

CHAPTER 29

GEOGRAPHY

Doctoral Theses

01. MADHURI
Sanitation, Menstrual Management and Reproductive Health Practices Among Migrant and Non-Migrant Women: A Case Study of Aligarh District, Uttar Pradesh.
Supervisor: Prof. Anindita Datta
Th 28304

Abstract

This study examines menstrual management practices among migrant and non-migrant women in Aligarh district, Uttar Pradesh, highlighting their differing social and economic contexts. Migrant women working in agriculture and brick kilns, face significant challenges compared to non-migrant women, who are permanent residents. Migrant women rely on open fields for bathing, urination, and disposal of absorbents, facing harassment, water scarcity, and a lack of privacy. They predominantly use Kapda (old cotton cloth) due to the high cost of sanitary pads, washing and reusing them under unhygienic conditions. Financial hardships and the refusal of thekedars to allow restroom construction worsen their struggles. Non-migrant women, though economically better off, also avoid home restrooms during menstruation due to cultural taboos, preferring fields for changing and disposal. They combine Kapda and pads depending on affordability and awareness. Both groups face restrictions rooted in patriarchal norms, such as limited mobility, dietary restrictions, and societal stigma. Despite better water access and family support, non-migrant women adhere more strictly to traditional practices, illustrating the interplay of privilege and cultural constraints. Shared challenges include poor reproductive healthcare, lack of awareness about contraception, HPV vaccines, and antenatal/postnatal care. Issues like white discharge, infections, and irregular periods often go untreated due to myths and embarrassment. Migrant women rely on traditional remedies, while non-migrant women access slightly better healthcare. Economic pressures force pregnant migrant women to work until delivery with inadequate care. Using body mapping as a methodological tool, the study reveals how societal norms shape women's experiences, aligning with Carol MacCormack's (1985) approach to reproductive health as geography. The findings stress the urgent need for menstrual health resources, improved sanitation, reproductive healthcare, and education to dismantle taboos, promote gender equity, and empower rural women in India.

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1. Introduction 2. Outlining the Study Area and Participant Profile 3. Body Mapping: Mapping the Participant Bodies 4. Mapping the Menstrual Management through Sanitation 5. Mapping Participant's Menstrual Management 6. Mapping the Unmet Needs for Menstrual Health Care and Reproductive Health Care 7. Interpretation and Recommendations: The Life Cycle Approach. Bibliography and appendices.

02. MALIK (Maansi)
Assessment of Land-use/cover and its Impact on Ecosystem Services of Tsomoriri Lake, Leh, Jammu and Kashmir.
 Supervisor: Prof. Suresh Chand Rai
Th 28305

Abstract

High-Altitude Wetlands located in the Trans-Himalayas are characterised by pristine environments and hold sacred value for local indigenous communities. Fed by snow and glaciers and located at the interface of terrestrial and aquatic environments they hydrology of these wetlands is unique and characterized by endemic flora and fauna. The Tsomoriri Lake, a designated Wetland of International Importance under the Ramsar Convention since 2002 is a High-Altitude Wetland located at an elevation of more than 4000 m in a region known as the Changthang Plains in Ladakh and has a surface area of about 148 km². The region is inhabited by indigenous tribes called the Changpas who are nomadic herders and dependent on the lake ecosystem for its varied variety of ecosystem services. The lake ecosystem as of today lies at the intersection of ecological, social, economic and geo-political transformation after the annexation of Tibet in 1951, the Sino-Indian Conflict in 1962 and the opening of the Tsomoriri Lake to the outside world for tourist access since 1993-4. This study is an attempt to highlight and investigate into the vulnerabilities impact the Tsomoriri Lake through an estimation of Land-use/cover change and its impact of the provision of various ecosystem services to the local Changpa indigenous tribal community and their socio-economic development. It also aims to highlight the socio-economic transformation experienced by these tribal groups under the influence of rapid development, modernization and urbanisation. Furthermore, a detailed analysis has been made in to the traditional ecological knowledge of the Changpa community as these communities have continued to sustain the hardships of the extreme environment and pastoral lifestyle through their customary heritage and traditional practices.

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03. NIRAJ KUMAR
Dynamics of Land use and its Socio-Economic and Environmental Implications Influencing Food Security: A Case Study of Sonipat District, Haryana.
 Supervisor: Prof. Tejbir Singh Rana
Th 28306

Abstract

Changes in land use, especially those driven by urbanization and industrial growth, have significant socio-economic effects on communities that depend on agriculture for their livelihoods. As cities grow, they take over agriculture land and reduce the availability of land for agriculture. This leads to a drop in local food production, which hamper the availability of food grains. The division of agricultural land and land acquisitions caused by urban development disrupts traditional farming, making

it harder for farmers to sustain productivity and profitability. When fertile farmland is converted into residential or commercial property, farmers often lose their land, leading to loss of traditional knowledge and complete change in way of life. This change triggers a chain reaction, affecting local economies, causing higher unemployment and poverty in rural areas, reduction in income, and additionally, reduced agricultural output which may increase reliance on food imports. Haryana is dominated by the monocropping of two crops i.e. rice and wheat and outnumber the other food crops which highlights the issue of nutrition security. To address these issues, it is vital to promote sustainable land use practices that balance urban development with agricultural preservation. This study is a novel attempt to understand the land use change and its impacts especially socio-economic and environmental and also how land use change affects the food production in general and food security in particular. Various qualitative and quantitative methods along with GIS techniques, are used to analyze the data. Keywords: Land use change, urbanization, food security, sustainable, socio-economic, monocropping.

