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Relationship of Ecology and Environment – Geographer's concerns | Kalita & Barman

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by K. Kalita and R. Barman *

It has long been evident that there is a close relationship of human society and its activities with the modern concept of ecology–ecosystem in an area, region or a country or the globe as a whole. In the beginning, the term ecology or its equivalent one, such as oekologie coined by Ernst Haeckel in 1886, ethology and hexicology used respectively by I.G.S Hilaire and S.G. Mivart before Haeckel had their only strong based in biological sciences. Today the term ecology and its system called the ecosystem have been carrying broad meaning, scope, strength and application towards understanding the environmental components of biotic and abiotic nature and their processes ending in the resultant progressive pattern and impact in the areal or spatial context involving a man and his environment. As such, the ecology or ecosystem bears a great significance not only in understanding community or individual behavior, living organisms or their relationship with the natural resources, but also in sustainability of the environment, society, production system and other things which are always needed by plants, man and animals.

The biotic and abiotic components have always their deep interrelations and interactions both in the horizontal and vertical directions to create a characteristic ecosystem of a congenial environment. Different areas have their different ecosystems, even as their principles of patterns and processes are the same. For example, the tropical ecosystem, desert ecosystem, river valley ecosystem and hill ecosystem, etc., can best clarify the idea. As already mentioned that today's ecology and ecosystem have a broad context of analysis, it can be argued that the terms have their strong functioning bases with spatial sciences like geography, anthropology and some others. The science of economics can also be included here, and therefore, in addition to natural ecology and

Climate Change Impacts on Forests and the Livelihoods of Tribal People of Northeast India

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Abstract

The degradation of forest lands has severe impacts on the environment and livelihoods of the people including health and socio-economic condition. One of the main drivers of forest degradation is slash-and-burn agriculture practiced traditionally in the hills of tropics and it accounts 60 percent global forest loss every year. In northeast India, this method of agriculture is practiced extensively and about 0.45 million families are involved in this activity. The forest area covered annually by this cultivation is about 10,000 km². At present in northeast, the estimated land under shifting cultivation or jhum is estimated to be 44,000 km². Loss of forests due to shifting cultivation has caused many problems ranging from floods to aridity and catastrophic losses to water quality. Besides, burnt practices of biomass release GHG (greenhouse gases) and this could play significant role for climate vulnerability in the region like northeast.

Climate vulnerability significantly affects the traditional matriarchal society in many parts of tribal areas, socio-economic and ecological conditions, health and the livelihoods. In all these aspects, women are the most sufferers and vulnerable. The increasing numbers of flash floods in this region destroy the standing crops and damage the down slope areas with the debris carried by the flood water. This becomes a regular event during the rainy seasons. The rich customs and traditions of the tribal people help to develop some innovative strategies using locally available resources to overcome this type of unwanted situations.

Keywords: Climate change, vulnerability, shifting cultivation, socio-ecological stress, tropical deforestation.

Introduction

Forest deforestation in the tropical areas plays important role in global climatic change². The rapid deforestations have contributed immensely in the global economy and these lead to rise in global temperature³². Though global forest loss occurred for centuries but the rapid rate of tropical deforestation has become international concern only during the last few decades. Tropical forests, the home of over half of the global biodiversity stock, are vital in influencing the regional climate and are being destroyed at an alarming rate

due to various anthropogenic activities¹⁷. Climate change refers to any change in climate over a longer period of time whether due to natural variability or as a result of human activities. Deforestation caused by the burning of biomass increases atmospheric carbon-dioxide and other trace gases and it accounts for 10 to 25 percent of overall greenhouse gas emissions¹⁰.

The demographic pressure and agriculture expansion in the tropical countries cause for large - scale deforestation and is a major source of carbon emission from terrestrial ecosystems^{1,33}. The estimated global annual carbon emissions from this tropical land use change range from 0.4 to 2.6 Pg¹². Tropical degradation contributes about 17 percent of global greenhouse gas emissions which is considered to be the second largest source⁸. It is estimated that about half of the deforestation in the tropics is the result of expansion of traditional agricultures and slash-and-burn or shifting cultivation contributes the largest portion of it^{11,16,25}.

