



INDIAN ASSOCIATION OF SOCIAL SCIENCE INSTITUTIONS

24th INTERNATIONAL IASSI ANNUAL CONFERENCE
10-12 October 2025 | Doon University, Dehradun, India

**SUMMARIES OF THE
CONFERENCE PAPERS**



Doon University, Dehradun



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Summaries of the Conference Paper

Organised by



Doon University, Dehradun

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THEME 1



Addressing Climate Change and Environmental Challenges

Climate change and environmental degradation present some of the most pressing challenges of our time. Rising global temperatures, extreme weather events, biodiversity loss, and environmental pollution threaten ecosystems, livelihoods, and economic stability across the world. The increasing frequency and intensity of climate-induced disasters underscore the urgency for transformative policies and sustainable development strategies to mitigate risks and build resilience.

Environmental challenges are closely intertwined with economic and social dimensions. The disproportionate impact of climate change on marginalized communities highlights the urgent need for inclusive policies that ensure equitable adaptation and mitigation measures. Developing economies, including India, face the dual challenge of sustaining economic growth while ensuring environmental sustainability. The transition to a low-carbon economy requires a fundamental restructuring of industries, energy systems, and urban infrastructure, presenting both opportunities and challenges.

India has been at the forefront of global climate action, implementing ambitious initiatives such as the National Action Plan on Climate Change (NAPCC), the International Solar Alliance, and the LiFE (Lifestyle for Environment) movement introduced during its G20 presidency in 2022. However, despite these efforts, several challenges remain, including the need for enhanced climate finance, technological innovation, and strong governance mechanisms to ensure the effective implementation of climate policies.

Addressing climate change and environmental challenges necessitates a multi-pronged approach that integrates scientific advancements, policy interventions, and community-led initiatives. Sustainable resource management, circular economy models, nature-based solutions, and climate justice frameworks must be central to climate action. The role of indigenous knowledge and traditional practices in conservation and climate adaptation also requires greater recognition in policymaking and implementation strategies.

The transition towards renewable energy sources such as solar, wind, and bioenergy presents both opportunities and hurdles. While renewable energy adoption has seen significant progress in recent years, infrastructural gaps, high initial investment costs, and policy inconsistencies continue to hinder large-scale implementation. Strengthening public-private partnerships and fostering research and development in green technologies will be critical to overcoming these barriers and accelerating the shift towards a sustainable energy future.

Furthermore, urbanization and industrialization have placed immense pressure on natural resources, exacerbating pollution and environmental degradation. Effective urban planning that incorporates green spaces, efficient public transportation, and climate-resilient infrastructure is essential to mitigating environmental impacts while enhancing the quality of life. Encouraging circular economy models that promote recycling, waste reduction, and sustainable production practices can significantly contribute to reducing environmental footprints.

Climate change also presents a significant threat to food security, with rising temperatures and erratic weather patterns disrupting agricultural productivity. Sustainable agricultural practices, including agroecology, climate-smart farming, and water-efficient irrigation techniques, are crucial to ensuring food security while reducing greenhouse gas emissions from the agricultural sector. Additionally, investing in community-led initiatives that empower farmers and promote biodiversity conservation can enhance resilience against climate-related disruptions.

International cooperation and policy alignment are equally vital in addressing global climate challenges. Strengthening multilateral frameworks such as the Paris Agreement and ensuring compliance with international climate commitments will be essential in achieving long-term sustainability goals. Additionally, mobilizing climate finance and technology transfer mechanisms can support developing nations in implementing effective climate mitigation and adaptation strategies.

Key issues for consideration under this theme include:

- Impact of climate change on poverty, employment, and economic growth
- Strategies for enhancing energy security while transitioning to sustainable energy sources
- Innovations in water resource management to address scarcity and support conservation
- Biodiversity conservation and the role of ecosystems in mitigating climate risks
- Climate change, disaster risk reduction, and community-led adaptation initiatives
- Circular economy practices to improve resource efficiency and waste management
- Integration of indigenous knowledge and traditional practices in climate adaptation
- Role of gender equity in climate change mitigation and adaptation strategies
- Policies for promoting sustainable consumption and reducing environmental footprints
- Implementation challenges and governance issues in climate action frameworks

A holistic approach to addressing climate change and environmental challenges is essential to achieving long-term sustainability and resilience. This theme aims to bring together scholars, policymakers, and practitioners to engage in critical discussions, share research insights, and explore innovative solutions to combat climate change while ensuring economic and social sustainability.

