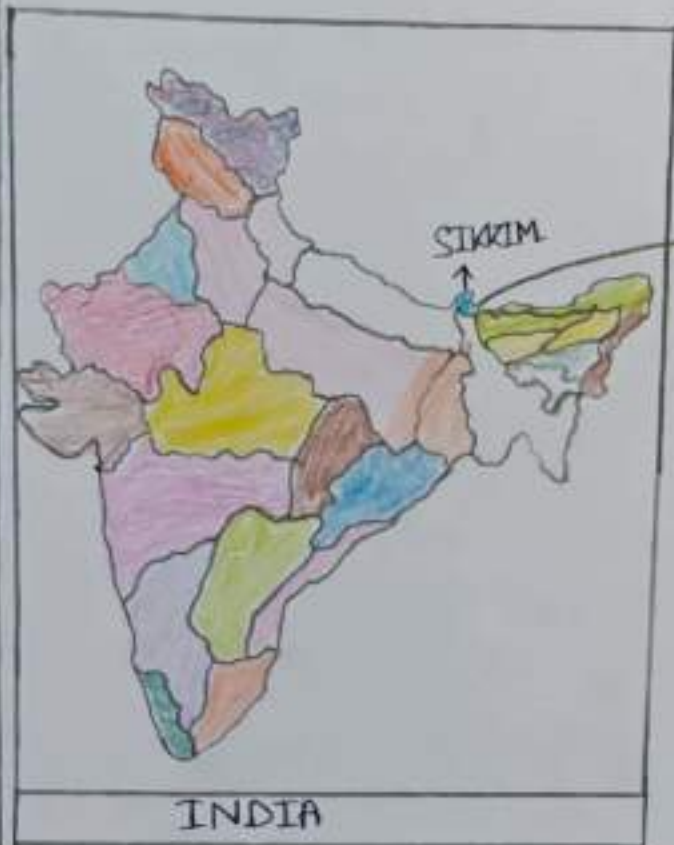
Source: Rashorechegate.com








VEGETATION OF SIKKIM

Forestry is the major land use in the state and nearly 82% of the total geographical area of the State is under the administrative control of the state Forest Department. This portion is one of the largest in the country. The forest cover of the state 4% of the total geographical area of the state. This figure is one of the largest in the country. There is one of the high altitude National Park (cum Biosphere Reserve) and six Wildlife Sanctuaries which together constitute over 31% of the total geographical area of the state. Covering just 0.2% of the geographical area, Sikkim shows tremendous biological diversity.

SIKKIM RECORDED FOREST AREAS	
Reserved Forest	5452 sq km
Protected Forest	389 sq km
Total	5841 sq km
Very Dense	458 sq km
Moderately Dense	1904 sq km
Total	3262 sq km
Total Forest and tree cover	3284 sq km

VEGETATION MAP OF SIKKIM



- | | |
|-------------------------------------------------------------------------------------|---------------------------------------|
|  | Very moist Sal bearing forest |
|  | Himalayan chirpine Forest |
|  | East Himalayan wet temperature forest |
|  | Oak Rhododendron Forest |
|  | Cultivable and other land |
|  | Snow Covered Area |
|  | East Himalayan Mixed Forest |

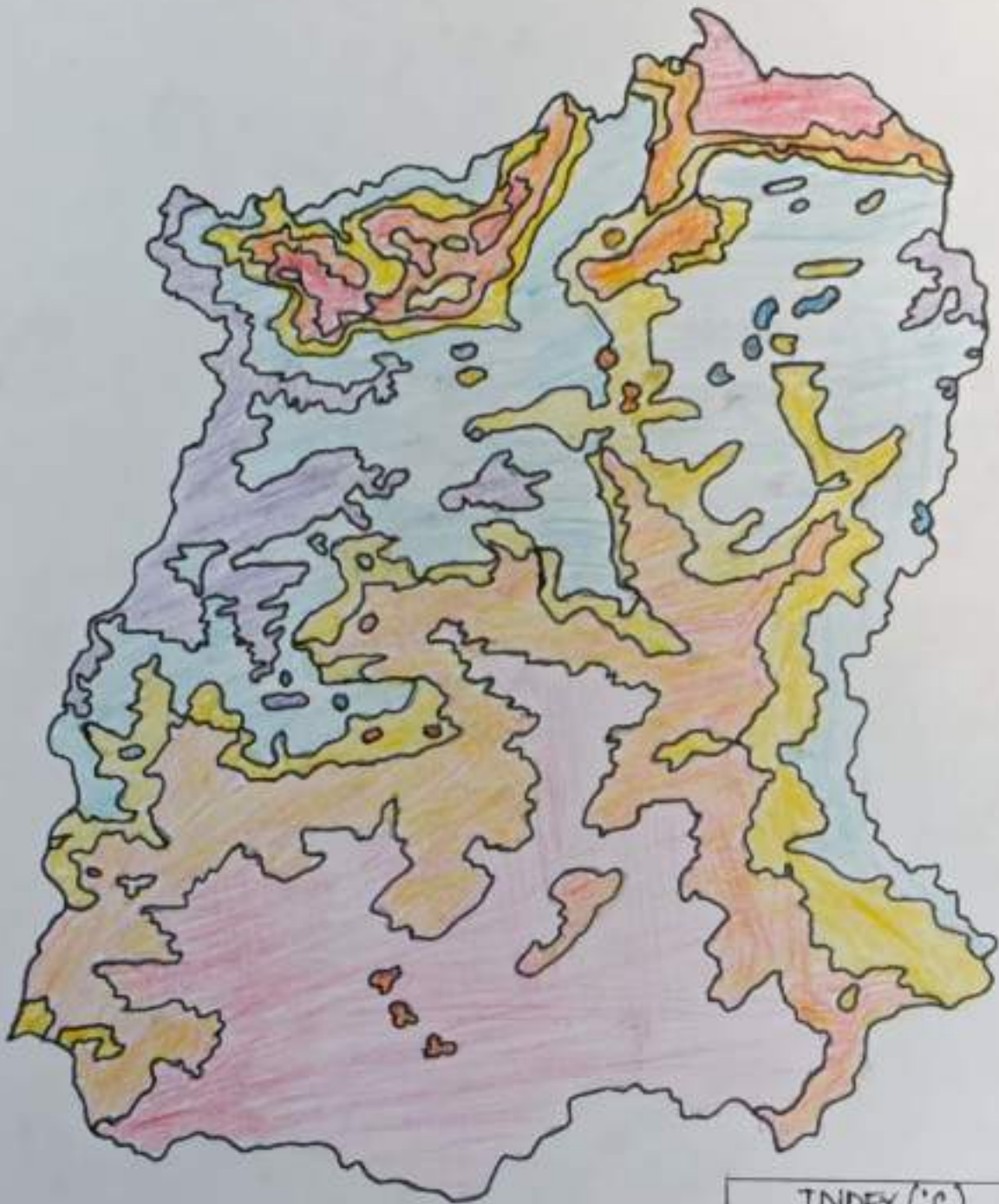
CLIMATE AND TEMPERATURE :-

Climatically, Sikkim experiences variable temperature with summer in foothills and freezing winter on the high mountains. The climate of the state has been divided broadly into the tropical, temperate and alpine zones. The general trends of decrease in temperature with increase in altitudes hold every where. For most of the period in a year the climate is cold and humid as rainfall occurs in each months. The area experiences a heavy rainfall due to its proximity to the Bay of Bengal. The state receives an average annual rainfall of 500 cm, which is the highest in the eastern Himalayas. The high density of rainfall causes extensive soil erosion and frequent landslides. The pre-monsoon rainfall occurs in April-May and the Monsoon occurs normally from the month of May and continues up to early October. The temperature varies with altitude and slope. Maximum temperature is recorded usually during the month of July and August and minimum during December and January. During the period from May to September, fog becomes a common feature in this area. Also during winter, snowfall is common in high altitude places. The mean temperature in the lower altitudinal zones varies between 4.5°C to 18.5°C . where as at

higher altitudinal zones, it varies from 1.5°C to 9.5°C with biting cold experience at high altitude places in the winter months.

The climate of the state has been roughly divided into the Tropical, Temperate and alpine zones. For most of the periods in a year, the climate has cold and humid as rainfall occurs in each month. The area experiences a heavy rainfall due to its proximity with the Bay of Bengal. The rainfall in North District is comparatively less than of the other districts.

SIKKIM'S LAND SURFACE TEMPERATURE



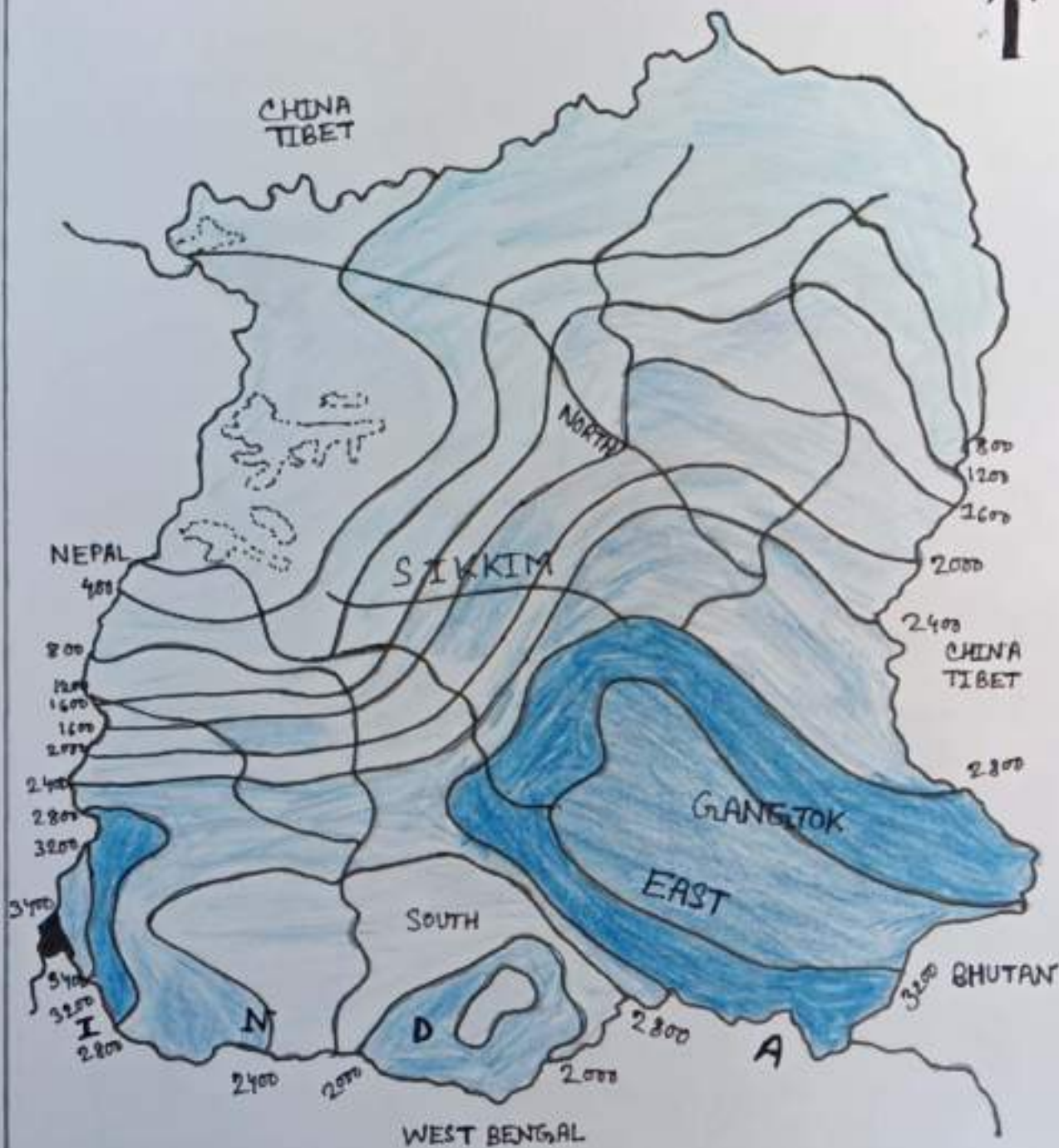
INDEX (°C)	
	< 0°
	0° - 10°
	10° - 20°
	20° - 25°
	25° - 31°

