

**DEPARTMENT OF GEOGRAPHY**  
**SAINT JOSEPH'S COLLEGE**  
**DEPARTMENTAL ACTIVITIES REPORT**  
**2021-2022**

**Department Orientation**

**MODE: Online (Google Meet)**

**Date: 28/09/2021**

Online orientation was conducted for the new students of 1<sup>st</sup> semester and their parents on 28<sup>th</sup> September 2021. All the 1<sup>st</sup> semester students and some of their parents attended the program and the session was conducted in following manner:

1	<ul style="list-style-type: none"><li>WELCOME SPEECH</li></ul>	FR.DR. DONATUS KUJUR
2	<ul style="list-style-type: none"><li>BRIEF HISTORY OF THE COLLEGE AND DEPARTMENT</li></ul>	MISS. SANDIKA RAI
3	<ul style="list-style-type: none"><li>INTRODUCTION OF DEPARTMENT FACULTY</li></ul>	MISS. EVELYN LEPCHA
4	<ul style="list-style-type: none"><li>CREDIT POINTS OF THE ATTENDENCE</li></ul>	MISS. LUCKY SHERPA
5	<ul style="list-style-type: none"><li>DEPARTMENTAL ACTIVITIES</li><li>EXAM (CBCS &amp; SEMESTER SYSTEM)</li></ul>	DR. PRIBAT RAI
6	<ul style="list-style-type: none"><li>RULES AND REGULATIONS OF THE ONLINE CLASS</li><li>RESPONSIBILITY OF PARENTS</li></ul>	MISS. SANDIKA RAI
7	<ul style="list-style-type: none"><li>INTERACTION SESSION</li></ul>	FR.DR. DONATUS KUJUR
8	<ul style="list-style-type: none"><li>BRIEF REFLECTION</li><li>DISCUSSION SESSION</li></ul>	DR. PRIBAT RAI
9	<ul style="list-style-type: none"><li>VOTE OF THANKS</li></ul>	MISS. LUCKY SHERPA

**TWO DAYS INTERNATIONAL SEMINAR ON EASTERN HIMALAYA- EXPLORING  
MULTI AND INTERDISCIPLINARY RESEARCH APPROACHES  
ORGANISED BY IQAC IN COLLABORATION WITH DEPARTMENT OF  
GEOGRAPHY**

**DATE: 11<sup>th</sup> – 12<sup>th</sup> APRIL, 2022**

**Conceptual Note of the Seminar**

There are various issues and challenges concerning the Eastern Himalayan Region from its Natural and Environmental Set up to Socio-Cultural and Political make up. In a very Specific context if we review and re-observe our own Darjeeling and Sikkim Himalayan region, numerous problematical issues falls upon our very research mind. The natural Resource Management issues, Gender gaps, Natural Hazards, Developmental issues, issues of Economic Sustainability, Degrading Landscape, Population-resource relationship, Political instability, issues of Women empowerment, loss of Traditional Knowledge, Water scarcity etc. However, the identification of those problems has given us a clue of those gaps which needed to be bridged.

Thus different disciplines today have given their diverse perspective in illustrating those issue or theme. However, many stayed within their own boundary attaining discipline specific goals. This seminar thus focuses on such issues concerning our region and how those issues have been studied and analyzed from the lens of a specific discipline.

Harmonising and synthesising the links between discipline is also very necessary to study some complex issues concerning our Eastern Himalaya. Combinations of different methods from different discipline have paved the way for analyzing the issues from more than two different lenses. Thus, this seminar also examines the issues and themes from more than two different discipline. However, the major purpose of this seminar is to focuses on bringing together this two Multi and Interdisciplinary Research Approaches of doing research in Eastern Himalaya.

At the end of the seminar, the major goal is to provide an opportunity to work closely with different approaches and minimizing the traditional disciplinary boundaries. Rather than substitution, integration is needed to address the complex issues concerning our Himalayan Region. Integration of Skills, integration of approaches, integration of philosophies, integration of stakeholders outside of academic discipline, and working between the discipline, across the discipline and beyond the discipline will certainly give us the birth of Holistic approach creating new intellectual space, perfect for bring out the sustainable solution based approach. We hope in this two days seminar we learn from different discipline their ideas of seeing the world and how those ideas can be implemented in our individual vision to create a new knowledge for welfare of our nature and society