The other contributing factors for tropical deforestation that have rendered the forests vulnerable to fire are forest fragmentations due to logging, grazing and collection of non-timber forest products¹⁹. These forest fires have reflective impacts on the human health and socio-economic system of the region as well as the physical environment including land use and land cover, climate change and forest ecosystem.

The main occupation of the people of the hills of northeast India is predominantly agriculture. The very customary and traditional method used is shifting cultivation, locally known as jhum. In this slash-and-burn method of agriculture, huge stocks of bioresources are lost every year. For instance, the primary forest of the Nokrek Biosphere Reserve of Meghalaya has been destroyed to a great extent by age old tradition of shifting agriculture which is extensively practiced even in the vulnerable steep slope areas which are very prone to landslide and erosion²².

In northeast India jhum is done in all the hill areas except Sikkim. As a consequence, there are physical, environmental, socio-economic and health impacts in these areas. This practice has been immensely contributing towards the climate change and global warming which have been mostly unnoticed or neglected for years. In this study, an attempt has been made how climate change has impact on the forests and livelihoods of the hill people of northeast India.

A Study on Landslide Hazards through Microzonation Approach - A case of Gangtok, Sikkim

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Abstract

Microzonation approach or hazard mapping is one of the modern options towards the management and mitigation of landslide hazards of a region. Landslides, mass movements and slope instability are common and serious geoenvironmental hazards in the Himalayas. Gangtok, the capital of Sikkim State has been struck by different types of landslides in recent years. Study shows that the developmental activities in and around Gangtok particularly in the past three decades have aggravated the landslide incidences to a great extent. However, the landslide hazard studies on Gangtok have been carried out by using data for various geoenvironmental parameters viz. lithology, geology, slope, soil, drainage, rainfall and forests.

A numerical weightage called Landslide Susceptibility Index (LSI) has also been assigned for this purpose. Based on the data and their relationship, a microzonation map has been prepared to show the different categories of landslide hazards of the region.

Keywords: Microzonation, Geoenvironmental hazards, Susceptibility Index (LSI).

Introduction

A landslide is a rapid sliding or collapse of mass of earth or rock in various forms and sizes. It is a type of natural phenomenon occurring mainly on the slopes of the hills or mountains due to the gravity of saturated mass of earth or rock debris. In fact, wherever the mountain slopes are steep, there are always possibilities of large disastrous landslides. However, rapid movement of a mass of rock, debris or earth down a slope from the stationary part of highlands produced disastrous effect on the natural environment and man-made structure, weakness the infrastructure facilities, makes people homeless and disrupts the productive bases.

Landslides occurs almost universally, usually as a function of slope of the terrain and it may be caused mainly by i) causative factors and ii) triggering or catalytic factors. Though landslides are local phenomena, the loss of life and property due to its effect is comparatively witnessed more in recent years particularly in the hilly and mountainous inhabited areas of the world.

Gangtok, the capital of Sikkim has been struck by different kinds of landslides especially in the past three decades.

Landslides of various types and intensity have always been threatening and damaging the life and property of the area, particularly in the rainy seasons. It is one of the most common disastrous geohazards of Gangtok. Occurrences of landslides are quite common in Sikkim Himalayas and damages caused every year in many parts of the state are very large¹. Study reveals that the unplanned developmental activities in and around Gangtok have aggravated the landslide incidences to a great extent. Hence the present study seeks a study of landslides in Gangtok through microzonation approach, so that steps can be undertaken to mitigate the severity of the events in the days ahead.

Study Area: Gangtok is situated in the western part of the Eastern Himalayas at the height of 1000 to 2200 metres from the mean sea level. The 27°20' N latitude and 88°40' E longitude pass through Gangtok and it covers an area of 40.81 sq. km. The rivers Rani khola and Bhusukhi khola flow from the north to south of Gangtok (Fig. 1). Presently, it has a population of about 1, 89,145 and chiefly occupied by Nepali, Bhutia and Lepcha community. Gangtok is the most populated urban centre of Sikkim which is sharing almost 80 per cent of its aggregate urban population.