Source: MODIS, MOD11A1.0G1
Terra Land Surface Temperature

RAINFALL:-

An examination of available rainfall data shows that the mean annual rainfall is minimum at Thangu (82mm) and maximum at Gangtok (3474mm). An isohyetal analysis rainfall areas (i) south-east quadrant, including Nangan, Singhik, Sikchu, Gangtok, Rongli etc. (ii) south-west regions, there is low rainfall region e.g. Namchi. Rainfall in this area is a area in the North-West Sikkim which gets very little rainfall (even less than 4.9mm). This area is having mainly snow covered mountains. Rainfall is heavy and well distributed during the months from May to early October. July is the the wettest month in most of the places, The intensity of of rainfall during south-west monsoon season decreases from south to North, while the distribution of winter rainfall is in the opposite order. The highest annual rainfall for the individual station may exceed 5000mm. and average number of rainy days (days with rain of 2.5mm. or more) ranges from 100 at Thangu to 184 at Gangtok.

RAINFALL MAP OF SIKKIM, 2022



LEGEND

	Above 3400		1000 - 2000
	3200 - 3400		1200 - 1600
	2800 - 3200		800 - 1200
	2400 - 2800		400 - 800
	2000 - 2400		Below 400

Source: Internet

River of Sikkim

Teesta River:-

Teesta River is a 414 km (257 mi) long river that rises in the Panchenri Mountain of eastern Himalayas, flows through the Indian states of Sikkim and West Bengal and subsequently enters Bangladesh through Rangpur Division. In Bangladesh, it falls into Brahmaputra River which after meeting some other major rivers of Bengal Delta finally falls into the Bay of Bengal. It drains an area of 12,540 km² (4,840 sq mi). In India it flows through Mangan District, Gangtok District, Pakyong District, Cooch Behar Districts, and the cities of Rangpo, Jalpaiguri and Mekhliganj. In Bangladesh, it flows through Lalmonirhat District, Rangpur District, Kurigram District and Gaibandha District. Teesta is the largest river of Sikkim and second largest river of West Bengal after the Ganges.

Location	
Country	<ul style="list-style-type: none">• India• Bangladesh
States	<ul style="list-style-type: none">• Sikkim, India• West Bengal, India• Rangpur, Bangladesh
Important Bridges	<ul style="list-style-type: none">• Chungtang Teesta Bridge• Sirwani Teesta Bridge

Important Bridges	<ul style="list-style-type: none"> • Indreni Bridge • Rangpo Teesta Bridge • Melli Teesta Bridge • Teesta Bazaar Bridge • Coronation Bridge • Sevoke Railway Bridge • Joyee Setu • Jalpaiguri Teesta Bridge
-------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

District's	<ul style="list-style-type: none"> • Mangan District • Gangtok District • Pakyong District • Kalimpong District • Cooch Behar District • Jalpaiguri District • Rangpur District • Kurigram District • Lal Monirhat District
------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Physical Characteristics

Source	Pauhunri, Zemu, Glacier, Gurudongmar Lake
• location	Sikkim, India
• elevation	7,128m (23,386ft)
Mouth	Brakmaputra River
• location	Phul bhari Upazila, Gai bandha, Bangladesh
Length	414km

RIVER MAP OF SIKKIM



LEGEND	
--->	State Boundary
--->	State Boundary
- - ->	District Boundary
⊙	State Capital
•	District HQ.

Source :- www.inapsof.india.com

PHYSICAL PHOTOGRAPHS



CHAPTER-2

SOCIO-ECONOMIC PROFILE
OF TATHANGCHEN VILLEGE
OF GANGTOK DISTRICT

Economic Profile:-

The economy of Sikkim is mainly based on Agricultural and Animal Husbandary. Approx. 11% of the total geographical Area is under Agri Culture is of the mixed type and still at the subsistence level rather than commercial level. The work force Participation rate as per 1991 census is 40.44%.

The female participation rate in sikkim is also much higher than the national average. Cultivators account for the greater majority of the people in the state. Their percentage is 57.84%.

Agricultural labourers as a whole constitute only 7.81% of the workers in the state.

House holds and other industries are negligible, but other worker (Tertiary sector) at the workers level represent a good percentage of population. The decreasing

ratio of other worker at the state level of economic diversification. The importance of

Agriculture can be judged by the high % of Population approx. 65% engaged in it. Animal husbandry is an integral part of the household economy of the region. There are certain house

held industries also which substantially adds to house hold incomes. The past one and half

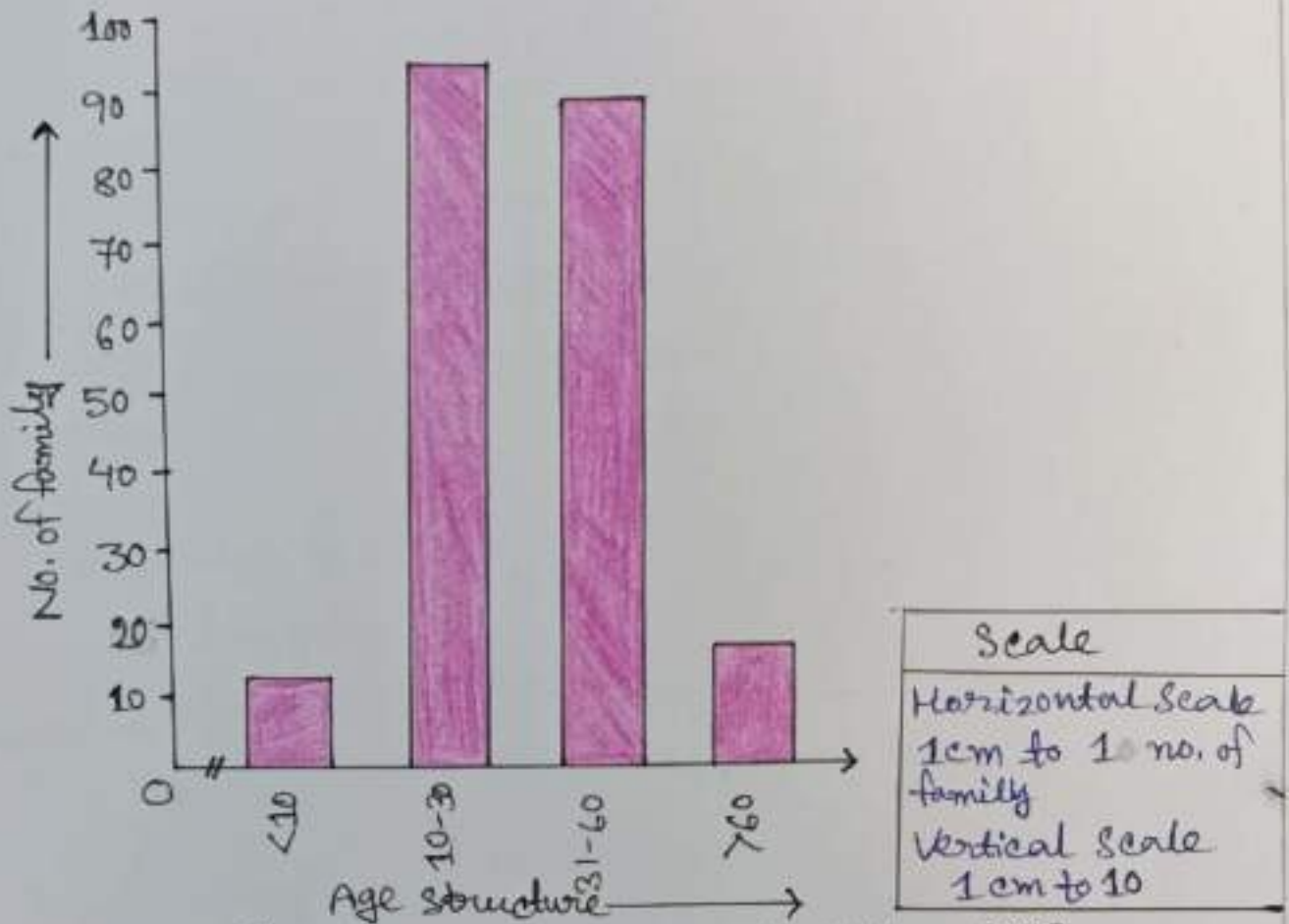
Demography :-

Sikkim is a multi-ethnic state and broadly the population can be divided into Tribal and Non-Tribal groups. As per the 2001 census of India, the total population of the state is 5,40,851 whereas in 1991 it was 4,06,457 only. The Decennial growth in 1981-91 was 28.47% whereas for 1991-01 it is 32.98%. The overall density of population in the state is 76 per sq km. East District is the most population (population density 257) and North District is least populated (population density only 10). Sex ratio (Females per thousand Male) in 1991 was 878, whereas in 2001 is 875. There are only 8 urban towns and urban population is 11.10% of total population. Schedule Caste and Schedule Tribe population is 5.93% and 22.36% respectively. North District is Tribal District as it has about 55.38% tribal population. Literacy rate is 67.68%, higher than the all India average literacy rate of 65.38%.