# TWO DAYS INTERNATIONAL SEMINAR ON EASTERN HIMALAYA- EXPLORING MULTI AND INTERDISCIPLINARY RESEARCH APPROACHES

ORGANIZED BY IQAC  
IN COLLABORATION WITH DEPARTMENT OF GEOGRAPHY  
SAINT JOSEPH'S COLLEGE  
DARJEELING  
DATE 11<sup>TH</sup> -12<sup>TH</sup> APRIL 2022

CHIEF PATRON

Fr. Dr. Donatus Kujur Principal

CONVENOR

Dr. Pribat Rai( HOD)

Geography

Organizing Members-

Ms. Parvati Rai, Assistant Prof. Geography Saint Joseph's College

Ms. Nim Lucky Sherpa, Assistant Prof. Geography Saint Joseph's College

Ms. Evelyn Lepcha, Assistant Prof. Geography Saint Joseph's College

Zero waste  
Event

<b>PROGRAMME SCHEDULE OF THE SEMINAR</b>		
<b>Date: 11-12 April, 2022</b>		
<b>Venue: Saint Joseph's College Conference Hall</b>		
<b>Day One: 11<sup>th</sup> April</b>		
		<b>Time</b>
Registration		9:00 am
Prayer		9:30 am
Lighting of the Lamp		9:45 am
Welcoming Guest with Cultural Program		9:45-10:00 am
Welcome and Keynote Address by Father Principal		10:00-10:10am
Introduction of <b>Saint Joseph's College Geographical Society</b>	<b>Sanju Subba</b> and Group, 4 <sup>th</sup> Semester, Geography, Saint Joseph's College	10:10-10:20 am
Brief Introduction of the Seminar	<b>Dr. Pribat Rai</b> , Assist Prof, Dept of Geography, St Joseph's College	10:20-10:25 am
Tea Break		10:25-10:40 am
Welcoming Keynote Speaker for Keynote Speech	<b>Dr. Sherab Bhutia</b> , Associate Professor, Geography, Darjeeling Govt College	10:40-11:05 am
<b>Presentation by the Invited Guest</b>		
<b>Session 1</b>		
Chair: <b>Dr. Lakpa Tamang</b> , Assistant Professor, Geography, Calcutta University		
		<b>Time</b>
<b>Mr. Anirodra Rai</b> , Glaciologist and Field Coordinator, Doctoral Fellow, Department of Geology, Kalinga University.	Glacier and Glaciation in Sikkim Himalaya	11:10-11:30 am
<b>Mr. Sargam Lohar</b> , PhD Scholar, Geology, Sikkim University	Assessment of Heavy Metals in Sediments of Ranikhola, a tributary of river Teesta, Sikkim	11:30-11:50 am

<b>Mrs. Manorama Thapa</b> , Doctoral Fellow, Department of Soil and Water Conservation, SouthWest University, China.	Soil Nutrient and Stoichiometry in India and China	11:50-12:10 am
<b>Lunch Break</b>		12:20-1:20 pm
<b>Session 2:</b>		
Chair: <b>Dr. Sherab Bhutia</b> , Associate Professor, Geography, Darjeeling Govt College		
		Time
<b>Mr. Dawa Sherpa</b> , Assist Prof, Geography, Sikkim Alpine University, PhD Scholar, Department of Geography, Sikkim University	Dynamics of Nature-Society Relationship in Geographical Tradition	1:25-1:45 pm
<b>Nargima and group</b> , Fourth Semester, Geography, Saint Joseph's College	Exploring the Dynamics of Mulkharka, Tagaythang and Kolakham Rural Village, East Kalimpong Himalaya	1:45-2:05 pm
<b>Mrs. Namrata Rai</b> , Assist Prof, Department of Geography, Kurseong College	Sustainable Development and Women Empowerment: Perspective from the Eastern Himalayan Region	2:05-2:25 pm
<b>Mr. Lobsang Tshering Bhutia</b> , International Institute for Population Sciences, Mumbai	Analyzing Demographic and Socio-Economic Correlates of Family Planning: A State Level Analysis of Meghalaya based on NFHS-4	2:25-2:45 pm
Guest Speaker: <b>Dr. Lakpa Tamang</b> , Assistant Professor, Geography, Calcutta University		3:00 pm
<b>END OF FIRST DAY</b>		