KEY NOTE ADDRESS

Addressing Climate Change and Environmental Challenges

Rajani Ranjan Rashmi

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Climate change is amongst the most serious environmental crises faced by mankind today. Scientific evidence establishes unequivocally the anthropogenic nature of this change and points to the current spell of climate change being a result of unsustainable pattern of economic development. While adverse impacts of climate change continue to aggravate, remedial actions initiated by countries for mitigation of fossil fuel-based greenhouse gas emissions have made little impact on the trajectory of global emissions. With unabated production and consumption of non-renewable energy resources leading to further higher atmospheric concentration of globally warming gases, the world is not on track to meet the internationally agreed goal of stabilising climate at 1.5- or 2-degree mean surface temperature of the earth below pre-industrial level.

This paper analyses the reasons for the failure of global efforts to arrest the growth in emissions and finds that this is largely attributable to (i) inadequacy of mitigation targets set by countries in comparison with the scientifically estimated goal, (ii) inequity in the agreed international regime towards sharing of global efforts based on responsibility and capability, and (iii) absence of a credible and internationally implementable plan for financing national transitions towards meeting the global temperature goal, and adaptation efforts of vulnerable countries. The paper argues that India's strategy towards contribution to global efforts must remain anchored in the principles of climate justice, equitable sharing of efforts, and national circumstances.

The paper further analyses the challenges to India's domestic climate policy expressed in terms of nationally determined contributions. India has a goal of becoming a net zero emissions economy by 2070. At the same time, it has the goal of becoming a developed country by 2047 under its *Viksit Bharat* vision. The paper explores how India can resolve the conflict between these divergent, yet concurrent goals while contributing to the global goal of climate stabilisation in a just and equitable manner.

The paper concludes that India has made substantive progress towards meeting its NDC goals but needs to urgently address the issues relating to renewable energy uptake in the grid-based energy system, decarbonisation of industrial sectors through development of alternative fuels, and mobilisation of additional resources at scale to meet the needs of transition. In addition, India should prioritise investments in energy transition in a manner that does not compromise on its ability to meet the growing demand for energy. Other factors that will determine the success of India's climate change policy are how it addresses the issues of adaptation, just transition, and secures the support of state governments for creation of a climate resilient infrastructure.

Resisting the Tide: A Comparative Study of Protests in Coastal Kerala Community

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Kerala's 590-kilometre coastline supports an estimated one million people whose livelihoods depend on artisanal fishing traditions, locally embedded ecological knowledge, and longstanding cultural rituals. In recent decades, these coastal communities have faced mounting and overlapping pressures from climate change, habitat degradation, mechanised fleets, and state-driven development projects that have disrupted access to fishing grounds. As environmental and socio-economic vulnerabilities converge, fishing villages have increasingly turned to organised protest as both a defence of livelihoods and a means of negotiating with governance structures.

This paper examines two emblematic protest movements in Kerala's fisheries sector to illuminate how communities mobilise in response to distinct forms of threat and how these protests interact with state and institutional governance. The first case, in Chellanam, arises from severe climate-induced coastal erosion, compounded by infrastructural neglect and inadequate disaster protection measures. The second, in Vizhinjam, responds to the construction of the Adani-led International Deepwater Seaport, which has accelerated coastal degradation, restricted fishing access, and created fears of large-scale livelihood displacement.

Grounded in a conceptual framework that integrates political ecology, social movement theory, and resilience studies, the analysis conceives protests as dynamic spaces that may evolve from confrontational resistance to negotiated participation, governance as a blend of conflict-management practices and structural transformation of community life, and resilience as a contested process that involves trade-offs in autonomy, identity, and vulnerability.