Methodology

The data for the study is largely collected through intensive field work. Toposheet No.78/11 (1; 50000), aerial photographs, satellite images, maps of geomorphic parameters and land-use/land-cover maps have been used for the study. Literature on microzonation approach is also consulted for the purpose. The analysis has been carried out by using data for various geoenvironmental theme units. A numerical weightage called Landslide Susceptibility Index (LSI) has also been assigned for the purpose. Finally, based on the data and their relationships, the microzonation map of the area has been drawn.

Results and Discussion

Gangtok is situated on the steep slopes at an average elevation of 1600 metres from the MSL and hence the risk for the landslides, slope failures and earthquakes triggered hazards are quite common and ever present. It is to be noted that Sikkim is one of the most landslides hit states of India. It is observed that landslides of all sorts occur almost in all types of rock formations of Sikkim.

Over the decades, landslides of varied nature and types have been causing severe damages to life and property of the state, particularly in East district and that too in and around of Gangtok.^{8,9} However, descriptions about some major

Covid-19: Opportunities for the ODL System in Higher Education in India

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Abstract: The higher education in India is about 150 years old. During this time it has been passing through crucial times. From the quantitative expansion to qualitative maintenance, Indian higher education has been faced much ups and down. The GER of higher education (26.3 %) in India is yet to satisfactory; it is far behind the world's average. Besides, the qualitative aspect of it also lagging behind as compared to the advanced countries of the world. However, the ODL system may be a better option for India to improve the access, equity, quality and opportunity in the field of higher education. Even, during the outbreak of a pandemic like Covid-19, the ODL can be a better option to cope up with the situation. In the present discourse, the importance of ODL is highlights in general and in the context of Covid-19 in particular.

Keywords: Covid-19, pandemic, access, equity, quality, open and distance learning

Introduction: Covid-19 virus was discovered in Wuhan in Hubei province in China in December 2019. The World Health Organization (WHO) declared it as pandemic on 11th March 2020. As of second the week of May 2020, covid-19 virus has infected more than 38, 55,821 persons and it took 2, 65,862 lives in 212 countries round the globe. Almost all the infected countries of the world were lockdown during this pandemic. Like India some other countries of the different parts of the world are also still in lockdown situation. During this pandemic the economy of the world is under serious threats. Particularly, the countries like USA, UK, Italy, Spain, India and Brazil are going through a period of big trouble. In the last three months, the production, trade and supply-chain of goods and services are

almost stop for the covid-19 infected countries, except a few countries like China, Japan, Laos, Vietnam, Nepal, North Korea, etc. Our country is under third phase of lockdown situation which will run till 17th May instant. This situation may further extend for more few weeks also. Because the covid-19 infected cases of our country is daily increasing speedily. On 10th May 2020 the infected people by this virus is recorded as 59,662 and death toll is 1981. If the situation is not control than within coming two weeks the covid-19 infected people of our country will cross the one lakh figure. Nevertheless, during this national emergency all the educational institutions of our country were declared closed for indefinite periods. The different boards' examinations, the entrance examinations of



COVID-19 AND WILDLIFE TRADE IN SOUTH-EAST ASIA

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ABSTRACT

Covid-19 spreads in 218 countries and territories round the globe. Lakhs of people have already infected and lost their lives due to this pandemic. This virus has spread from the Wuhan in China on December 2020. Though the cause of spread of the virus is yet not known but the scientists and academia believe that Covid-19 may be transmitted from the wildlife. Because, it is a zoonotic single stranded RNA virus. South-East Asia is a rich repository of wildlife and also the hub of wildlife trade. The illicit wildlife trade in the region is not a new phenomenon. Due to the illicit wildlife trade the people and biotic life in the region are facing a number of problems in the past decades. In the present study highlights the states of covid-19 and various dimensions of wildlife trade in South-East Asia. And also underscore the relation of this virus with wildlife trade. The results and discussion are chiefly based on the observations and analysis.