<b>Day Two: 12<sup>th</sup> April, 2022</b>		
		<b>Time</b>
<b>Prayer</b>		<b>9:30 am</b>
<b>Reflection from the Repertoire</b>		<b>9:40-9:45 am</b>
Welcoming Keynote Speaker for Keynote Speech	<b>Professor Maitreyee Choudhury</b> , Centre for Himalayan Studies, University of North Bengal	10:00 am
<b>Tea Break</b>		<b>10:30-10:45 am</b>
<b>Session 1</b>		
Chair: <b>Mr. Roshan Rai</b> , DLR Prerna		
		<b>Time</b>
<b>Mr. Utsav Pradhan</b>	Regenerative Ecosystems	10:50-11:10 am
<b>Ms. Rinchu Dukpa</b> , Doctoral Fellow, Department of Environment Sciences, Wageningen University, The Netherlands.	Understanding Hydropower development conflict and cooperation in North Sikkim: The epic case of interdisciplinarity	11:10-11:30 am
<b>Mr. Abhisek Sundas</b> , Doctoral Research Fellow, Department of Peace and Conflict Studies and Management, Sikkim University	Mapping the Contemporary Geographies of Urbanization and Human Security in Darjeeling	11:30-11:50 am
<b>Ms. Nirjala Rai</b> , PhD Scholar, Geography, Sikkim University	Habitat Suitability Mapping for Yaks ( <i>Bos grunniens</i> ) using GIS and Remote Sensing in Sikkim Himalaya	11:50-12:10 pm
<b>Lunch</b>		<b>12:20-01:20 pm</b>
<b>Session 2</b>		
Chair: <b>Dr. Padam Nepal</b> , Associate Professor, Political Science, Saint Joseph's College		
		<b>Time</b>
<b>Mr. Roshan Rai</b> , DLR Prerna	Invisible and Visible Water and Waste Scapes of Darjeeling	1:25-1:45 pm

Ms. Namoshree Rayi, Disaster Disaster Management Authority	Disaster Management Mechanism, DDMA, Darjeeling	1:45-2:05 pm
Ms. Evelyn Lepcha, Assist Prof, Department of Geography, Saint Joseph's College	Minamata Mercury Pollution in Japan: A bigger question for Sikkim Himalaya	2:05-2:25 pm
Summary from the Repertoire		2:50-2:55 pm
Valedictory Address by <b>Dr. Padam Nepal</b>		2:55-3:10 pm
Certificate Distribution		3:15 pm
Vote of Thanks by Ms. Parvati Rai, Assist Prof, Geography, St Joseph's College		
End by College Song		



TWO DAYS INTERNATIONAL SEMINAR ON  
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RESEARCH APPROACHES

**DAY 1**

**Technical Session 1**

**Glacier and Glaciation in Sikkim Himalaya**

**(Mr. Anirodra Rai)**

Glaciologist and Field Coordinator,

Doctoral Fellow, Department of Geology, Kalinga University.

**Abstract**

As we all know that earth contains 3% of fresh water out of which 2.5% is locked up in glaciers, polar ice caps, atmosphere and soil. So this presentation contains the basic idea of Glacier studies and also the field experiences. First it talks about the distribution of glacier in the world scenario and later on it focuses on Sikkim Himalaya. After that it gives general information of glacier, Formation, Movement, Accumulation Zone and Recession. It also talks about the status of glacier in Sikkim Himalayas, as according to different findings or views of different authors. It also focus on the probability hazard of glacier, different threats and risk involved to mankind on future prospect. At the end of this presentation it talks about the Prevention, Mitigation and the conservation of glacier.

**Assessment of heavy metals in sediments of Ranikhola, a tributary of river Teesta, Sikkim**

**(Mr. Sargam Lohar)**

PhD Scholar, Geology, Sikkim University

**Abstract**

The present study includes assessment of sediments of river Ranikhola a tributary of river Teesta in Sikkim for heavy metal contamination. To estimate the contamination, four heavy metals, namely, Cr, Ni, Cd and Pb were examined in the river bed and bank sediments. Result shows heavy metal contamination ranges between 0.33 to 11.9 mg/Kg for Cr, 0.26 to 0.96 mg/Kg for Ni, 0 to 0.12 mg/Kg for Pb. The highest contamination factor was observed for Cd.

TWO DAYS INTERNATIONAL SEMINAR ON  
EASTERN HIMALAYA-EXPLORING MULTI AND INTERDISCIPLINARY  
RESEARCH APPROACHES

Pollution Load Index (PLI) was observed highest at location 7 i.e., 0.049. Pollution index values suggests low contamination but the quality may degrade in the near future due to increasing anthropogenic inputs in the river basin.