The study employs a comparative case study design, following a "most different systems" logic to contrast the diffuse climate-driven threat in Chellanam with the concentrated development-driven disruption in Vizhinjam. Fieldwork conducted between 2020 and 2023 combined ethnographic methods, in-depth and semi-structured interviews, participant observation, focus groups, and digital ethnography during COVID-19 restrictions. Fifty-eight participants, including protest leaders, clergy, fisher union representatives, and local officials, provided insights into protest strategies, framings of demands, alliance-building, and perceptions of state legitimacy.

Findings reveal that Chellanam's mobilisation—led by grassroots collectives such as Care Chellanam and the Chellanam-Kochi Janakeeya Vedi—centred on an immediate, technically framed demand for sea-wall construction, employing symbolic repertoires such as *jalasamadhi* ("water burial") and even contesting local elections through the Chellanam 20/20 political platform. This elicited a partial state response in the form of protective infrastructure, though deeper socio-

ecological vulnerabilities remained unaddressed. In Vizhinjam, mobilisation was spearheaded by the Latin Catholic Church, whose role evolved from militant protest leadership to mediating between the community and state–corporate actors. Here, the state acted not as a neutral mediator but as an active promoter of the project, managing dissent through both negotiation and coercion. Protest framings shifted from total opposition to demands for compensation and rehabilitation, reflecting both political pragmatism and strategic adaptation.

Utilisation of Ayush Systems of Medicine and Climate Vulnerability: An Exploration of the Role of Indigenous Knowledge and Traditional Practices in Climate Adaptation in Some Selected States of India

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Given the climate vulnerability, the present research investigates how utilisation patterns of the different systems of medicine under the Ayush, such as Ayurveda, Yoga and Naturopathy, Unani, Siddha, Sowa Rigpa and Homoeopathy, vary concerning various predictors. Additionally, as Ayush systems of medicine maintain a holistic approach recognising the interconnectedness of body, soul and the environment in matters of an individual's health, the study intends to explore the role of indigenous knowledge and traditional practices in climate adaptation considering Ayush as an embodiment of indigenous knowledge, and utilisation of it for curative and/or preventive purposes as a sign of consequent traditional practices towards climate adaptation. Technically, it considers utilisation of Ayush as a random event and tried to explain variation in its occurrences estimating binary multivariate logit model with the use of data from the first-ever all-India 79th Round of National Sample Surveys on Ayush after merging a column on district-level climate vulnerability index with it from the report on “Climate Vulnerability Assessment for Adaptation Planning in India Using a Common Framework”.

Three types of predictor variables are considered: the demand side, the supply side, and the district-level climate vulnerability index on the environmental side. Seven States were selected purposively, according to the scores in the vulnerability index in descending order: Jharkhand (0.674), West Bengal (0.592), Uttar Pradesh (0.582), Manipur (0.520), Uttarakhand (0.468), Kerala (0.437) and Maharashtra (0.419).

Results are interesting and notable. With the increase in education, the likelihood of utilisation of Ayush increases in most of the States, except in Uttarakhand and Kerala. Regarding gender, Indian women, in general, are more persuaded by a holistic approach to treat their health issues, as well as more inclined to climate adaptation, compared to Indian men.

Among other demand-side factors, the affordability of households concerning different types of consumption expenditure appears to be very important. When the usual monthly consumer expenditure increases regarding necessities, the probabilities of utilising Ayush systems increase

exorbitantly in Manipur and Uttarakhand, moderately in Uttar Pradesh. Also, with affluence, users in West Bengal and Uttar Pradesh are likely to utilise Ayush systems more. On the supply side, when a person is aware of Ayush, the likelihood of its utilisation increases many times in all the selected States.

Finally, the relationship between climate vulnerability and utilisation of Ayush systems of medicine is found to be very strong and positive in Jharkhand, Uttar Pradesh, Manipur, Kerala and Maharashtra. As observed in these States, the pattern of utilisation of Ayush systems of medicine conforms to climate vulnerability to a great extent. The relationship is negative in West Bengal and Uttarakhand. It means that the essence of wholeness in Ayush systems of medicine towards climate adaptation needs to be popularised where needed. Also, the study did not find any macro-level relationship between the utilisation of Ayush systems of medicine and climate vulnerability. All such evidences warrant a decentralised micro-level approach towards climate adaptation.