Per Capital GSDP is Rs 23,786=00,
Natural Growth rate is 16.90 per thousands,
Per Capital outlay on education is Rs. 1288=00,
Per Capital forest cover is 0.61 ha and the

green protection Index is .0903, highest in the country. In the year 2005-06, the per capital income is Rs 26,851=00, literacy rate is 82%, number of colleges are 11, Number of government schools are 782, number of religious organizations are 732, Forest cover 45.97%. Number of domestic tourism are 2,51,744, Number of foreign tourist are 16,523, Power Production is 165Mu, People below poverty line are 19.20% and the Annual state revenue is Rs 228.31 crores.

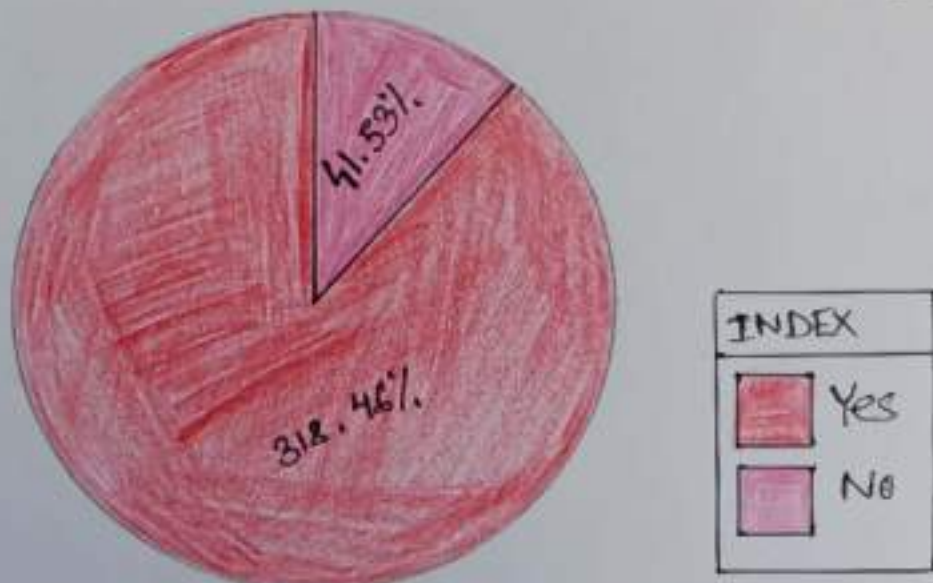
AGE STRUCTURE OF TATHANGCHEN VILLETTE OF EAST SIKKIM
BAR DIAGRAM:-



Source: Primary survey data, October, 2023

INTERNET FACILITIES
PIE DIAGRAM:-

r = 3.9 cm



Source: Primary survey data, October, 2023

Toilet Facility :-

This pie diagram is based on Toilet facility of Tathangchen village of Gangtok, Sikkim, India.

Water facility :-

This pie diagram is based on water facility of Tathangchen village of Gangtok, Sikkim, India.

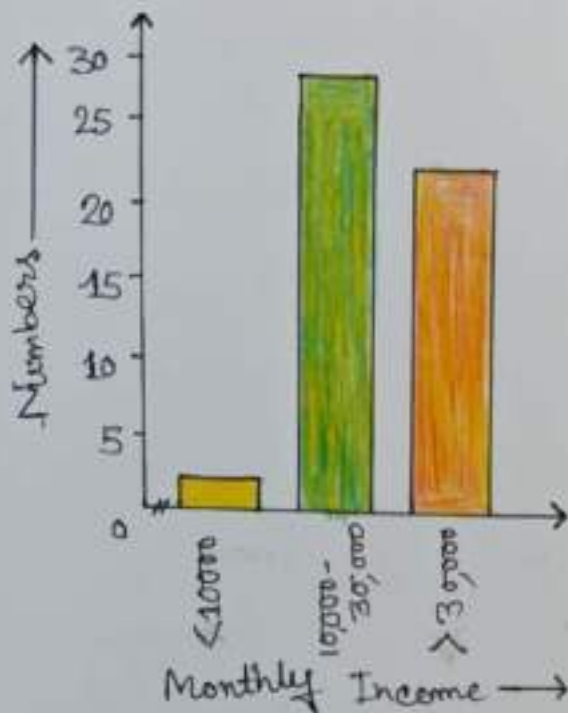
Family Income :-

This bar diagram is based on Family Income of Tathangchen village of Gangtok, Sikkim, India.

Residential Information :-

This bar diagram is based on Residential information of Tathangchen Village of Gangtok, Sikkim, India.

FAMILY INCOME:
BAR DIAGRAM:

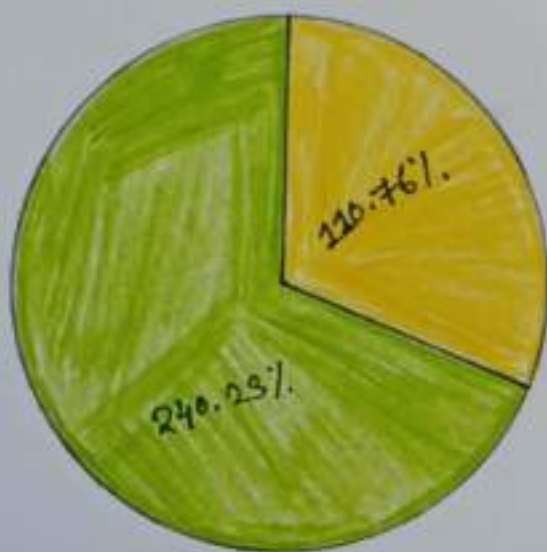


Scale
Horizontal Scale 1cm to ₹
Vertical Scale 1cm to 5

Source: Primary Survey Data, October, 2023

PIE DIAGRAM:-

RESIDENTIAL INFORMATION



$r = 3.5 \text{ cm}$

INDEX	
	Migrated
	Permanent

Source: Primary Survey Data, October, 2023

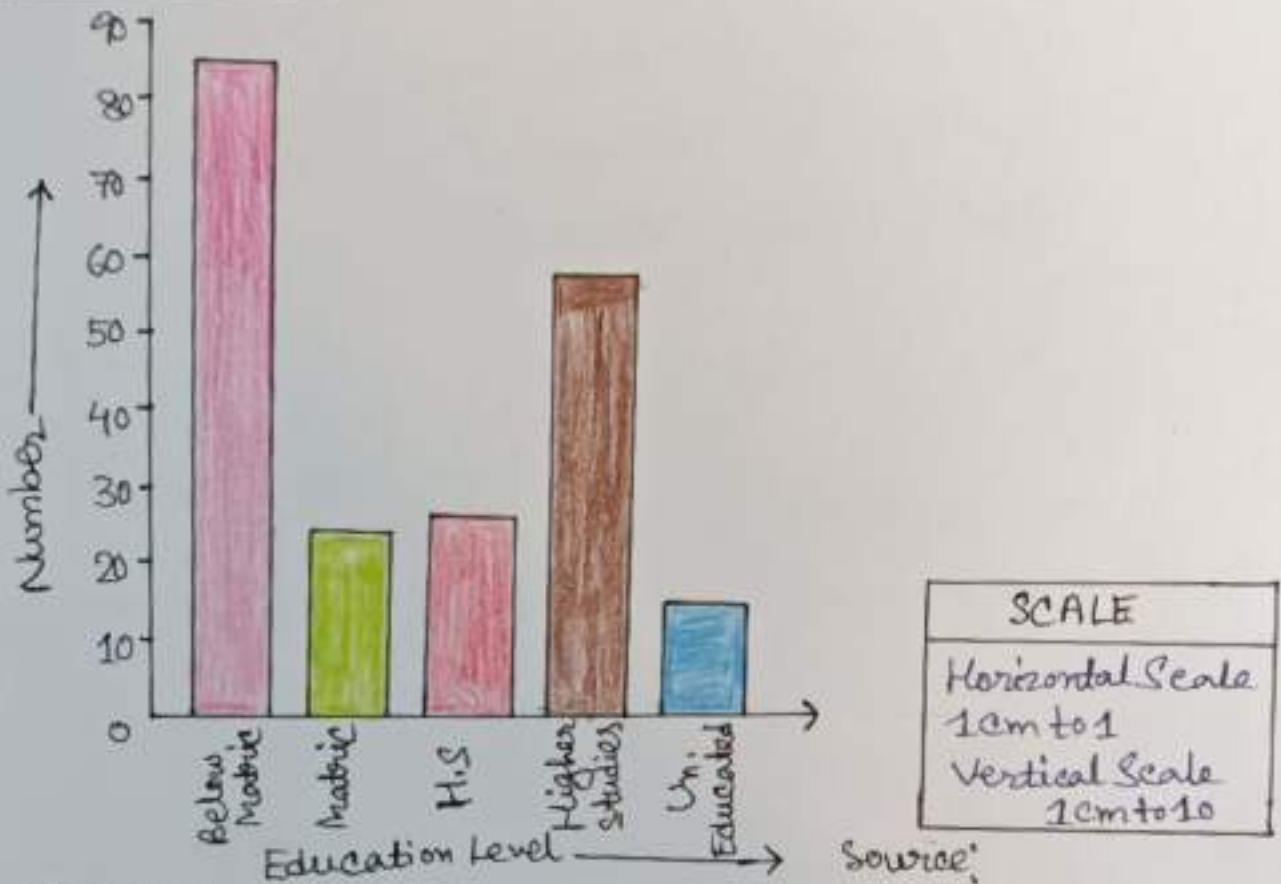
Education Qualification :-

This Bar diagram is based on Education Qualification of Gangtok, Sikkim, India.