**Soil Nutrient and Its Stoichiometry in Tea Plantation Soil of India and China-A Meta-  
Analysis**

**(Manorama Thapa)**

Doctoral Fellow, Department of Soil and Water Conservation  
Southwest University, Chongqing, China

The effects of tea plantation upon soil are of great concern in the context of monoculture crop due its increasing demand resulting in expansion of tea growing areas. So this study was conducted to understand the soil physic-chemical properties, soil nutrient concentrations and its stoichiometry in major tea growing areas of India and China. For this study Meta-analysis approach was used to examine the difference between the two countries. Soil pH tends to be more acidic in CS than in IS, soil Bulk Density (BD) was higher in Chinese soil with low soil Total Porosity (TP).Whereas the soil texture in CS was fine texture with Silt Clay while IS texture was coarse with sandy clay loam. Soil Carbon(C) showed no significant difference; whilst Nitrogen (N) concentration showed significant difference only at the top layer with higher concentration in Indian soil (IS). Soil Phosphorus (P) and Potassium (K) concentration were significantly higher in Chinese soil (CS) than IS at all soil depths. The C:N ratio in both the countries was below 10 showing the accumulation of organic matter is low whilst C:P ratio showed net mineralization of nutrient in both the countries The N:P ratio represented N limitation in CS while in IS it represented P limitation The comparison of soil physical-chemical properties between India and China revealed the distinct differences between the tea plantation soils in both of these countries. Except for C concentration C:P, N:K and P:K ratio all the properties deemed to be different. Our results suggests that a balanced fertilizer application and these N and P limitation in tea growing soil of these two countries should be paid more attention.

**Keywords:** Soil physico-chemical properties; Soil nutrient; stoichiometric ratio; India; China

TWO DAYS INTERNATIONAL SEMINAR ON  
EASTERN HIMALAYA-EXPLORING MULTI AND INTERDISCIPLINARY  
RESEARCH APPROACHES

**Technical Session 2**

**Dynamics of Nature-Society relationship in Geographical Traditions**

(Dawa Sherpa)

Assist Prof, Geography, Sikkim Alpine University

Abstract

Geography has come a long way comprehending multiple core concepts, ranging from the physical to the social, from human/society to the natural environment considering various other aspects such as economy, political, culture along with climate, vegetation, landscapes etc. In the midst of all these, the study of nature-society relationship holds a central position in Geography. one may not be wrong to argue that the basic theoretical premise of Geography as a discipline center on Nature-society relationship (since classical traditions). This very central focus of the geography has emerged out of the multiple traditions existing in the discipline.

Geography's long-standing quest and a struggle to articulate and frame the major realms of the world, i.e. Human and Nature as a "whole" in examining the synthesis between the two separate spheres. A synthetic approach or Geography's efforts to unify the versions of science of Nature and Sciences of Human has been an ongoing struggle. This very struggle has been instrumental in shaping the philosophical and methodological destiny of Geography.

This paper tries to reflect on how Nature-Society relationship occupies the centrality in Geography's theoretical and methodological engagements? Also, what kinds of shifts that Geography has witnessed over the period of time and how do we 'read' these changes? What implications do they bear in shaping the theoretical and methodological core of our discipline? Thus, this paper attempts to explore and examine the broader shifts towards Geography's engagement with nature-society relationships in a historical rhythm. Within this, it attempts to examine the emergence and evolving nature of Geography in general. In particular, it attempts to examine the issues related to shifts, which have occurred mostly after post 1908s. however, it should not be considered as an attempted to capture a detailed historical account of the discipline, which is beyond the scope of this paper. In this context, concisely the central focus of the study is to examine the paradigmatic shifts in understanding Geography's engagement with human-nature relationships with a contextual and discursive treatment.

TWO DAYS INTERNATIONAL SEMINAR ON  
EASTERN HIMALAYA-EXPLORING MULTI AND INTERDISCIPLINARY  
RESEARCH APPROACHES

**Exploring the Dynamics of Mulkharka, Tagaythang and Kolakham Rural Village, East  
Kalimpong Himalaya**

Nargima and Group, Fourth Semester, Geography  
St Joseph's College

**Abstract**

The present study explores the rural livelihood of East Kalimpong Himalaya. The objectives were to find out the various socio-economic issues encountered by the people living in three remote rural village of Mulkharka, Tagaythang and Kolakham. The data collected from survey and interview were analysed. It was found that still people have traditional pattern of household, literacy level is very low, medical facilities and infrastructure is poor and the major economic livelihood is homestay.