Integrating Ecosystem Service Valuation into Climate Risk Models: Advancing Resilience and Sustainable Wellbeing through Adaptive Assessment Frameworks

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Risk assessment frameworks to enhance resilience and disaster preparedness. It emphasizes the critical but often overlooked role of ecosystems in mitigating climate vulnerabilities, which traditional economic and risk assessments frequently undervalue or omit. Design/methodology/approach: This study adopts a transdisciplinary approach to integrate ecosystem valuation into climate risk models by bridging ecological economics, climate science, and disaster risk reduction. It examines the fit between valuation methods and tools like hazard models and vulnerability indices. Case studies show that excluding ecosystem values skews GDP-based assessments and highlights the need for more holistic frameworks.

Findings: Conventional climate risk assessments often overlook ecosystems' protective roles, focusing narrowly on infrastructure and GDP. This leads to incomplete models and greater long-term vulnerability. Integrating ecosystem valuation offers a fuller understanding of risk and positions nature as vital climate insurance. Originality/value: This paper conceptually links ecosystem valuation with climate risk modelling, proposing practical pathways for integration. It reframes ecosystems as active agents in resilience, addressing gaps in disaster preparedness. The framework supports policymakers in embedding nature's value into climate finance and risk planning.

Conclusion: Embedding ecosystem valuation in climate risk assessments is crucial for resilient and sustainable development. Frameworks like TEV and GEP offer conceptual tools to recognize and incorporate nature's protective functions into planning, supporting more informed adaptation and risk reduction strategies. Aligning economic thinking with ecological realities is essential for fostering long-term resilience and equity.

The Impact of Disasters on Manufacturing Performance: Evidence from Developing Countries

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Industrialization is the cornerstone for development, and manufacturing is vital particularly for developing countries. The manufacturing sector absorbs labour, generates low-skilled employment, enables productivity gains and fosters strong inter-sectoral linkages. Simultaneously, climate change induced disasters- characterised by increasing frequency and severity- heighten the sector's vulnerability. Previous research indicated that developing countries bear higher costs and economic disruptions from disasters. Given this context and limited empirical work on the impact of disasters on manufacturing, this paper investigates the relationship between manufacturing growth and disasters- specifically floods, droughts, earthquakes and storms — conducting a cross-country analysis. We construct a panel of 50 developing countries from 2000 to 2019. The study controls for employment, capital, GDP growth, trade, FDI and other variables that influence manufacturing growth. We also explore the role of income levels in influencing manufacturing growth. The findings of the study conclude existence of a positive association between manufacturing growth and disasters reflecting post-disaster reconstruction demand, aligning with the Schumpeterian literature. Conducting the disaggregated analysis, we found floods and droughts to positively and significantly impact the sector. Floods seem to induce increased manufacturing activity during recovery phases—possibly through the demand for materials, rebuilding infrastructure, and industrial inputs. Droughts may also trigger a structural shift from agriculture to industry, especially in agrarian economies with literature discussing drought to negatively impact agricultural activities due to prolonged water scarcity. Other variables including employment and capital have strong positive effect on manufacturing growth, underscoring their role in industrial expansion. GDP growth is a major driver indicating macroeconomic stability fostering manufacturing output. Trade is a significant contributor suggesting open economies improve the accessibility of intermediate goods thereby promoting manufacturing growth. In addition to these variables, we examine the role of country income levels using a dummy and find consistently significant negative effect for middle-income countries suggesting these countries have stronger infrastructure and better institutions, enabling them to contribute more to other sectors like the services. This heterogeneity supports differentiated policy strategies based on income levels and adaptive capacity. We conclude

from our analysis that developing countries need to strengthen disaster resilience particularly due to earthquakes. The positive impact of employment and capital highlights its important role in influencing manufacturing. Therefore, these countries should invest in human and physical capital to improve performance of manufacturing by educating and training workers to contribute to growth. Additionally, integrating global trade can help developing countries further improve their manufacturing growth. By enhancing trade relations and reducing barriers, countries can promote long-term industrial growth and support recovery efforts following disasters. Policies need to integrate climate and disaster risk assessments to strengthen manufacturing resilience for realising long term goals.

