CHAPTER 26

GEOGRAPHY

Doctoral Theses

01. GUPTA (Vedika)
Identifying and Assessing Geotourism and Geoconservation of Geoheritage Sites in Bagh Region of Dhar District, Madhya Pradesh.
Supervisor: Prof. Subhash Anand
Th 29036

Abstract

India's remarkable geological diversity, encompassing features from the Deccan Traps to the fossil-rich strata of Central India, represents a significant yet underrepresented component of global geoheritage. This research critically examines the Bagh region of Dhar District, Madhya Pradesh, as a potential geopark landscape through an integrated assessment of its scientific, geotourism, and geoconservation values. Despite extensive geological research, the Bagh area had not been evaluated within a unified geoheritage framework. This study identifies seventeen geosites distributed across Kukshi, Manawar, and Gandhwani tehsils, encompassing stratigraphic, paleontological, geomorphological, and cultural features, notably the Bagh Caves and traditional Bagh Print craft. Employing Brilha's (2016) methodological framework, the research quantitatively evaluates the scientific significance, geotourism suitability, and degradation risk of each site. Spatial analysis using GIS and Land Use/Land Cover (LULC) mapping (2003–2024) reveals substantial anthropogenic pressures, particularly urban expansion and land conversion within 1–5 km buffer zones of key geosites. Concurrently, thematic analysis of stakeholder interviews (n=25) provides insights into community awareness, perceptions of geotourism, and governance challenges. Findings show that although Bagh's geosites possess high scientific and educational value, limited legal protection, extractive land use, and low public awareness constrain their conservation. The study proposes a holistic geoconservation framework integrating scientific evaluation, spatial monitoring, and community participation, emphasizing that successful geopark planning must align with local socio-economic realities. Comparative analysis with UNESCO Global Geopark (UGGp) criteria indicates that Bagh meets fundamental geological and cultural benchmarks but requires institutional strengthening and coordinated management to achieve eligibility. A SWOT analysis highlights significant strengths in geoheritage and cultural identity but underscores weaknesses in infrastructure, legal enforcement, and awareness. This thesis concludes that Bagh represents an emerging geopark landscape scientifically coherent yet institutionally nascent exemplifying the challenges and opportunities of geopark development in India. The integration of geoscience, community engagement, and sustainable tourism presents a replicable model for future geoheritage management. Ultimately, the research reinforces that geoconservation is not merely a scientific pursuit but a social imperative, linking geological pasts with sustainable futures through education, policy, and collective stewardship. Keywords: Geoheritage; Geoconservation; Geopark; Geotourism; Brilha Framework; Bagh, Madhya Pradesh

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1. Introduction 2. Literature Review and Research Methodology y 3. Geographical Profile of The Study Area 4. Assessment of Scientific Value of Geosites 5. Analyzing The Geotourism Dimensions in Bagh 6. Geoconservation Assessment and Local Perspectives 7. Identifying Bagh As A Potential Geopark 8.Summary, Conclusion & Suggestions. Bibliography and Appendices.

02. NITIN

Comparative Study of Integrated Organic Farming in Rohtak and Bhiwani District.