**Keywords** : livelihood, homestay, traditional pattern, ethnic groups.

**Sustainable Development and Women Empowerment: Perspective from the Eastern  
Himalayan Region**

**(Namrata Rai)**

Assistant Professor  
Department of Geography  
Kurseong College

Sustainable development has now become a significant goal for policies and initiatives at all levels. It is most generally defined as development that meets current needs without compromising future generations' needs. Giving every individual, the right to prosper and contribute, as well as the role and rights of women, is a significant aspect of long-term development. To achieve sustainable development, it is critical to integrate economic, environmental, and social goals across all sectors. Women's full participation in the entire development process is deemed vital for improved socioeconomic development. If the majority of the population, particularly women, is left out of any development plans, it will be difficult

TWO DAYS INTERNATIONAL SEMINAR ON  
EASTERN HIMALAYA-EXPLORING MULTI AND INTERDISCIPLINARY  
RESEARCH APPROACHES

to achieve true development. In the eastern Himalayan region, Self Help Groups (SHGs) have played a critical role in economically empowering rural women. SHGs have given women more control over their lives, allowing them to create their own agendas, obtain skills, improve self-confidence, develop self-reliance, and solve problems. However, their engagement and empowerment are limited by their intrinsic limitations of self-awareness and perception.

**Keywords:** Women empowerment, sustainable development

**Analyzing Demographic and Socio-Economic Correlates of Family Planning: A State  
Level Analysis of Meghalaya based on NFHS-4  
(Lobsang Tshering Bhutia)**

MPS International Institute for Population Sciences, Mumbai

India has long history of family planning ever since 1952, and as per to NFHS-4 the Total Fertility Rate of India is reported to be 2.2 children per women, with high range of TFR accounting mainly by EAG states and North Eastern India states. The policies framed are much oriented towards EAG states, which makes it unsuccessful to be applicable in North- Eastern states with regional disparity in demographic and socio-economic conditions, as such the paper focuses on Meghalaya with highest TFR among north eastern states, tries to explain the demographic and socio-economic correlates of family planning taking married women into consideration. The analysis is based on NFHS 4 (2015-16) data, processed through SPSS statistical package in order to explain the knowledge, practices and demographic and socio-economic correlates of family planning. The study found out that 96.33% of the women had knowledge on methods of contraceptives, while in actual practice the contraceptive users accounted for only 24.3%. The binary logistic regression output concluded demographic and socio economic correlates of total children ever born, desire for children, year since cohabitation, age, religion and exposure to mass media were highly significant  $p < 0.001$ , and  $p < 0.01$ , and had significant impact on contraceptive use. The other significant variables were caste, and wealth index where  $p < 0.5$ . While the type of residence, number of daughters and sons and educational status of women were found out to be insignificant. As such the state of Meghalaya should itself promote family planning setting a target on these demographic and socio-economic variables for meeting the target of population stabilization.

TWO DAYS INTERNATIONAL SEMINAR ON  
EASTERN HIMALAYA-EXPLORING MULTI AND INTERDISCIPLINARY  
RESEARCH APPROACHES

**Keywords:** Family Planning, Regional Disparity, North-Eastern India, NFHS-4,  
Contraceptives

TWO DAYS INTERNATIONAL SEMINAR ON  
EASTERN HIMALAYA-EXPLORING MULTI AND INTERDISCIPLINARY  
RESEARCH APPROACHES

**Day 2**

**Technical Session 3**

**Regenerative Ecosystems**

**Mr. Utsow Pradhan, TIEEDI Forest Garden**

**Abstract**

In the recent years, we have often heard the word ‘sustainability’. It has been used to describe a system that is not degenerative and one that does not destroy the eco-system that feeds us, shelters us and gives us life. From sustainable business to sustainable products, people have often used this term to talk about a new world order that is built in harmony with Mother Nature. However, given the current circumstances and the burgeoning climate crisis that is looming not in horizon but knocking right outside the door, being sustainable is not enough. We need to eco-systems that is regenerative. Whilst sustainable systems give an output value of  $x$  while taking an input value of  $x$ , regenerative eco-systems create a multiplier effect. If  $x$  is added into a regenerative system the output value is always  $x + y$  or even at times  $x$  to the power of  $y$ . Regenerative systems are healing systems which is exactly what the world needs right now.