Incentivising Biodiversity Conservation and Beyond: A Critical Reflection on the Neoliberal Environmentalism in South Asia

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The fragility of the environment in the face of the mindless plunder of natural resources evokes mixed yet contradictory responses from epistemic communities, scientists, policymakers, and the discursive platforms. There is no denying that a clear cognitive dissonance exists among these groups. One group prioritises economic growth over the environment, while the other remains uncompromising in its commitment to environmental protection and conservation, ranging from strict adherence to legal environmental regimens to extreme measures of conservation violence. Amidst these two irreducible strands of environmentalism lies the neoliberal variant of environmentalism, which offers market solutions to environmental problems by incentivising resource conservation through privatisation, deregulation, territorialization and commodification of natural resources. Here, commodification drives include revival of wilderness in the form of preservation of wildlife, reinventing the value of wild products drawn basically from non-domesticated plants and animals, to the other extreme of letting nature reclaim her lost control over the planet in the form of re-wilding. Despite its popularity, the said approach can be subject to serious criticism for ignoring the symbiotic relationship between nature and human beings and relegating nature to a mere economic value to be appropriated by the developed North at the cost of externalising its unsavoury component of development on the marginalised communities and the nature of the resource-poor countries. The present paper, with special references to South Asia, has interrogated neoliberal environmentalism and explicated how, in the attempt to commodify natural resources, it often forces the resource-poor countries of South Asia to indulge in the extractive mode of development by commodifying marine and other precious natural resources to ensure their livelihood security in a global economy. Further, the paper argues that neoliberal conservation measures also entail some serious existential issues like loss of state authority over its own geospatial space on the face of territorialization of nation states, in the construction of neoliberal transboundary biological corridors like the Meso-American Biological

Corridor, to loss of agricultural lands due to re-wilding measure, and the resultant marginalization of the indigenous communities. Hence, a robust model of environmental governance combining several laws and regulations, environmental regimes, and a wide range of stakeholders, including government, NGOs, civil society, and community, is urgently called for if we intend to account for the ‘environmental cost’ entailed by the so-called neoliberal environmentalism. The ‘environmental cost’ of development comprises a whole gamut of issues relating to environmental degradation and the resultant human vulnerabilities that innumerable environmental refugees are forced to withstand. It facilitates policymakers to make informed decisions to minimise longstanding environmental harm.

The objective of the proposed paper, with special reference to two erstwhile Asian Tigers, Thailand and Indonesia, explores the vacuity of neoliberal environmentalism and its corrosive impact on society, environment and culture. The paper will resort to the descriptive-analytical method of research. For further information, the paper will rely on specific case studies.

The present paper will contribute to environmental policy by highlighting the shortcomings of the neoliberal model of environmentalism.

Quantification of Campus Sustainability: A Case Study

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Achieving campus sustainability in all forms is the hot talk of the town amongst the academic community in recent times. The present research piece is a case study that has mainly aimed at assessing the campus of the higher educational institution (HEI) named Panchmura Mahavidyalaya in terms of the sustainability assessment parameters as obtained from the pioneering work of L. Cole (2003). The concerned HEI is the first rural degree Government aided undergraduate college in the district of Bankura of West Bengal. Being an abode to a variety of the flora and fauna species in its verdant and ecological campus, the institution pledges to train the young minds towards sustaining the natural resource ecosystem, promoting eco-friendly practices, adopting mitigation strategies to combat global warming and climate change. The key aspects that are being imbibed in the vision and mission of the institution – Discipline, Empowerment, Knowledge, Sincerity, Wisdom and Sustainability are being implemented all-round the academic year in its activities. The quantification/evaluation report as obtained from our analysis helps to conclude that the concerned HEI has performed brilliantly across the different aspects (as suggested by Cole) in terms of achieving green and sustainable campus in its true form.