Supervisor: Prof. Daljit Singh and S.K. Sinha

Th 29037

Abstract

The present study examines integrated organic farming in Rohtak and Bhiwani districts of Haryana through a comparative framework, highlighting regional differences in adoption, efficiency, and perceived constraints. Haryana's agricultural transformation under the Green Revolution resulted in substantial productivity gains driven by intensive use of chemical inputs, mechanization, and irrigation. Over time, however, concerns related to environmental degradation, declining soil health, and rising input costs have encouraged farmers to explore sustainable alternatives such as organic farming. The study is based on both secondary and primary data, with primary information collected from organic farmers using the chain referral sampling method. An analysis of the socio-economic characteristics of organic farmers including age, education, caste, income, and family structure indicates that adoption of organic farming is influenced by human capital, economic stability, and awareness of health and environmental issues. Inter-district variations are evident, with farmers in Rohtak district, owing to its proximity to the Delhi National Capital Region (NCR), benefiting from better market access, higher consumer awareness, and greater exposure to institutional support compared to Bhiwani district. Farmers' motivations, perceptions, satisfaction levels, certification status, price realization, and marketing channels were also examined. While health benefits, sustainability, and soil and water conservation emerged as key motivating factors, constraints related to certification procedures, availability of organic inputs, and marketing infrastructure continue to limit expansion. To capture multidimensional differences in organic farming performance, three composite indices were constructed: The Organic Farming Perception Index (OFPI), Organic Farming Challenges Index (OFCI), and Organic Farming Efficiency Index (OFEI). Correlation analysis was employed to examine associations between socio-economic variables and these indices, followed by regression analysis to identify key determinants of perception, efficiency, and challenges. The results reveal significant inter-district differences, with education, experience, and market connectivity positively influencing perception and efficiency, while inadequate institutional support and technical assistance intensify challenges across both districts. The study concludes that integrated organic farming holds substantial potential for promoting sustainable agriculture in Haryana, provided region-specific policy interventions, improved institutional support, and strengthened market linkages are effectively implemented. Keywords Integrated Organic Farming, Green Revolution, Socio-economic Determinants, Organic Farming Indices, Sustainable Agriculture.

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1. Introduction 2. Bhiwani and Rohtak District: Land, People and Economy 3. Agriculture of Haryana: Status and Present Scenario 4. Socio-Economic Profile of Organic Farmers in the Study Area 5. Development and Characteristics of Organic Farming in the Study Area 6. Determinants of Organic Farming: Perception, Efficiency, and Challenges 7. Summary, Conclusion and Suggestions Bibliography and Appendix.

03. YADAV (Ghanshyam Singh)
Water Crisis and Its Management in Bundelkhand Region of Uttar Pradesh.
Supervisor: Prof. Punyatoya Patra
Th 29038

Abstract

The global water crisis has emerged as one of the most critical environmental and developmental challenges of the 21st century. The Bundelkhand region has been in the news for last several years due to its persistent droughts, declining groundwater levels, and severe water stress. This research aims to estimate, analyse, and interpret the spatial patterns of water scarcity. Water Poverty Index (WPI) is used to assess the degree of water scarcity at the block level across the Bundelkhand region of Uttar Pradesh. Secondary data sources have been used for the study. The data were normalized using the HDI method. To complement the secondary data analysis and to understand the issue at the micro level, a primary field survey was undertaken in 6 sample locations. A multistage sampling technique was adopted. Two villages from each block were selected for detailed household-level surveys using structured schedules. The sample size was determined using a 95% confidence level and a 10% margin of error. A total of 437 valid responses were collected. At this village level, the WPI was recalculated using seventeen indicators to capture local variations in water access, availability, and management. The results revealed significant spatial disparities in water poverty acro Blocks such as Manikpur, Ramnagar, Pahari and others were categorized as very high-water scarcity areas in the region. Villages such as Pathara Mani and Lohara face acute challenges including malfunctioning infrastructure, drying ponds, and inadequate community participation in water management. The study recommends diversification of water sources, rejuvenation of traditional wells and ponds, construction of recharge structures, and strengthening of community-based governance through watershed committees and local water budgeting. Overall, the study demonstrates that water scarcity in Bundelkhand is shaped not only by physical limitations but also by social and institutional factors, highlighting the need for decentralized and participatory water management.

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1. Introduction 2. Geographical Profile of the Bundelkhand Region of Uttar Pradesh 3. Spatial Analysis of Water Poverty Across the Region 4. Exploring Water-Related Issues and Challenges in Sample Villages 5. Estimation of Water Scarcity in Sample Villages 6 Government Initiatives and Community Driven Water Resource Management 7. Summary and Conclusion. Bibliography and Appendix.