**Understanding Hydropower development conflict and cooperation in North Sikkim:  
The epic case of interdisciplinarity!  
(Rinchu Dukpa)**

**Ms. Rinchu Dukpa,**

Doctoral Fellow, Water Resources Management Group,

Department of Environmental Sciences, Wageningen University and Research, The  
Netherlands

**Abstract**

Hydropower development and its associated local conflict and contestations in the Sikkim Himalaya is a multifaceted, complex, politico-social phenomenon that has for many decades gripped the tiny state into a recurring bout of anti-dam mobilisations and protest-movements.

TWO DAYS INTERNATIONAL SEMINAR ON  
EASTERN HIMALAYA-EXPLORING MULTI AND INTERDISCIPLINARY  
RESEARCH APPROACHES

While a few mobilisations succeeded, leading to the cancellation of four relatively smaller sized dam projects not higher than 160 MW, most were ineffective because the large and mega ones (500 MW and above) were either constructed and commissioned or are awaiting clearances. This has not only perpetuated local conflict but today, exacerbated it by visibly polarizing local communities into staunch dam proponents and opponents – unprecedented in Sikkim. Elaborating on the technique and usage of qualitative “interdisciplinary” research approach aided by qualitative methods, my talk will explain the key findings of my research -  
- based on three case studies in Chungthang, Lachen/Lachung and Dzongu in North Sikkim -- to show the integration of diverse concepts and theories from different disciplines together with its advantages and drawbacks. I will argue that for complex socio-political phenomenon like large hydropower development, an interdisciplinary research approach provides a better understanding of the research problem.

**Mapping the Contemporary Geographies of Urbanization and Human Security in**

**Darjeeling**

**(Abhishek Sundas)**

Doctoral Research Fellow

Peace and Conflict Studies and Management

Sikkim University

**Abstract**

Human Security occupies an important position in adding impetus to the overall notion of sustainable development, which is further interweaved with the question of environmental security at large. Quality of life in every society has been a major concern in the contemporary times, hence environmental security has been placed as a tool in assuring the same in relation to human security. Likewise, human security cannot be overlooked in contesting the well-being of every society. Urbanisation in Darjeeling has been the spur-of- the moment. Hence the study attempts to locate the embryonic relationship between human security and urbanisation in Darjeeling.

TWO DAYS INTERNATIONAL SEMINAR ON  
EASTERN HIMALAYA-EXPLORING MULTI AND INTERDISCIPLINARY  
RESEARCH APPROACHES

**Habitat Suitability Mapping for Yak (*Bos grunniens*) using GIS and Remote Sensing in  
Sikkim Himalaya**

**(Nirjala Rai)**  
**PhD scholar**  
**Geography**  
**Sikkim University**

**Abstract**

Animals are adapted to the specific type of environment which is ideal for their existence and growth and those environment suited for animal is what we call a habitat. Habitat are mostly determined by the climate and geographical location of the region along with the type of vegetation that enables any animals inhabiting to survive. Yak is an iconic large herbivore inhabiting the highlands of Sikkim Himalaya in north, east and west district of the state. Yak have many characteristics and attributes that enables them to adapt to the region characterized with high elevation, extreme cold climate and low temperature. Habitat Suitable analysis using GIS and Remote Sensing approaches have been conducted in several types of habitats concerning several species, but it appears these type of assessment have hardly used for Yak particularly in its dominated area even though their habitat is prone to many adjustments. Thus, the main objective of the study is to carryout habitat suitability analysis and find out suitable habitat sites of Yak in Sikkim using the weighted overlay method considering temperature, elevation, slope, slope aspect and land type as a criteria. The paper further discuss the undergoing changes of the habitats most importantly, the political interventions that has had a major impact on suitable habitation areas of Yak thus propelling them to adapt flexibly in their spatial range.