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04. RAMAN (Ekta)

Measuring the Impact of Urban Road Transportation System on Air Quality and Human Health in Patna.

Supervisor: Prof. Poonam Sharma

Th 28303

Abstract

The Earth has undergone constant change since its origin, with human activities significantly altering natural environments, particularly through land use/land cover (LULC) changes. Urbanization, population growth, and economic development have transformed rural areas into urban centers, intensifying stress on natural resources and resulting in urban sprawl. In Patna, unplanned and unregulated urban growth has led to rapid LULC changes, traffic congestion, and environmental degradation. The city's transportation network, dominated by private vehicles, faces severe challenges due to inadequate infrastructure and inefficient public transportation, further exacerbating congestion. Air pollution is a critical concern in Patna, one of Bihar's non-attainment cities under the National Clean Air Programme (NCAP). The rapid rise in vehicles, industrial emissions, and urban activities has led to deteriorating air quality, significantly impacting public health. Pollutants like PM_{2.5}, CO, SO₂, and NO_x are linked to respiratory and cardiovascular diseases, with annual deaths due to air pollution exceeding 4,000 in Patna. The city's air pollution is also part of a global challenge, as low- and middle-income regions disproportionately bear the burden of outdoor air pollution, contributing to millions of premature deaths annually. The study highlights the intricate relationship between vehicular growth, LULC changes, and air

quality. While vehicular emissions are a major source of particulate matter, other factors such as industrial activities and meteorological conditions contribute to the city's worsening air quality. The lockdown during COVID-19 provided a unique glimpse into reduced emissions and environmental recovery, emphasizing the urgent need for sustainable urban planning. Addressing these challenges requires a multifaceted approach, including infrastructure upgrades, efficient public transportation, traffic management, and air quality monitoring. Policy interventions, technological advancements, and community engagement are essential for reducing pollution, improving mobility, and fostering sustainable urban development.

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05. Roosen Kumar

Assessment of Altitudinal Variations of Treeline and its Impact on Livelihood of Transhumance and Local Community in Chamoli District: Garhwal Himalaya.

Supervisor: Prof. Bindhy Wasini Pandey

Th 28307

Abstract

This study examines the altitudinal variations of treeline in Chamoli district, Garhwal Himalaya, and their implications for transhumance practices and local livelihoods. By employing a multidisciplinary approach, including spatial analysis, field surveys, and socio-economic assessments, it investigates the dynamic interplay between ecological changes and human activities over the last four decades. The study reveals significant treeline shifts, driven by climate change, land-use patterns, and ecological dynamics. Between 1980 and 2020, the alpine treeline expanded from 478 km to 768 km, with an average upward shift of 576.30 meters. These changes have altered vegetation patterns, reduced snow cover, and significantly impacted traditional grazing areas. Transhumance, a critical livelihood for the Bhotias and other local communities, has faced severe challenges due to shrinking pastures, invasive species, declining fodder quality, and water scarcity. This has led to reduced livestock density, the near disappearance of sheep farming, and diversification into agriculture, tourism, and migration. Restricted grazing policies and reduced profitability have discouraged younger generations from continuing these practices. However, adaptive strategies, such as resilient crop cultivation, organic farming, fodder storage, and modern techniques like plastic tunnels, have emerged to mitigate these challenges. Additionally, local NGOs and government programs have supported alternative income sources and improved resilience. The research highlights the socio-economic impacts of treeline shifts, particularly on traditional livelihoods, and explores adaptation and mitigation strategies for sustainable livelihood planning. Using tools like NDVI analysis, FGDs, and case studies, it identifies key determinants of livelihood changes and evaluates community resilience. Recommendations include flexible grazing policies, economic diversification, and integration of traditional and modern approaches to enhance resource management and community well-being. This study underscores the importance of understanding ecological and social

interactions to develop sustainable management practices, ensuring the preservation of traditional lifestyles and resilience in mountainous regions.

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1. Introduction 2. Geographical Profile of the Study Area 3. Assessment of Altitudinal Variations in Treeline, 1980-2020 4. Spatial-Temporal Analysis of Landuse and Landcover Changes 5. Impact on Transhumance and Local Livelihood 6. Adaptation and Mitigation Strategies 7. Conclusion and recommendations. Bibliography and annexure.

06. TOMAR (Pratibha)

Dynamics of Husband's Migration, Women Autonomy, and Reproductive Behavior: A Case Study of Eastern Uttar Pradesh.