Keywords : Covid-19, Virus, Pandemic, Biodiversity, Endemic, Illegal-trade

Introduction

Covid-19 or SARS-Cov2 is now spread and affected almost all the countries of the world. Discovered in the Wuhan in Hubei province in China in December 2019, it took the lives of more than 5 lakhs and affected about 10.31 million people in 218 countries and territories across the globe up to the last week of June 2020. Owing to this pandemic the countries of the South-East Asia including India are badly affected and also going through a tough times. The researchers, scientists, academia and the government agencies in different countries of the world are claiming that Covid-19 is a 'zoonotic virus' and transmitted to human from the illegal wildlife market in Wuhan. It is needless to say that South-East Asia is a hub of wildlife trade. The region is very rich in biodiversity. Some rare, scarce, endemic, and endangered species are found only in this region. The physiography and inaccessibility of the region are also an additional advantage for the wildlife killers and traders of the region. However, it is observed that the wildlife trade

(both legal & illegal) in the region is increasing rapidly after the liberalized and globalized markets of the world. Even, during the Covid-19 lockdown periods, the report of the killing of wildlife has also come out from the different parts of the world. As a result, wildlife and endemic species of the region is facing trouble and threat in the past decades. Therefore, it may be tacit that Covid-19 spreads from the illicit wildlife trade in South-East Asia.

Objectives

- i) To study the present state of Covid-19.
- ii) To highlights the dimension and reasons of wildlife trade in South-East Asia.
- iii) To study the relation between wildlife trade and Covid-19.

Methodology

The secondary sources of data are mainly used for the study. These were mostly collected from the government and private offices, agencies and published documents and reports. However, primary field visit were

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Nature of 'Nature' and Ecofeminism- an overture

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Abstract

Nature always provides bounty for our living and wellbeing to us. From the beginning, humanity has been chiefly depended upon nature for their survival and upbringing. Owing to the unprecedented population growth, unwise use non-renewable resources, speedy advancement of science, technology and ultra-modern living chic, etc., the natural environment across the globe is decrementing its quality day by day, particularly in last 60 years. As a result, erratic behaviour of nature has been seen more in the recent decades in different parts of the world. It is the fact that without a balanced natural environment, no lives would be survived comfortably in the planet earth. Hence, the concern of protection and conservation of the natural environment has come up. In this regards women are more

The Capital of Sikkim : A Preview

Dr. Kamaleswar Kalita

Abstract : *Sikkim is a small Himalayan state of India. It was a sovereign independent state before joining with Indian Union in 1975. The state is endowed with biodiversity, natural beauty and serenity; hence it is now one of the most tourists' visited states of North east India. Gangtok is the present capita of Sikkim. However, during the time of the Chogyals (Kings), the capita of Sikkim has been shifted in different places. The present capital Gangtok is the 4th capital of Sikkim which was shifted from Tumlong in 1894. The present paper discusses the capitals of Sikkim under the rules of Chogyals. The source of the database is both the primary and secondary.*

INTRODUCTION: Sikkim, the small mountain state of India is lying in the Eastern Himalaya Mountain. The bowl like mountain-girdled state is bounded by Nepal in the west, Tibet and Bhutan in the east, Tibet in the north and Darjeeling district of West Bengal in the south. Sikkim lies between the 27° 04' and 28° 07' north latitudes and within 88° 01'2 and 30°55' east longitudes. The state has a total area of 7,096 sq km. The maximum length of the state from north to south is about 113 km, whereas the maximum width from east to west is only 64 km. The altitude varies from 213 m in the south to over 8,500 m in the northwest culminating in the Kanchendzonga peak at 8698 m. It has a population of 6.51 lakhs in 2017. However, the

state has been passing through different stages of changes and development of political and administrative systems.

OBJECTIVE : The main objective of the study is i. to highlight the capitals of Sikkim under the rules of Chogyals.

DISCUSSION AND FINDINGS : In prehistoric times, Sikkim Himalaya was inhabited by three tribes, viz., the Naong, the Chang and the Mon. Limbus and Mangars were also regarded as aborigines of Sikkim. The Mangars were the aborigines of Sikkim, but they were concentrated only in a small part of Sikkim. The Lepcha entered Sikkim sometimes later and slowly absorbed them completely. Thus, now the Lepchas are considered to be the aboriginal inhabitants of Sikkim, and they call themselves '*rong-pa*' which means the 'squatter in' or 'caretaker' of the country of caves' (Sengupta, 1985). The Tibetan apparently colonized Sikkim at some period prior to the beginning of the 17th Century (Gorer, 1996). Before the advent of the Tibetans on the scene of Sikkim, the Lepchas have had some kind of administrative organization headed by a 'Turve' i.e., Punu or King'. But due to the frequent encounters with the 'Kirats' (Rias and Limbus) the Lepcha Kingship came to an end. Tubh Athak Punu was the last Lepcha chieftain. Somewhere in the 13th Century, Guru Tashi, a prince of Minyang dynasty in Tibet, came to Sikkim to get