**Keywords:** Pastoralism, Dokpas, Yak, Habitat Suitability, border

TWO DAYS INTERNATIONAL SEMINAR ON  
EASTERN HIMALAYA-EXPLORING MULTI AND INTERDISCIPLINARY  
RESEARCH APPROACHES

**Technical Session 4**

**Invisible and Visible Water and Waste Scapes of Darjeeling**

**(Roshan Rai)**

Programme Officer, DLR Prerna

**Abstract**

Water and Waste flows together in Darjeeling but the crisis is seldom responded with an intersectional and multidisciplinary lens. Water discourse is not just about water that can be seen above the ground but also about the unseen water in the aquifers below the ground. The fluidity of water, what is beneath the ground, also pushes the ideas of ownership, governance and management of water beyond the traditional departmental silos. Likewise waste is a design fault that needs to be addressed at systems level and not as an end of the pipeline management issue. Waste is equally a materiality, production, consumption and behavioural issue that does not have a singular technological magic wand solution. Within the Indian context even though the Himalaya is constantly portrayed as the water towers, sacred and clean; for the people living the Himalaya, water and waste policies are not always contextualized or pertinent to mountain needs. Darjeeling's water and waste scapes provides an opportunity for multi and interdisciplinary pathways.

**Disaster Management Mechanism, DDMA. Darjeeling**

**(Namoshree Rayi)**

Disaster Management Professional,

District Disaster Management Authority

Darjeeling

**Abstract**

The district of Darjeeling nestled at the northern most edge of West Bengal is a district with beautiful topography but not free from the wrath of Monsoon Hazards. The hills are scarred with vagaries of Landslides and the plains engulfed in urban flooding. Disaster Management Act 2005 entrusts each District Disaster Management Authority (D.D.M.A) with the responsibility of undertaking Disaster Management and Risk Mitigation Measures for respective districts. It works on the factors of Risk Mitigation and strengthens the capacity of the stakeholders and public in general. Authority prepares District Disaster Management Plan

TWO DAYS INTERNATIONAL SEMINAR ON  
EASTERN HIMALAYA-EXPLORING MULTI AND INTERDISCIPLINARY  
RESEARCH APPROACHES

as per the guidelines of the National Disaster Management Authority for an organised inclusive management of the calamities. Though Landslides are a familiar term yet the responsibility of response and preparedness is always an evolving mechanism. Thus the paper highlights the shared experience of working in the District Authority in effective mitigation measures and how it virtually expose the young intellectuals to the practicality of Disaster Management pertaining to the hills of Darjeeling.

**Keywords:** Disaster, Disaster Management, Darjeeling

**Minamata Mercury Pollution in Japan: A Bigger Question for Sikkim Himalaya**

Evelyn Lepcha, Assist Prof, Geography

St Joseph's College

**Abstract**

A rapid industrialization for economic development has massively altered the natural environmental settings in all corners of the world. Methylmercury pollution in Shiranuhi sea in south-eastern side of Japan is an evidence of a disaster caused by anthropogenic activities. This paper gives an insight to the effects of environmental contamination on people's lives and also highlights the cause of the disease and various disputes regarding Minamata disease which remains unsolved till date. Prior to the establishment of JNC or Chisso Company in 1908, Minamata Bay was a flourishing fishing village which later transformed into an industrial town. Free flow of Industrial waste from Chisso Company since 1908 into the sea changed the scenario of Minamata, located on the southern tip of Kumamoto Prefecture. The mercury poisoning was first recognized on 1<sup>st</sup> May, 1956 and till date we have many victims of methylmercury poisoning, which proves that any environmental contamination will have its long-lasting effects. In recent years Sikkim has been a pharma hub with 14 major pharma companies. Since the year 2000 many changes are being witnessed by the local people in East district of Sikkim. So, the question remains - Is economic development at the cost of environmental degradation the only way for development? Time will unfold various events in the future in Sikkim Himalaya.

**Keywords:** Minamata Disease, Industrial Waste, Methylmercury, Japan

TWO DAYS INTERNATIONAL SEMINAR ON  
EASTERN HIMALAYA-EXPLORING MULTI AND INTERDISCIPLINARY  
RESEARCH APPROACHES

**Water Borne Disease Scenario in Sikkim, Eastern Himalaya, India**

**Dilli Ram Dahal\* and Sundeep Chettri\*\***

\*Assistant Professor, PG Department of Geography, Sikkim Government College,  
Namchi, Kamrang-737126

\*\* Project Associate, Sikkim State Council of Science & Technology  
Deorali-737102