House Condition :-

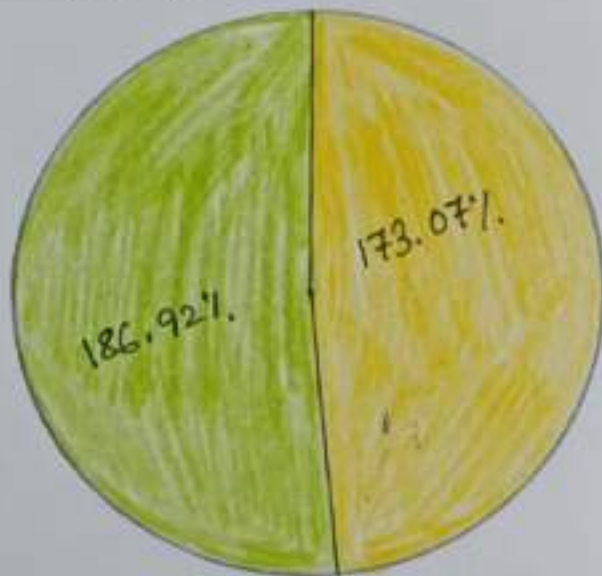
This Pie diagram is based on House Condition of Tathangchen Village of Gangtok, Sikkim, India.

SHOWING THE EDUCATION QUALIFICATION OF TATHANGCHEN VILLEGE, GANGTOK BAR DIAGRAM:-



PIE DIAGRAM :-

SHOWING THE HOUSE CONDITION OF TATHANGCHEN, SIKKIM.



$r = 3.8 \text{ cm}$

INDEX	
	OWN
	Rented

Source: Primary Survey Data, October, 2023

No of Rooms :-

This Bar diagram is based on no. of rooms information of Tathangchen Village of Gangtok, Sikkim, India.

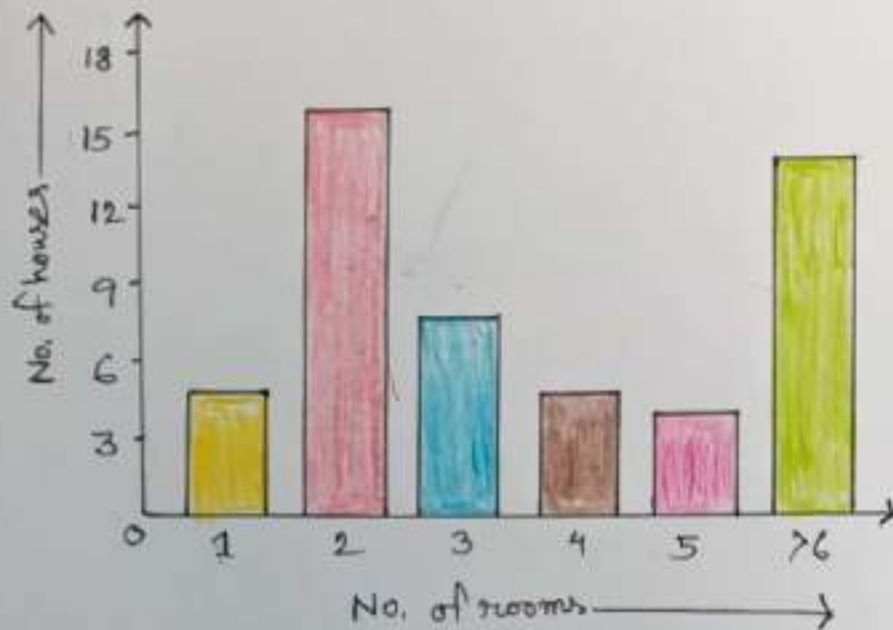
Type of House :-

This Bar diagram is based on type of house information of Tathangchen Village of Gangtok, Sikkim, India.

Caste :-

This pie diagram is based on types of Caste of Tathangchen Village of Gangtok, Sikkim, India.

SHOWING THE NUMBER OF ROOMS OF 52 HOUSES IN
 GANGTOK, SIKKIM
BAR DIAGRAM:-

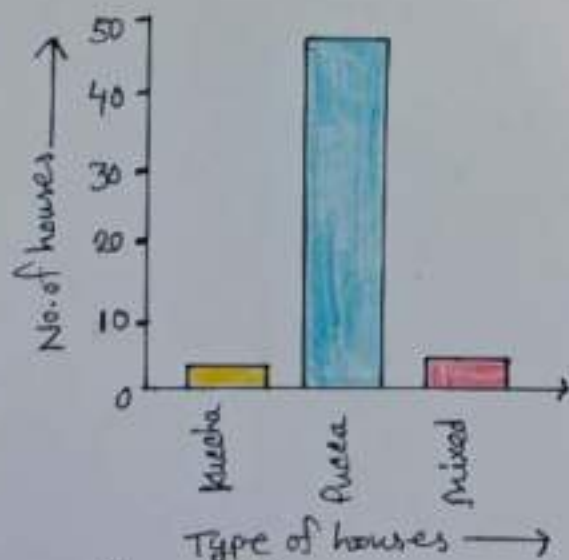


SCALE
Horizontal Scale 1cm = 1 bar
Vertical Scale 1cm = 3 houses

Source: Primary Survey Data, October, 2023

BAR DIAGRAM :-

SHOWING THE TYPES OF HOUSES OF 52 HOUSES IN
 GANGTOK, SIKKIM, INDIA

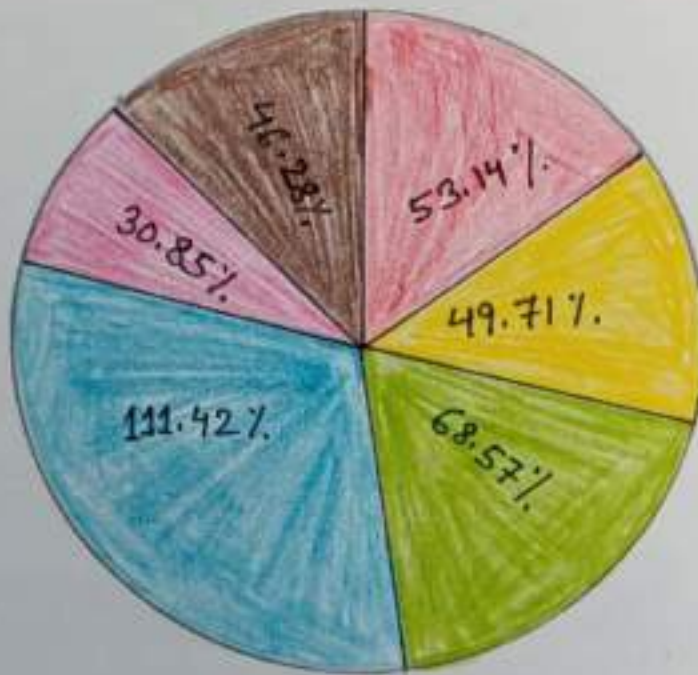


SCALE
Horizontal Scale 1cm = 1 type of house
Vertical Scale 1cm = 10 houses

Source: Primary Survey Data, October, 2023

SHOWING THE CASTE SYSTEM OF TATHANGCHEN
VILLEGE OF GANGTOK, SIKKIM
PIE DIAGRAM:-

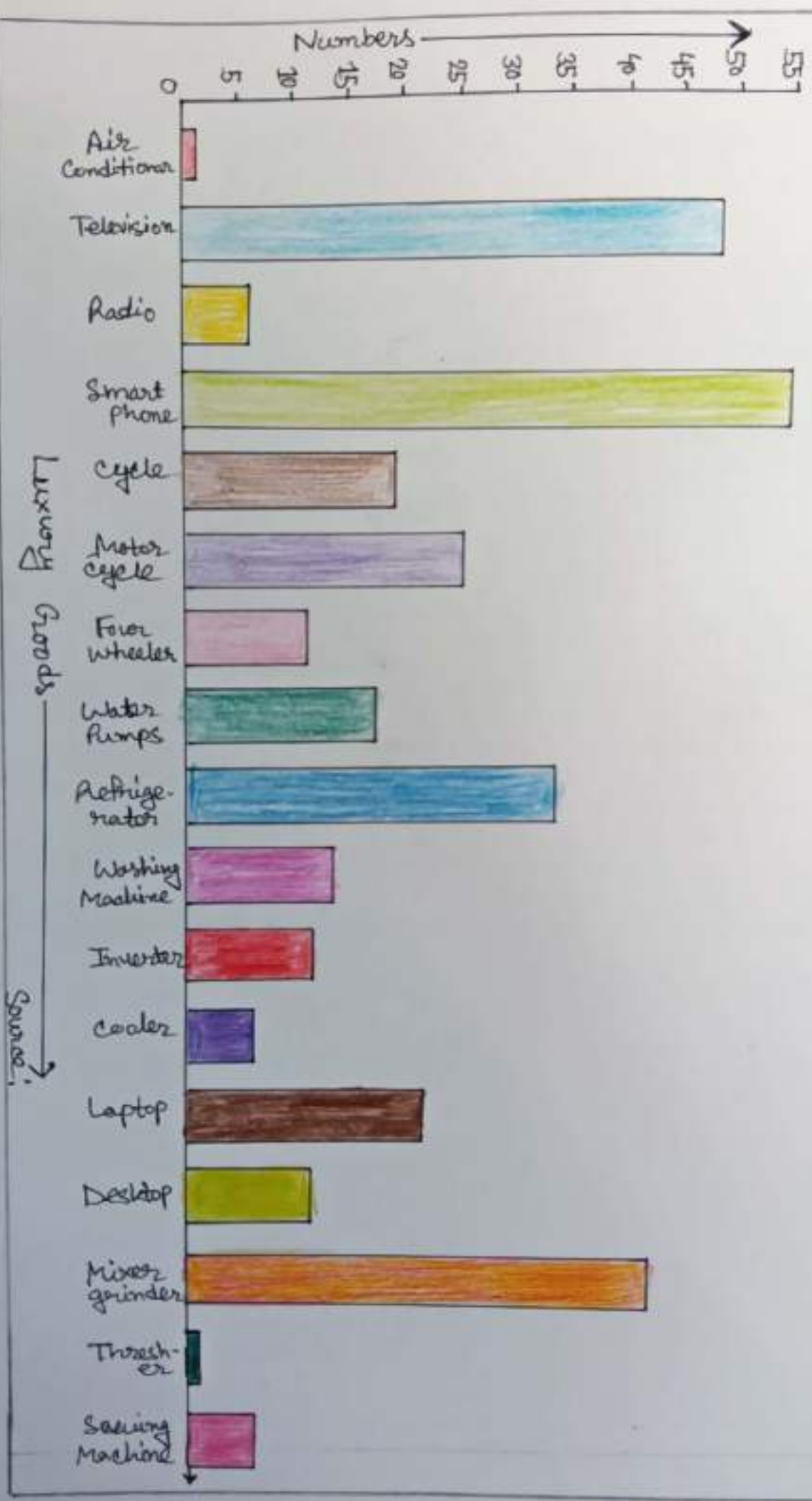
$$r = 4.4 \text{ cm}$$



INDEX	
	General
	SC
	ST
	OBC-A
	OBC-B
	Others

Source: Primary Survey Data, October, 2023

SHOWING THE LUXURY GOODS OF TATHANGCHEN VILLAGE OF GANGTOK, SIKKIM, INDIA
BAR DIAGRAM:



Source: ↓

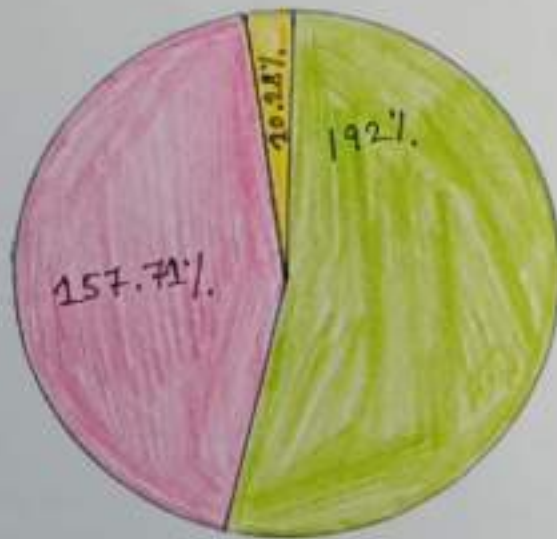
Marital Status:-

Table of Marital Status of Tathangchen
Village of Gangtok

Marital Status	Tally Marks	No.	Marital status (indogma)
Married	 	112	192°
Un-Married	 	92	157.71°
Divorced		0	0
Separated		0	0
Widow		6	10.29°
Total			360°

SHOWING THE MARITAL STATUS OF TATHANGCHEN
VILLEGE, GANGTOK, SIKKIM
PIE DIAGRAM:-

$r = 3.5 \text{ cm}$



INDEX	
	Married
	Unmarried
	Widow

Source: Primary Survey Data, October, 2023

RELIGION :

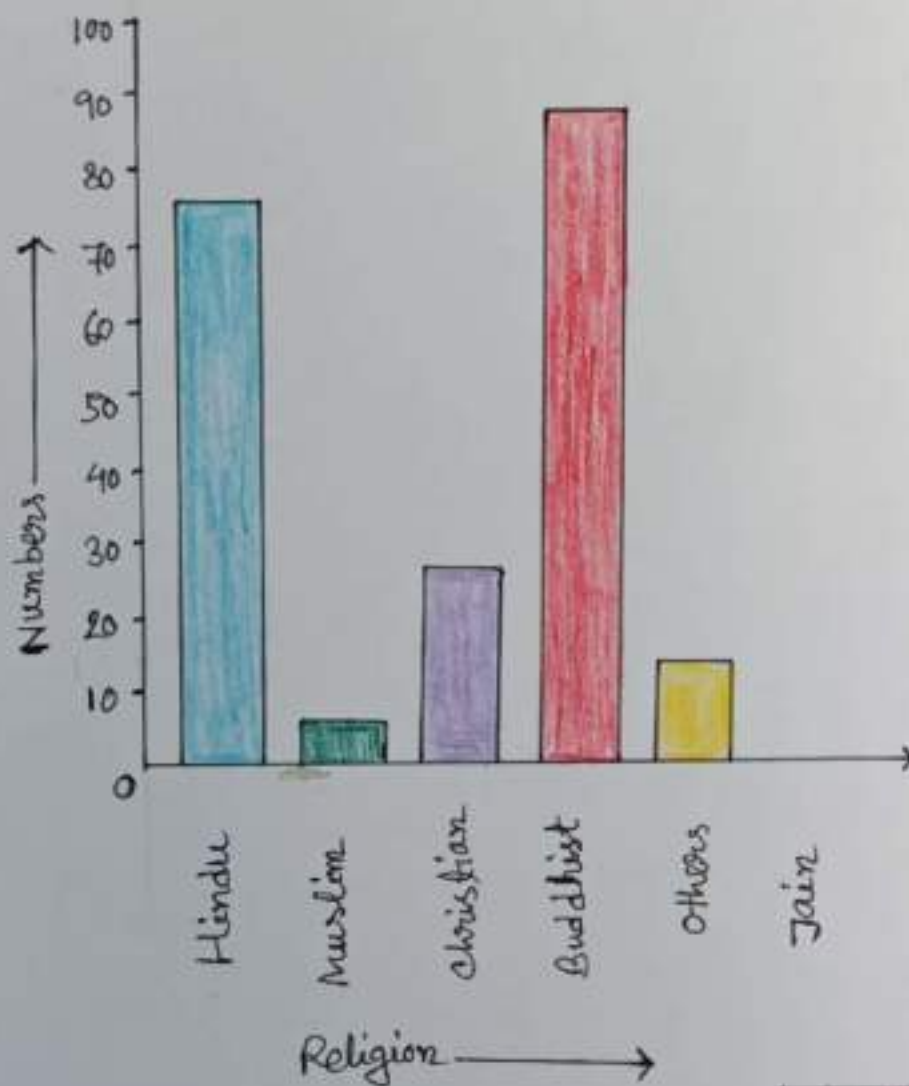
Hinduism is Majority religion in Gangtok city with 58.87% followers. Buddhism is second Most Population religion in Gangtok City with 28.15% following it. In Gangtok City, Islam is followed by 3.14%. Christianity by 9.07%, Jainism by 0.14% and Sikkim by 0.16%.

Table of Religion Category of Tathangchen :-

Religion Category	Tally Marks	Number	Scale	Number (in cm)
Hindu	 	76	1cm to 8 people	9.5
Muslim		6		0.75
Jain		0		0
Christian	 	27		3.4
Buddhist	 	88		11
Other's	 	13		1.6
Total		210		

Source: Primary Survey
Date, October 2023

SHOWING THE RELIGION OF TATHANGCHEN VILLEGE
OF SIKKIM, GANGTOK
BAR DIAGRAM!



SCALE
Vertical Scale 1cm = 10 No.
Horizontal Scale 1cm = 1 Religion

Source: Primary Survey, October, 2023

Occupation :-

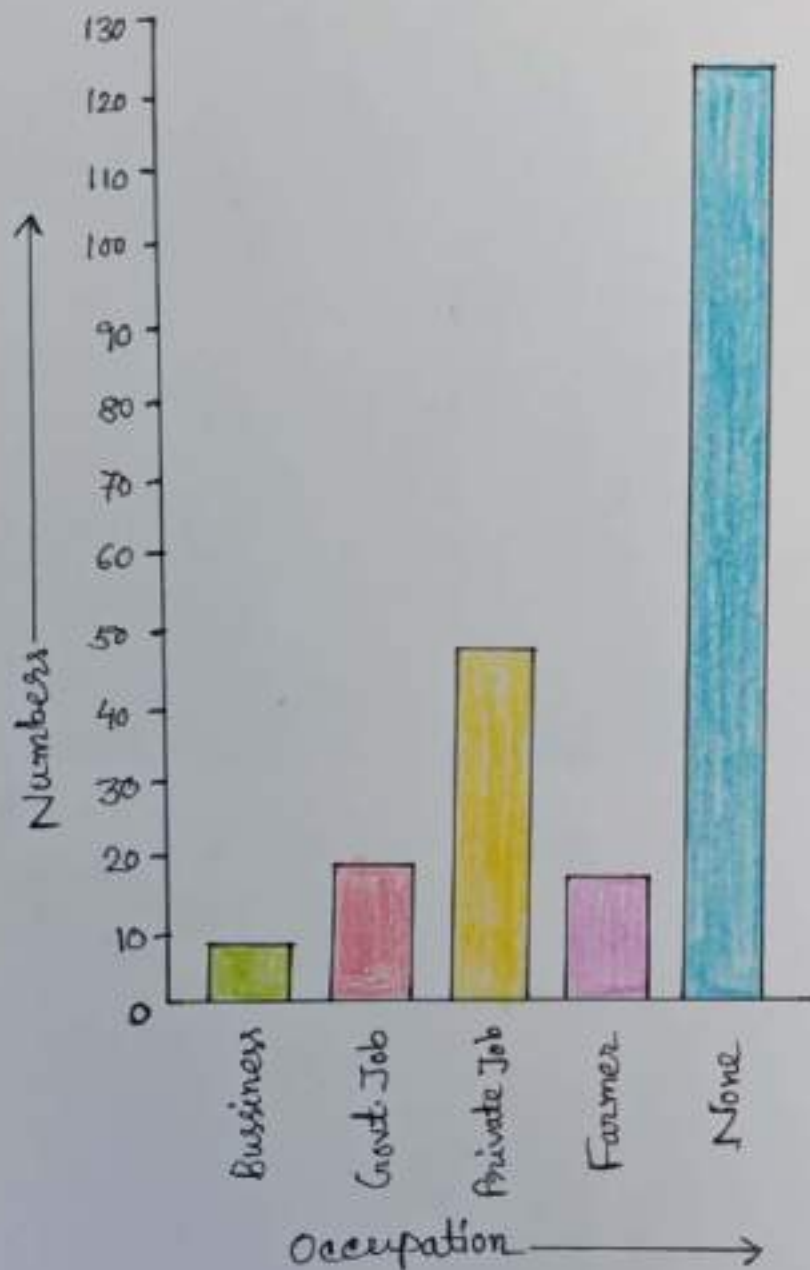
Grangtok in Sikkim has many such people engaged in various types of work. Some of them are businessmen, some are divers, some are farmers and some are employed in other types of work. Some are under government jobs and some are under private jobs also there are youths at young age who are not engaged in any work and some women are included among them. The persons employed in these various works are shown through a table.