A holistic analysis of human–elephant conflicts in Karbi Anglong district of Assam

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ABSTRACT

Habitat destruction and shortage of available foods due to deforestation cause serious threat to the elephant population of the hill district Karbi Anglong of Assam. In this paper, an attempt has been made to analyze the causes, consequences and efficacy of the measures taken by the authorities and the forest dwellers of the human–elephant conflict areas. Loss of habitats of the wildlife was estimated during the last decade using temporal remote sensing data. It was observed that about 450 sq. km area of forest have been lost in 10 years. In the year 2009 there were 74.11% forest cover while in 2019 it reduced to 69.81%. A considerable area of dense forest has been converted into open forest during these years and as a result area under both the forests got fragmented. During the decade there were remarkable increases of anthropogenic activities in this region and areas under shifting agriculture (increased by 278 sq. km), settled agriculture (60 sq. km) and degraded land (112 sq. km) took significant expansion. The fragmentation study indicates that the forests near the human habitat areas got shrinking and areas of patchiness and perforation has increased over the time. These habitat destructions forced the tusker to come down to the foothills in search of food and water and destroy the crop fields. The questionnaire survey in three conflict affected villages revealed that there was huge shortage of food in the original habitats of wildlife due to destruction of forest and as a result there were behavioral changes of both tusker and the human. These lead to human elephant conflicts in the human inhabitant areas. Villagers were satisfied with the measures taken by the authorities by installing of solar fencing to check the movements of elephants towards crop land and this had reduced significant amount of damages caused by the wild elephants.

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[\[www.nebio.in\]](http://www.nebio.in)**KEYWORDS**

Karbi Anglong, human–elephant conflict, land use/cover change, forest fragmentation, animal corridor

Introduction

The wild habitats are in serious threat today due to forest fragmentation and natural habitat degradation (Debiski and Holt, 2000, Balmford and Whitten, 2003, Woodroffe *et al.*, 2005). The main cause of habitat loss is the relentless rise of human population which forced the wild animals mainly the large mammals like Asian Elephant (*Elephas maximus*) to turn towards crop raiding for sustenance (Conner and Rudolph, 1991). This results the human elephant conflict (HEC) in many parts of the Asian countries. Over the past half century, the global population of Asian Elephant has declined to an estimated 30,000 to 50,000 animals in the wild. At present about five million sq. km (55.55%) area is left for this species to survive out of original nine million sq. km (IUCN, 2006). HEC has been rising and become one of the major issues in the fight to save Asia's endangered elephants (Nath *et al.*, 2009).

The pressure of development along with unprecedented growth of human population and exploitation of bioresources for commercial purposes have been prime causes of habitat fragmentation, range reduction and shrinkage of forest lands near the protected areas (Jha *et al.*, 2014, Joshi *et al.*, 2011) as well as increasing the conflicts between wild animals and human (Yadav *et al.*, 2020, Sharma and Sarma, 2014, Sarma *et al.*, 2009, Walpole and Linkie, 2007, Kushwaha *et al.*, 2004; Theobald *et al.*, 1997, Sukumar, 1991, Riebsame *et al.*, 1996, Barua, 2010). Quantification and analysis of the impacts on wildlife habitat are vital for wildlife management, which involves the management of the

complete ecosystem (Kushwaha *et al.*, 2000). The greatest challenge for conservation and management of wildlife is maintaining biological integrity of the surrounding habitats and connectivity between protected areas. There is an urgent need to establish connectivity between the core forest areas to maintain vital ecological connections by providing physical linkage between these areas (Mondal and Southworth, 2010). Geospatial technology has been widely used to monitor ecological impacts, changes in the protected areas, and to provide the capabilities to study and interpret wildlife habitat information on different time scales (Kaur *et al.*, 2020, Sarma and Sarma, 2020, Joshi *et al.*, 2017, Eliza and Sarma, 2014, Yadav *et al.*, 2012; Areendran *et al.*, 2011; Nandy *et al.*, 2007; Ravan *et al.*, 2005).