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**Abstract**

Water Borne diseases (WBD) are mainly caused by pathogenic micro-organisms transmitted through water. Globally, most widespread water borne disease are diarrhoea and cholera which is regarded to be responsive to climate and are related to use of unhygienic and unsafe water. This illness is mainly caused by pathogens which are bacterial, viral, protozoal and heminths. Outbreaks of water borne disease are usually reported during the time of extreme events like droughts and floods etc. and its intensity has also multiplied owing to contemporary climate change. Several studies have come to the conclusion that WBD especially, acute diarrhoeal disease, and cholera has a positive relationship with the climate change directly and indirectly and the state of Sikkim is not an exception in this case. WBD data of the state (2003-2018) with regard to acute diarrhoeal disease including cholera revealed that about 9-10% of total population of the state gets infected with this disease. In 2010 the incidences of this diseases in the state were reported on a higher side upto 62,053 patients. Similarly, state has registered about 6,78,288 cases of acute diarrhoeal diseases (gastroenteritis & cholera) among the people of Sikkim during 2003-2018. As rainfall and temperature are very closely connected with the elements of climate & weather. The state registered an average rainfall of 3,405 mm and a maximum temperature of 24°C during 2010. Further, it was also noted that most of the cases reported from this category of disease belong to the child groups between the age of 0-16 years. The massive growth and increasing incidence are attributed to the dependency of majority of population on local water sources and supply which are being considered unsafe.

**Keywords:** Water Borne diseases, cholera, Sikkim, rainfall & temperature

**INITIATIVE FROM THE GEOGRAPHICAL SOCIETY**  
**DISTRIBUTION OF CLOTHES AND FOOD TO THE NEEDY PEOPLE**

**PLACE: MAHAKAL TEMPLE & CHOWRASTHA**

**DATE: 26/03/2022**

The students of Geography Department distributed clothes and ration to the needy and homeless people at Mahakal temple and Chowrastha on 26<sup>th</sup> March 2022. 2<sup>nd</sup> semester students took this initiative to do something for the needy and homeless people. On the same day half of the students cleaned the entire department and planted some indoor plants and reused some plastic bottles and made flower-vase and pots for the plants.



**FIELD STUDY OF 4<sup>TH</sup> SEMESTER GEOGRAPHY STUDENT**  
**Rural Livelihood Of Eastern Kalimpong Himalaya, West Bengal**

**Date: 21<sup>st</sup> – 26<sup>th</sup> March 2022**

Field study was held on 21st to 26<sup>th</sup> March 2022 to explore the Rural Livelihood of Mulkharka, Tagathang and Kolakham village of East Kalimpong Himalaya. Socio-Economic Survey was conducted on the topic "Rural Livelihood Of Eastern Kalimpong Himalaya, West Bengal" for Partial fulfilment of B.A Geography Fourth Semester Hons Examination 2022 under the supervision of Dr. Priyat Rai (HOD) Assistant Professor and Joint Supervisor Ms. Evelyn Lepcha Assistant Professor. Department of Geography. The field study mainly focused on exploring the changing rural livelihood of the rural people and how this change have affected on their socio-cultural and economic well being.

**No of participants**

1. Total of 48 students has actively participated the field tour with two teachers.



## **FIELD STUDY OF 6<sup>th</sup> SEMESTER GEOGRAPHY STUDENT**

**Date: 25<sup>th</sup> – 30<sup>th</sup> April 2022**

Sixth Semester students were taken for field study to Sepi and Gurdum Forest Village, Western Darjeeling Himalaya area for Disaster Management Project for the partial fulfilment of B. A Geography Sixth Semester Hons Examination 2022 under the supervision of Dr. Pribat Rai (HOD) Assistant Professor and joint Supervisor Ms. Evelyn Lepcha, Assistant Professor and Ms. Parvati Rai, Assistant professor Department of Geography. The major objective of the field study was to explore the local people capacity, preparedness and adaptability during landslides and earthquake hazardous event.

### **No of participants**

1. Total of 34 students has actively participated the field tour with three teachers.
2. Followings are some photographs from the field tour.



**Writing Contest**  
**Organised by Geographical Society**  
**Date: 4<sup>th</sup> June 2022**



**CERTIFICATE OF APPRECIATION**  
**FROM MANAV UTTHAN SEWA SAMITY**

Manav Utthan Sewa Samity expressed its gratitude for the generous contribution made by Geographical Society St Joseph's College for the Mission Education Project on 18 June 2022.



## **PARTICIPATION IN EXTEMPORE SPEECH**

Organised by

Manav Utthan Sewa Samity, Darjeeling

Topic: The Power of Youth, that's within you

Date: 08 August 2022