Table of Occupation of Tathangchen village of Grangtok:-

Occupation	Tally Marks	No.	Scale	No (in cm)
Business		7	1cm to 10 people	0.7
Govt job		18		1.8
Private job	 	47		4.7
Farmer		16		1.6
None	 	122		12.2
Total		210		

Source: Primary data, October, 2023 survey

SHOWING THE OCCUPATION TYPES OF TATHANGCHEN
VILLEGE, GANGTOK, SIKKIM, INDIA
BAR DIAGRAM:-



SCALE
Horizontal Scale 1cm = 1 occupation
Vertical scale 1cm = 10 Numbers

Source:- Primary Survey, Data, October 2023

SOCIO ECONOMIC PHOTOGRAPHS



CHAPTER - 3

TRANSPORT AND COMMUNICATION

TRANSPORTATION SYSTEM

A transportation system can be defined as the combination of elements and their interactions, which produce the demand for travel within a given area and the supply of transportation services to satisfy this demand. This definition is general and flexible enough to be applied to different contexts. The specific structure of the system is defined by the problem itself (or class of problems) for whose solution it is employed.

Transport in India refers to the system of moving people, goods and services from one place to another within the country. India with its vast geography and diverse population, relies on various mode of transportation needs of its citizens and support economic activities. These modes include road transport, railways, airways, waterways and pipelines.

Transport in Sikkim:-

The state of Sikkim is accessible through both airways and roadways. There is however, no direct transportation service to Sikkim by railways. Being a very hilly region, the communication services of Sikkim are still at a budding stage but undergoing developments with the best efforts from the governments.

Sikkim Roadways:-

The state of Sikkim is connected by National Highway 31A which links Siliguri in West Bengal to Gangtok in Sikkim. There are bus and tour services run by the Sikkim National Transport. There are also privately run bus, jeep and tourist taxi services throughout Sikkim. The state is connected to Tibet by the Nathula Pass. The highway that links Gangtok with Seroke is National Highway 31A.

Sikkim Nationalised Transport:-

Regular buses, taxis and cabs are available to make journey to Sikkim and within Sikkim. Sikkim Nationalised Transport is one of the organised services provincialised transport service, private services are also in Sikkim which makes it easier for the tourists and visitors to have a smooth experience here.

Sikkim Railways:-

There are no railway connections and lines in Sikkim. The nearest railway station is located in Siliguri and New Jalpaiguri. New Jalpaiguri railway station is located 125 kms away from Gangtok and Siliguri is located 114 kms away. However, booking tickets is a trivial affair via online or the Sikkim Nationalised Transport office on all working days.

Sikkim Airways:

Though Sikkim does not have any airport because of its rough terrain, there is however, a helipad in Gangtok which is the only civilian helipad in the state. The closest airport to Sikkim is in Bagdogra near the towns of Siliguri in West Bengal. The Bagdogra airport is located about 124 kms from Gangtok.

The helicopter services not only are for transport and communication but also for sight seeing purposes. It provides wonderful trips to tourists making memories for them to cherish. These helicopters which can accommodate five passengers for a single trip are flown by experts hired.

Transportation holds immense significance for India's development and connectivity like: Economic Growth, Accessibility and connectivity, Employment Generation, Trade and Commerce, Regional Development etc.

SIKKIM



Roadways:-

Introduction:-

Sikkim is a landlocked state and comprises of young and fragile mountains, rivers, streams and water springs, thus, making it both diverse and vulnerable to natural catastrophe. The state is bereft of railways and waterways and recently, the decision of spicejet to discontinue its flights from Poojung Green field Airport until technical standards are met, makes roadways the only means of feasible transportation for the state.

Sikkim lies in the seismic zone and the re-occurring seismic movements and heavy rainfall trigger off landslides and movements of cap soil resulting in damage of roads and bridges there by, breaching the normal lifeline.

Sikkim, a picturesque Indian state nestled in the eastern Himalayas, boasts a unique road network due to its challenging terrain and stunning topography. The road system in Sikkim is primarily composed of three types of roads:-

1) National Highways (NH):-

Sikkim is connected to the rest of India through the National Highway network. NH10, also known as the Gangtok Nathula Road, is a crucial link that connects the capital, Gangtok, to the strategic Nathula Pass on the India - China border. This highway plays a significant role in trade and tourism.

2) State Highways (SH):-

The state has several state highways that facilitate intra-state travel and connectivity. These roads connect various towns and cities within Sikkim, enabling transportation of goods, public commuting, and promoting tourism in the region.

↳ Rural Roads:-

Sikkim's rural road network is vital for connecting remote villages and hamlets with towns and cities. These roads are essential for transportation of agricultural produce, access to healthcare and education, and fostering socio-economic development in rural areas.

Challenges and Features:

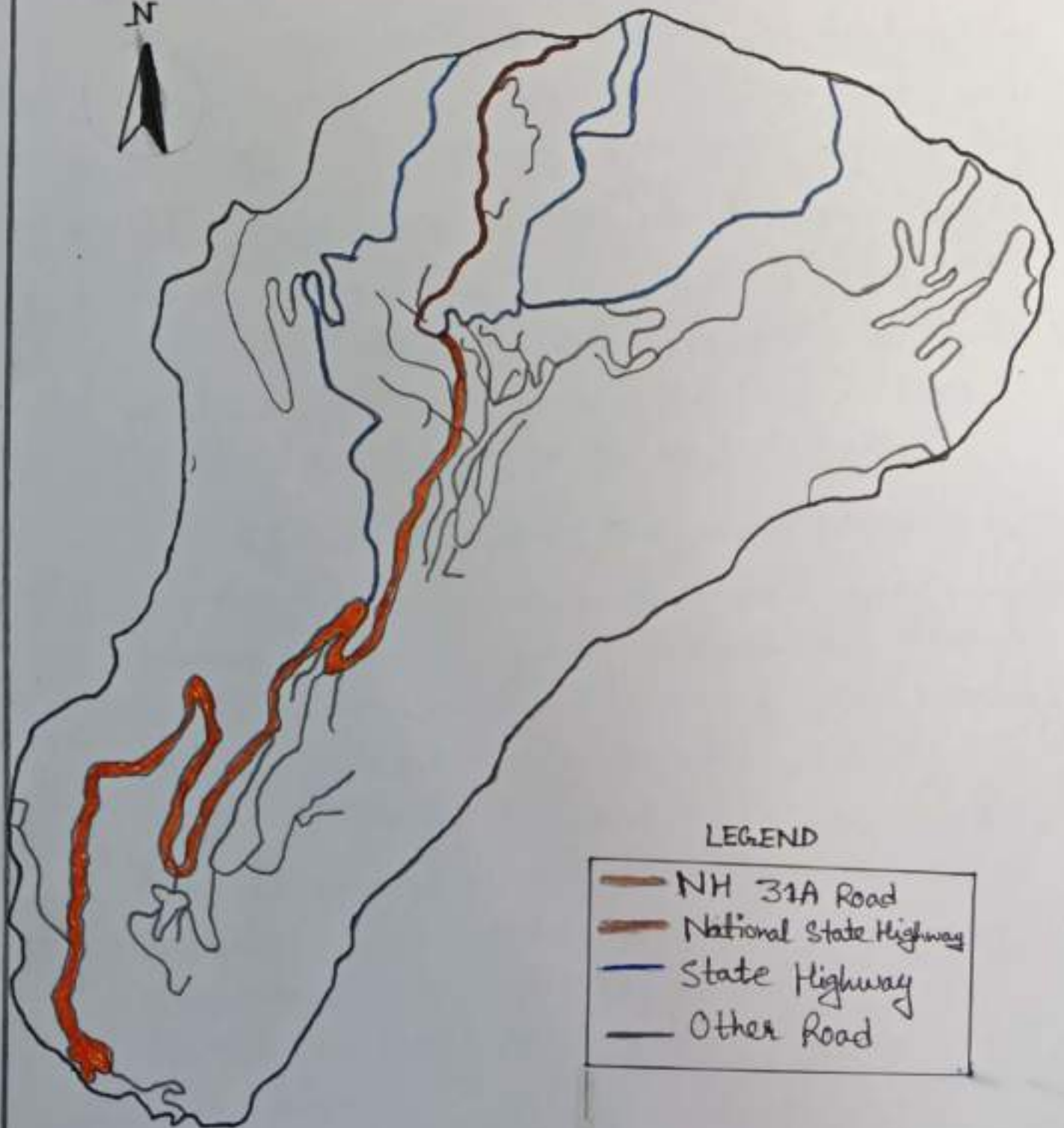
Sikkim's challenging terrain, characterised by steep slopes and rugged mountains, poses a significant obstacle in road construction and maintenance. Landslides and frequent rainfall during the monsoon season often damage the roadways, requiring continuous repairs and maintenance efforts.

The road network offers breathtaking views of the Himalayan peaks, making it a popular destination for adventure tourism and nature enthusiasts.





Sikkim has made strides in road infrastructure development in recent years, aiming to improve connectivity and accessibility to promote economic growth and tourism. In Summary, Sikkim's road network is a critical lifeline, overcoming geographical challenges to connect the state internally and link it to the rest of India, enabling economic growth and enhancing the state's natural beauty.