Several districts of Assam viz., Sonitpur, Udalguri, Baksa, Golaghat, Nagaon, Goalpara and Karbi Anglong have been experiencing the human elephant conflicts very badly. There are regular casualties of human due to these conflicts. A total of 332 human lives were already lost across Assam due to the straying of elephants into human habitats between 2014 and 2019, while 128 elephants died in retaliation during this period. These increasing number of deaths both human and elephant is due to the rise in encroachment of forest areas that resulted habitat loss, forcing the pachyderms to come down to the plain areas in search of food and water also caused destruction of houses and crops. The number of houses damaged in the state during 2018-19 (2034 nos.)



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Cuisine of Assam

Assam located in the North Easter part of India is known for many reasons. Due to the diversity of ethnicity, tribes and races, the place has rich cultural and traditional heritage. The present article is about a famous traditional dish of Assam, locally known as «Sewa dia bhat aru hanh» (Steamed rice with duck curry).

Assam located in the North Eastern corner of India covers an area of 78,438 sq. km with about 34.49 million people. The geography of Assam is unique and the socio-economic milieu is also different from the rest of the country. The area is inhabited mainly by Tibeto- Burmese stock, Alpine, Negritos, Dravidian and Aryan races and tribes

having diversity in respects of language, culture, tradition, religion and heritage. Assam is known worldwide for its tea, biodiversity, nature beauty, silk and Bihu (a spring festival). However, it is also famous for food, festivals, songs and drama. The Kaziranga National Park of Assam is famous for its one-horned Rhinoceros. Likewise, the world's tiniest and biggest denizen picturesque riverine islands namely Umananda (.092 sq.km) and Majuli (470.8 sq. km) respectively are found here in the midst of the river Brahmaputra. Majuli is the hubs of vaishnavite culture and diverse potential geotourism sites. Besides, the Mother Goddess Kamakhya Temple is also situated in Assam. The economy of the state is essentially agrarian and a large percentage of the people are engaged in agriculture and primary sector. Rice is a staple food and tea is popular beverage in Assam. The Black Tea (orthodox and CTC) in the state is recognized worldwide for its flavor and medicinal value. Presently there are 803 numbers of large tea estates and around 88000 small tea growers which together produce 500 million kg of tea every year. The Black Tea in Assam has primarily antioxidant and anticarcinogenic properties. Due to the presence of less caffeine content, it helps to protect our skin, liver, heart, bone and also increases our immunity.

Assam has several culinary traditions and both the vegetarian and non- vegetarian food items are prepared in the kitchen. Traditionally, the Assamese people begin their days with black tea and simple homemade snacks as breakfast. During the festive times, the women of Assam always make variety

Landslide Hazard in Gangtok, Sikkim

Dr. Kamaleswar Kalita

Introduction :

Landslide is a movement of a mass of rock, debris or earth down slope. Whilst the causes of slope movement can be quite complex, all slides have two things in common—they are the result of part of the rock and soil materials that make up a hill slope, and they are driven by gravity. Landslides can be triggered by earthquakes, volcanic eruptions, soil saturated by heavy rain or rise in ground water levels and river undercutting. Saturated soil shaken by earthquakes creates particularly dangerous conditions. Although landslides are highly localized, they can be particularly hazardous due to their frequency of occurrence. They can vary in size from single boulders or toppling of tens of millions of cubic meters of materials in a debris avalanche. In fact, most of the landslides are primarily associated with mountainous region of varying altitudinal range and can occur anywhere and at any time in the hilly region without warning. The studies of various aspects of environmental geomorphology and hazards in the Himalayan regions have already been studied by scholars like- Wadia (1966), Valdiya K.S (1973), Bhandari (1974), Sinha (1975), Sexena *et al.*, (1979), Raina and Srivastava (1981), Singh and Pandey (1983), Chatterjee (1986), Gupta (1988), Choubey and Litonia (1990), Chandra (1992), Tashi (1993), Mehrota *et al.*, (1994), Dubey (1995), Sengupta (1996), Joshi (1997), Shrivastava (1998), Singanenenjam (1999), Nath (2000), Shah (2001), Mukhjee (2002), Joshi *et al.*, (2003), Basu and Dey (2003), Rawat (2005), Kalita (2006), Ghosal *et al.*, (2008), Kanungo *et al.*, (2009), Sharma *et al.*, (2011), Rawat *et al.*, (2012), Pardeshi *et al.*, (2013), Singh *et al.*, (2014), Roy *et al.*, (2015), Karmakar (2016), and Vishwakarma *et al.*, (2017) etc.