Supervisors: Prof. Anindita Datta and Praveen Kumar Pathak

Th 28308

Abstract

Women's autonomy and reproductive health emerge as pivotal yet challenging dimensions of the social and economic prospect, particularly influenced by the dynamics of husband migration that are so persistent in eastern Uttar Pradesh. The multilayered social and structural barriers, gender relations and family dynamics impeded women from accessing their own healthcare and freedom of mobility and utilising reproductive health services (RHS) in rural areas of Uttar Pradesh. The Sustainable Development Goals (SDGs) for 2030 emphasise the key priority of ensuring universal access to sexual and reproductive healthcare services and gender equality for all women and girls as a fundamental human right. The study examines the dimensions of women's autonomy and reproductive health behaviour (current contraceptive use/abortion/miscarriage/early pregnancy and use of maternal health care services) across the context of migration status of husbands and other selected demographic and socioeconomic characteristics. The mixed-methods approach was used for primary data collection for 300 currently married women between the 18-40 age group, 37 face-to-face in-depth interviews and 07 focus group discussions spread across 17 villages of Dobhi Block in the Jaunpur district of Uttar Pradesh. Secondary data was analysed using the National Family Health Survey (NFHS-5) across 28 districts of Eastern Uttar Pradesh. The findings showed that significant variations were observed in women's decision-making and reproductive health outcomes in the context of the migration status of the husbands. The decision-making power and access to reproductive health services are lower among women with migrant husbands than those women with non-migrant husbands. This study provides empirical evidence of the association between women's autonomy, husband migration and reproductive health outcomes in rural Uttar Pradesh. The study has generated valuable insights for policymakers, healthcare providers and demographic researchers that can be utilised to formulate effective policy interventions for these marginalised populations. Keywords: Women's Autonomy, Women's Decision-Making, Husband Migration, Sexual and Reproductive Health, Contraception Knowledge, Reproductive Health Outcomes.

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1. Introduction 2. Study Area and Research Methodology 3. Profile of Study Respondents. 4. Perceptions of Freedom: Women's Autonomy across Diverse Demographic Landscapes 5. Husband Migration and Women's Autonomy: Patterns of Decision-Making and Mobility 6. Embodied Choices: Dynamics of Husband Migration,

Women's Autonomy and Reproductive Health Behaviour 7. Transforming Women's Health Landscape: Institutional Support Systems for Women's Reproductive Autonomy 8. Summary, Conclusions and Policy Recommendations. Annexures.

07. UPADHYAY(Smriti)

Vulnerability Analysis for Human Trafficking in Disaster Prone Areas of Indo-Nepal Terai Region.

Supervisor: Prof. Kavita Arora

Th 28309

Abstract

Human trafficking is a heinous crime with far-reaching consequences and affects communities and groups at large. In the South Asian context, the Indo-Nepal Terai region emerges as the focal point for human trafficking incidents. Geophysical hazards and the porous border between India and Nepal further heighten the vulnerability of this region. Literature review revealed that despite many studies on human trafficking not much work is done to explore the linkages between disasters and human trafficking. Against this background, this research aims to bridge that gap by adopting a comprehensive approach that considers the multifaceted dynamics in the convergence of human trafficking and natural disasters. The primary focus of this research is to analyze the disaster-induced physical and socio-economic vulnerabilities that exist in the Indo-Nepal Terai region and how these vulnerabilities trigger cases of human trafficking. For the assessment of physical vulnerability in the Indo-Nepal Terai region, three major recurring disasters have been selected i.e., landslides, floods, and earthquakes. For the socio-economic vulnerabilities, major indicators such as gender, age, per capita income, occupation, education, religion, etc. were taken and analyzed through Principal Component Analysis. Based on these, maps were prepared by using ArcGIS, and low, medium, and high-risk vulnerability areas were identified. From high-risk zones, two districts from each country were selected for fieldwork, and extensive fieldwork was carried out in selected districts i.e. Supaul in India and Sunsari in Nepal. The research also aims to study the socio-economic conditions of trafficked victims in pre-, during, and post-trafficking phases. Another objective is to get the response and observations of different stakeholders that are actively working against human trafficking so that their inputs can be used to analyze the reasons for trafficking, difficulties in combating the problem, and required efforts. Their suggestions can be used by policymakers, trainers, field workers, law enforcement agencies, and in drafting anti-trafficking legislation to address the problem of human trafficking. For the methodological approach, the study has used primary and secondary information sources. Primary data has been collected through both structured schedules and questionnaires. Secondary data have been meticulously gathered from various government websites, reports, and academic studies and from a wide array of pieces of literature. Data was collected using a structured schedule and subsequent tabulation was conducted with the assistance of Excel sheets. Based on data analysis it was found that disasters and human trafficking have strong linkages, which need to be explored further by using different methods and studies.

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1. Introduction 2. Vulnerability Analysis for Human Trafficking in Disaster Prone Areas: A Case Study of Indo-Nepal Terai Region 3. Study Area and Profile of Human Trafficking Victims in Supaul (India) and Sunsari (Nepal) 4. Understanding Human Trafficking through Survivor's Perspective 5. Policies, Legal Measures, and Stakeholders Perspective 6. Conclusions and Suggestions. References and Annexures.