ROAD NETWORK OF GANGTOK

N



LEGEND

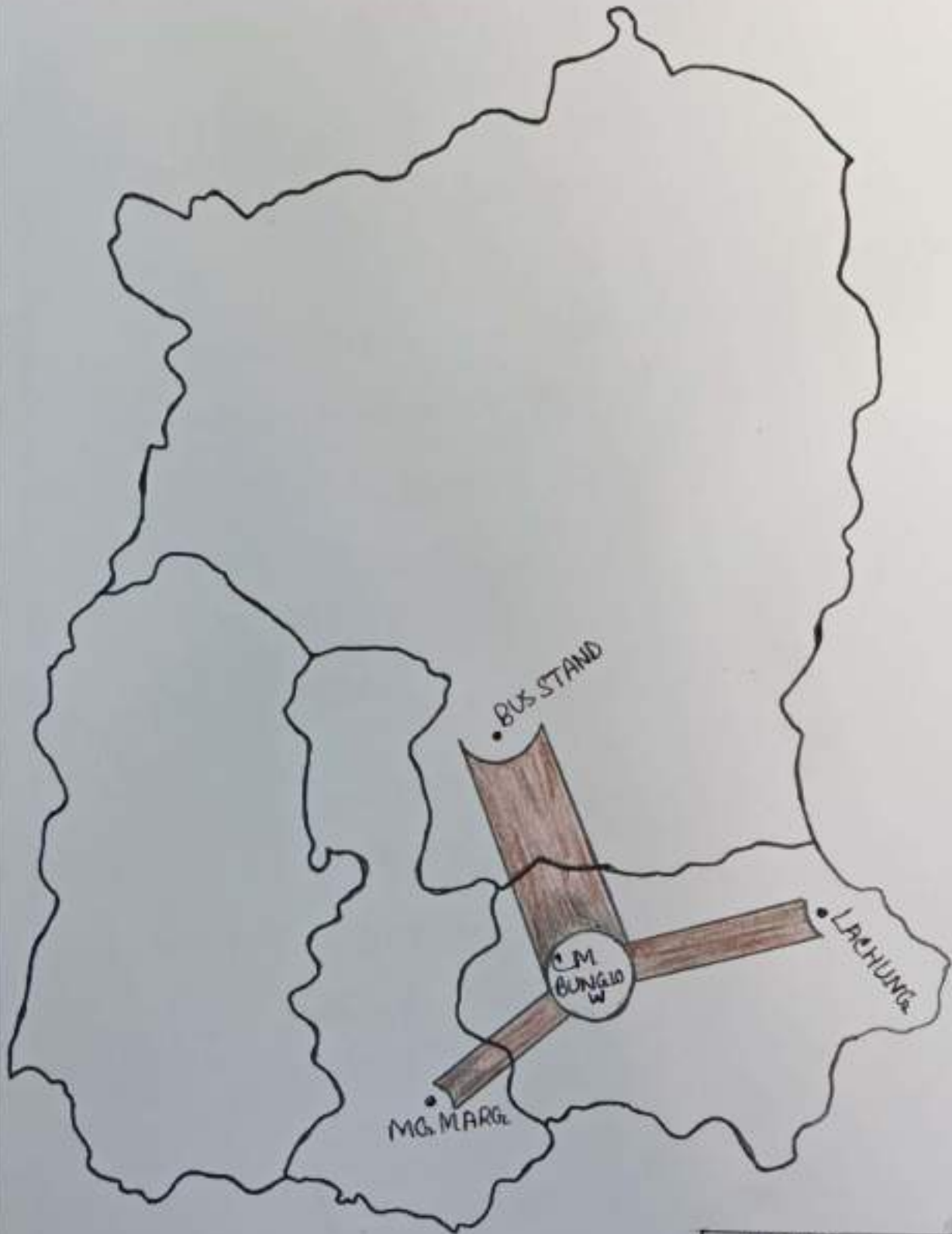
	NH 31A Road
	National State Highway
	State Highway
	Other Road

Gangtok, the capital of Sikkim, is characterized by a network of roads that traverse the picturesque Himalayan terrain. The road system primarily consists of winding mountain roads, some of which offer stunning panoramic views of the surrounding valleys and peaks. The major arteries include National Highways 10 (NH10) that connects Gangtok to Siliguri and beyond, serving as a lifeline for the region's connectivity to the rest of India.

Within Gangtok, the road network is a mix of main thoroughfares and narrower lanes, often meandering through the hilly landscape. MG Marg, the bustling central street, is a popular pedestrian-friendly area, flanked by shops, eateries, and vibrant markets - other notable roads include Tibet Road, which is a prominent commercial hub, and NH 10A leading to Nathu La Pass, an important border point with China.

Due to the challenging topography, maintaining and expanding the road infrastructure is an ongoing effort to improve accessibility, traffic flows, and safety. Landslides and adverse weather conditions can pose significant challenges to road maintenance and necessitate continuous upgrades and repairs. Overall, Gangtok's road network plays a vital role in sustaining tourism, trade, and daily life for the residents of this enchanting Himalayan city.

TRAFFIC FLOW MAP



SCALE
1 m m 25 vehicle

Given the number of road is = 3

Volume of Circle = 360°

Therefore each bar pairs will be
at $\frac{360^\circ}{3} = 120^\circ$ interval

So,

Toward Nathula = 120°

Toward Busstand = 240°

Toward MG Market = 360°

Radius of Circle is

$$\pi r^2 = 3368$$

$$r^2 = \frac{3368}{\pi} = 1072.06$$

$$r = \sqrt{1072.06}$$

$$= 32.74$$

Suppose, 1cm represent 10 cm on radius

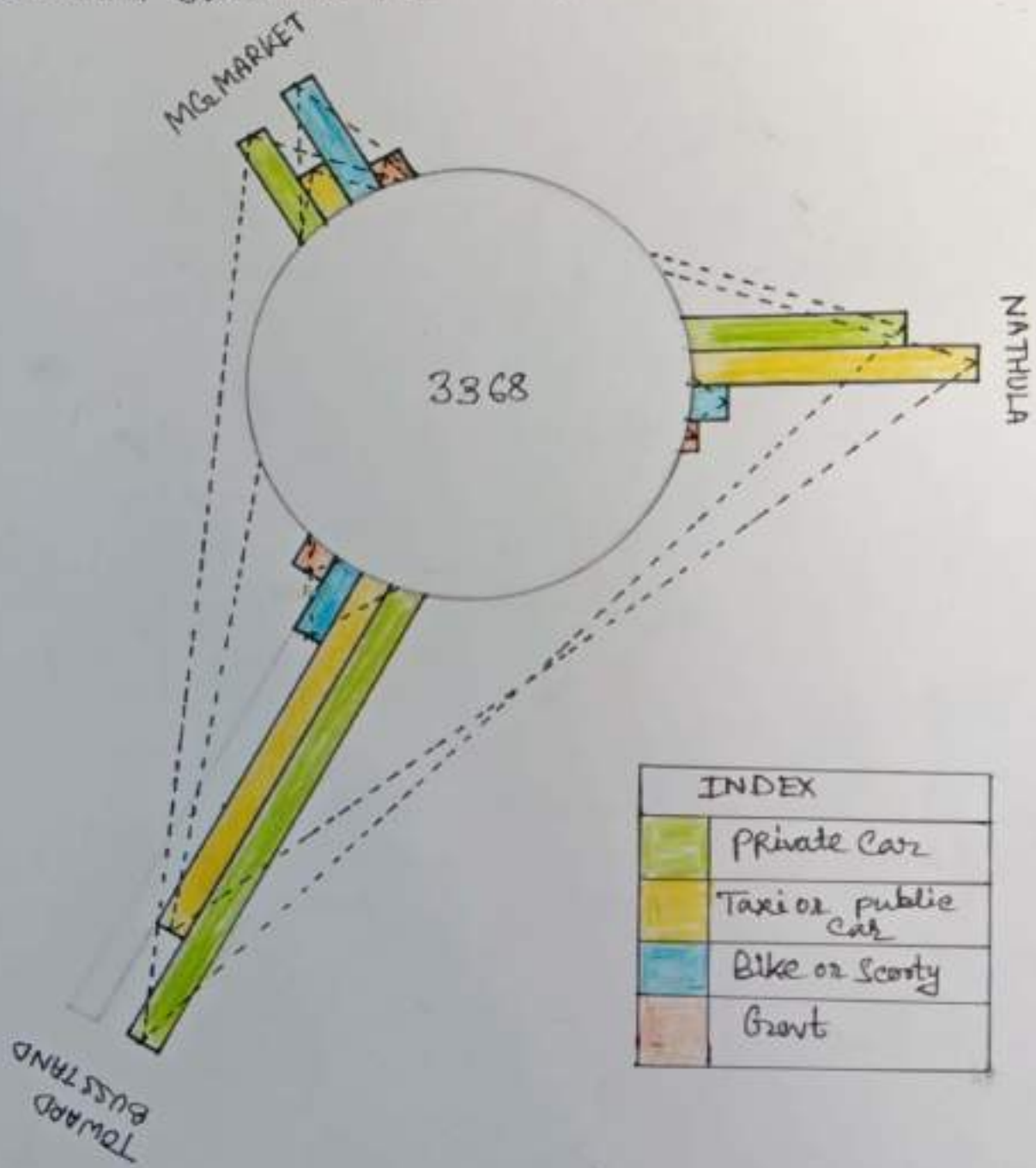
$$\therefore \text{Radius of Circle} = \frac{32.74}{10}$$

$$= 3.274$$

R. dd Name	Type of vehicle	No of vehicle	Scale	Bar according to the scale
Toward Nathula or Lachung	Private car	329	1 cm to 100	3.29
	Taxi / Public Car	418		4.18
	Bike / Scooty	62		0.62
	Govt	29		0.29
Toward Bus stand	Private car	810		8.10
	Taxi / Public Car	628		6.28
	Bike / Scooty	131		1.31
	Govt	51		0.51
Toward M G Market	Private Car	166		1.66
	Taxi / Public Car	66		0.66
	Bike / Scooty	196		1.96
	Govt	54		0.54