However, micro-zonation and multidimensional approach to study landslides is comparatively new arena.

Discussion

Sikkim is one of the most landslide hit states of North- East India. Over the decades landslides of varied nature and types have caused extensive damaged to life and property in Sikkim, particularly in the east district. The damage of buildings, roads, communication lines, forest lands and agricultural fields have been caused by the landslides hazards in different parts of the district in general and Gangtok in particular, mainly due to weak geological setting and the unplanned urban development and growth of small urban centers. The combinations of complex geological setting, high tectonic activities, climatic and anthropogenic factors are mainly causing the landslides of the area. The frequencies and severity of damages are seen more in Gangtok and its suburbs. Since, Gangtok is located in the steep ridges, its stability is not complemented in the rest by the fact that it lies in the earthquake prone regions at an elevation of 1600 meters from the mean sea level, and hence, risks from disasters like landslides, slope failures and earthquakes remain ever present.

Landslides of all descriptions occur in almost all types of rock formation in Sikkim. Study shows that numbers of the worst hit landslides have occurred in Gangtok and its suburbs in the last 35 years. A few such worst hit landslides of the study area were- Deorali (September 1990), Syari (September 1990), Development Area (June 1997), Chandmari (June 1997) Syari (May 1997), Deorali (September 1995), Deorali (September 2005) and Tadong (September 2005) where many people lost their lives and property (*Sikkim Herald, 2006*).

COMMUNITY RADIO AND RURAL DEVELOPMENT IN INDIA

□ Kalita Kamaleswar*
Gogoi Mouchumi**

ABSTRACT

Community Radio was introduced during a labour strike in the Bolivia in the 1940s and since then community radio continues to spread all over the world. where local people produce and broadcast their own programmes. Community radio was not an authorized body in India till 2002. Anna F.M was launched on February 1, 2004, which was the first campus community radio station of India initiated by the students of Anna University, Chennai. Community radio is a unique tool for rural development. It highlights the issues like education, health, hygiene, poverty, sanitation, agriculture, gender inequality, superstition, infrastructures, literatures, literacy, music, religions, festivals, folklores, traditional knowledge, environmental problems, disaster management and other social problems. Community radio always identifies and analyses the local problems, particularly in the rural areas and their solutions. Meanwhile, community radio stations are also facing challenges like financial paucity, completion from the private stations, managerial skill, etc. The study highlights the state and role of community radio in rural development.

Keywords : Community radio, Broadcast, Rural development,

Introduction

Community Radio (CR) is a worldwide phenomenon where local people produce and broadcast their own programmes. It was introduced during a labour strike in the Bolivia in the 1940s. Since then community radio continues to spread all over the world. Community radio is a short- range non-profit voluntary activity operated and driven by a community they serve. Community radio broadcasting enhances the pluralism and diversity of our society. It is a unique and effective tool for rural development. Community radio always identifies and analyses the local problems and their solutions. Community radio is a third broadcasting system along with public and private radio broadcasting. It also helps and empowers the remotest rural communities to integrate themselves into the nation building processes.

Objectives

- i) To study the state of community radio in India.
- ii) To highlights the role and importance of

community radio in rural development.

- iii) To highlights the major challenges of community radio.

Methodology

The primary and the secondary data are chiefly used for the study. The researchers have visited the community radio stations to understand the different aspects of community radio. The secondary data were collected from the government and private offices, agencies and published documents and reports. Personal interviews were also conducted to know the perception of the listeners of community radio. The open-source e-resources have also been used for this purpose. Finally, data on various aspects are analyzed to reach the findings of the study.

Results and Discussion

India has about 104 million homes that have radio and it could potentially reach up to 98 percent of its population. It is to be noted that radio is not dependent on the availability of electricity in rural areas. Hence it can

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