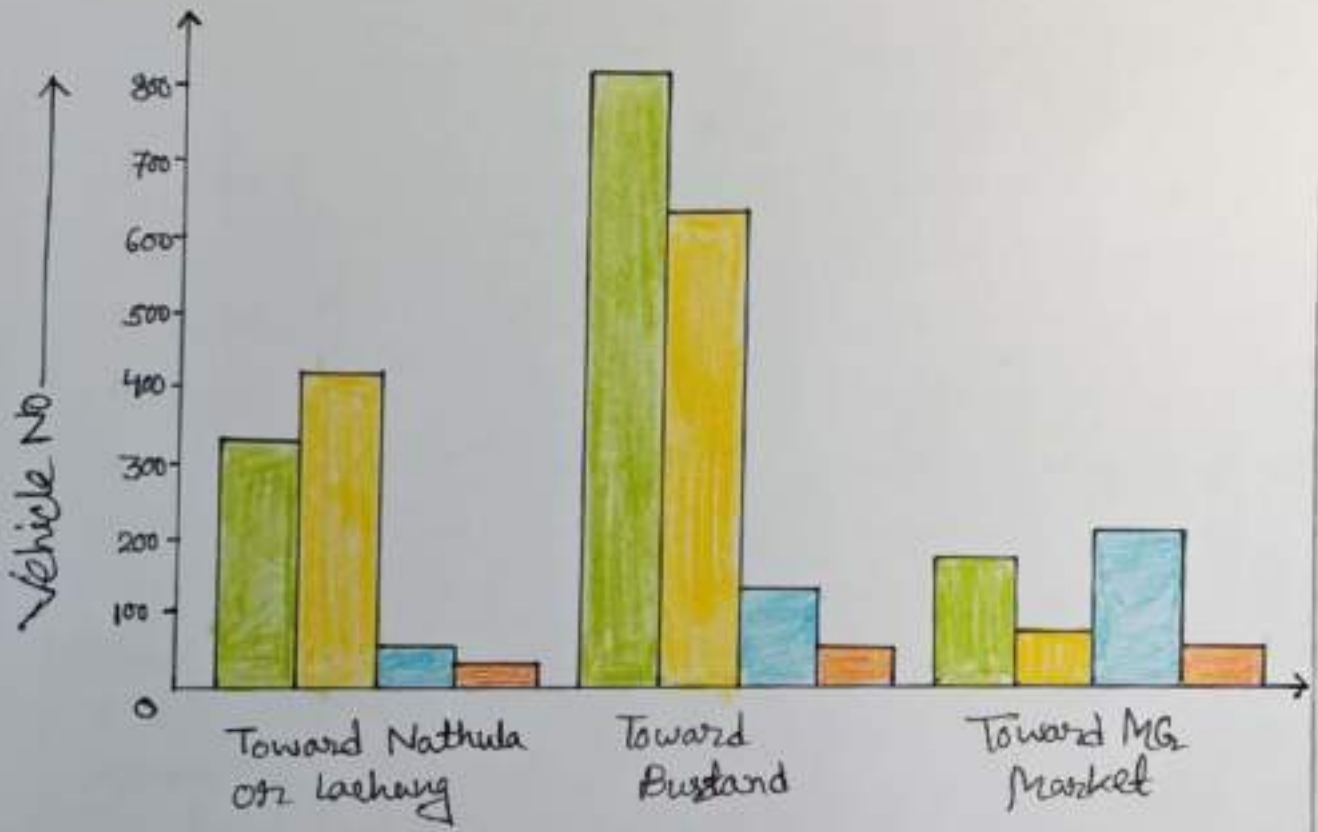
STAR DIAGRAM

SHOWING THE MULTIPLE BAR DIAGRAM OF TOWARD NATHULA, BUS STAND AND MG. MARG.



Scale: 1cm to 100 vehicle

SHOWING THE NUMBER OF VEICHL E MOVES FROM DIFFERENT STATION
BAR DIAGRAM ;



SCALE
 vertical scale
 1cm to 100
 vehicle

INDEX

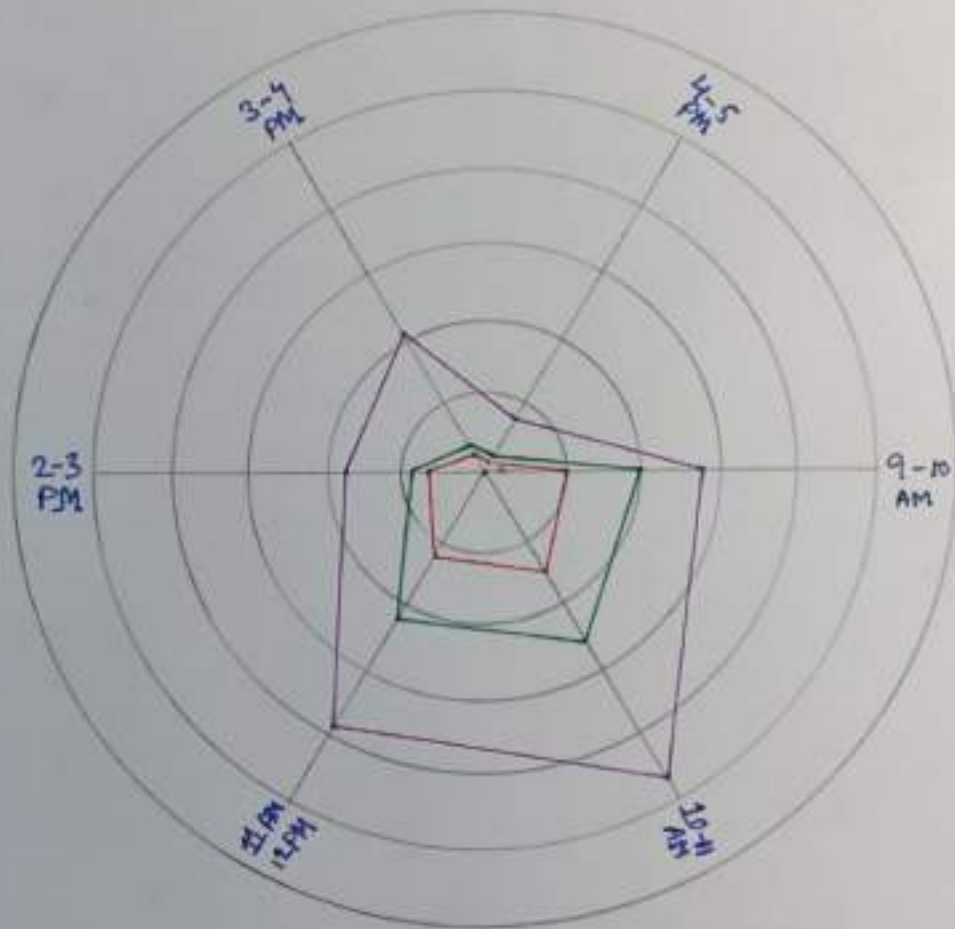
- Private Car
- Taxi/ Public Car
- Bike / scooty
- Grant

Source: Primary Survey Data, October, 2023

Road Name	Time	Vehicle	Scale	
Toward Nathula 072 Lachung	9-10	198	1 cm to 100	1.98
	10-11	263		2.63
	11am-12 pm	221		2.21
	2-3pm	90		0.9
	3-4	44		0.44
	4-5	22		0.22
Toward Buxland	9-10	280		2.80
	10-11	477		4.7
	11am- 12	389		3.89
	2-3	184		1.84
	3-4	207		2.07
	4-5	83		0.83
Toward M.G. Market	9-10	99		0.99
	10-11	149		1.49
	11-12	120		1.20
	2-3	70		0.70
	3-4	26		0.26
	4-5	18		0.18

STAR DIAGRAM

SHOWING THE NUMBER OF VEICHL E MOVES FROM CM BUNGLOW CHOWK (GANGTOK) TO DIFFERENT STATION



INDEX

	Toward Bus stand
	Toward Nathula on Lachung
	MG Market Road

SCALE

1cm to 100 unit

TRANSPORT AND COMMUNICATION



CHAPTER - 4

CONCLUSION

CONCLUSION:

Problem

- 1 Tourism impact: Overwhelming tourism may lead to environmental degradation, affecting the local ecosystem and cultural heritage.
- 2 Development Imbalance: Uneven development may occur with certain areas benefiting more from tourism related activities while others face neglect.
- 3 Environmental Concerns: Increased tourist footfall may contribute to waste generation, population and strain on natural resources in the pelling area.

Suggestion

- 1 Sustainable Tourism Practices: Implement and promote sustainable tourism practices to minimize the environmental impact and preserve the local ecosystem.
- 2 Waste Management: Establish effective waste management systems to handle the influx of tourists.



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Department of Geography

This is to certify that.....ARGHA GHOSH.....

Roll 2116247.....No. 2189030.....and

Registration No. 091523.....of 2021-22.....of B.Sc. Hons

Semester – V Examination of 2024 in Geography under Kalyani University has
completed his/ her project work on

Socio-Economic
Structure of Tathangchen Area of Gangtok District of Sikkim.

under our supervision and guidance.

He/she is permitted to submit the same as partial fulfillment of B.Sc. Hons
Semester – V Examination 2024 in Geography (SEC/ Practical) paper CC/P-11

Sakti Mandal

Signature

Head of the Department of Geography

Dr. SAKTI MANDAL

Head, Assistant Professor

Department of Geography

Sripat Singh College, Jiaganj

Ajay Debnath

Signature

Field Supervisors

Outcome Report: Geographical Excursion

Date of Excursion:	2 nd to 7 th October 2023,
Location:	Namchi Village, Sikkim
Participants:	35
Organized By:	Department of Geography,
Name of Field Supervisor:	Dr. Ajoy Debnath and Mr. Biswajit Chowdhury

Introduction:

The geographical excursion to Namchi Village, Sikkim was organized as part of the academic curriculum for the Honors students of Semester- V (Hons) in the Geography Department. The aim of this excursion was to provide students with practical exposure to geographical features and processes, supplementing their theoretical understanding.

Learning Objectives Achieved:

During the excursion, students were able to achieve the following key objectives:

1. Observation of Geographical Features:

Students had the opportunity to observe mountain ranges, rivers, coastal areas, soil types, etc., which helped them understand concepts related to geomorphology, hydrology, etc.. This hands-on observation solidified their understanding of the formation and impact of these features.

2. Practical Data Collection:

Students conducted various field activities, including Socio-economic data and soil sampling, topographical mapping, climate measurement, etc.. This allowed them to learn how to collect and analyze data in a real-world context, a vital skill for geographical research.

3. Interaction with Local Communities:

Students interacted with local communities to understand the relationship between human activities and the environment. This included understanding how geographical features impact agriculture, industry, and daily life in the region.

4. **Environmental Awareness:**

The excursion heightened students' awareness of environmental issues such as deforestation, soil erosion, climate change, etc.. The exposure to real-world environmental challenges reinforced the importance of sustainable development and environmental management.

5. **Group Collaboration and Problem Solving:**

Working in groups, students collaborated on field assignments and data analysis. They also encountered unexpected challenges, such as weather conditions or navigation issues, which helped them develop problem-solving and teamwork skills.

6. **Impact on Academic Learning:**


This excursion directly contributed to the students' understanding of topics covered in their coursework. Concepts such as [specific geographical concepts like erosion, tectonic activity, or human-environment interaction] were experienced first-hand, making them easier to comprehend and retain.

Conclusion:

The geographical excursion to Namchi Village, Sikkim was a successful and enriching experience for the students. It bridged the gap between theoretical study and practical application, enhancing both academic learning and personal development. We recommend continuing such excursions for future batches, as they play a crucial role in a holistic geographical education.

Recommendations:

- More frequent field trips should be organized to diverse locations to cover a broader range of geographical phenomena.
- Future excursions could include more interdisciplinary approaches, involving collaboration with students from environmental science or sociology departments to widen perspectives.


Dr. SAKTI MANDAL
Head, Assistant Professor
Department of Geography
Sripat Singh College, Jiaganj