The attention and efforts put forwarded by the management of the institution (since 2019 onwards) towards physical and mental well-being of the stakeholders needs strong appreciation. The dedicated effort of the staff and student towards preservation of bio-diversity inside and outside the campus premises have been noted. The effective functioning of the Community Development Wings of the institution is worth mentioning. The initiatives of Pisciculture, Pakhi-Ghar Project

(Voiceless Abode project), Car Pooling, No entry of automobiles inside the premise, Emerging as a Peace, Just and Strong institution, Green, Energy and Environment Audit, Designing and Imparting Certificate Courses on Ecology and Sustainability Issues, E-Governance, Participatory Learning, Zero Water Import Policy, Sustainable Procurement, Organic Farming, Vermicompost, Green House construction, Rain Water Harvesting, Setting Indoor NASA Plant Corner inside the premise, Harvesting Energy inside campus, Energy efficiency, Expanding the size and capacity of the college playground and many such other measures have enabled the institution to transform itself into an ecologically versatile one. The best practices of the HEI *Swapner Udaan, Alor Sopan & Samantaral* needs a special mention in this context.

Evolution of India's Policy Approach to Environmental Sustainability: A Qualitative Content Analysis

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As the world currently moves towards achieving the 2030 Agenda of Sustainable Development, the need for understanding the policy approach towards one of its core domains – environmental sustainability is greater than ever. Carbon emissions driven climate change is at the core of global discourse, and environment is a high priority for real development. India, with its unique landscape and developing economy is extremely vulnerable to the long-term impacts of environmental degradation and has, in the last decade, emerged as a proactive United Nations member pursuing the 2030 Agenda. The Indian policy framework has attempted to address various environmental concerns since independence but the approach has varied throughout the years. This paper uses conventional content analysis to trace that policy approach of India toward environmental sustainability since independence. An in-depth analysis of the Five-Year Plans and other major environment related policy documents has been conducted to identify recurring themes. Twenty-three codes related to the environment have been identified and organized thematically with respect to an adapted Environmental and Social Sustainability Framework, of United Nations Environment Programme. Six key sub-themes emerge; which show that there has been a gradual but transformative evolution of India's policy approach over time. It has widened into a multifaceted, cohesive framework systemically integrated into developmental planning, with significant international influence. It is observed that India is trying to move away from a regulation focused, economy-oriented policy approach to an innovative green economy by 2050. Whether this evolved policy approach sustainable in the long term can be built upon in future research.

Dynamics of Climate Change with Environmental Challenges, Migration and Human Security in South Asia: A Case Study of India, Bangladesh and Nepal

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Although climate change considered as an environmental problem, in present aspect it is a big issue of internal and international peace and security. South Asia is one of the regions in the world which has already challenged the adverse effects of climate. Human migration, security, shelter all these issues are coming out with climate change which are the most sensitive issue when it comes into inter-state relations in South Asia. In 2004, “the Inter-Governmental Panel of Climate Change (IPCC) has indicated that one of the greatest effects of climate change may be the Human security”. State of Environment and Migration Report, 2011 reflects a co-relation between floods and migration of Bangladeshis to India. This is stated to be one of the reasons why people from Bangladesh cross the Indian border for security and livelihood. Such migration has both the state and human security dimensions. On the other hand, Nepal is regularly hit by several natural calamities like flood, drought, fire, land slights etc (IMO, 2013) which force the local residents to migrate abroad from Nepal. According to Census, 2011 it has estimated that 722,255 Nepali individuals living in India for various purposes. In this background, the present paper has made a critical assessment of the impact of climate change on migration and human security in South Asia with special reference to India, Bangladesh and Nepal. We have also tried to provide an outline of the comprehensive security approach to the crises.

Climate-induced migration not only strains bilateral relations but also puts immense pressure on domestic resources, governance, and social cohesion in the host countries. The movement of people across porous borders in South Asia often triggers debates around citizenship, employment opportunities, and resource distribution, thereby intensifying existing political and ethnic tensions. Moreover, the lack of a coordinated regional framework to address climate migration leaves the affected populations vulnerable, as policies remain fragmented and reactive rather than preventive. Hence, climate change is no longer only an ecological or developmental issue but a multidimensional challenge that intersects with security, governance, and human rights in South Asia.

Agricultural Productivity, Climate Change and Crimes: A District Level Analysis in India

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It is evident that climatic factors affect agricultural productivity. According to the latest PFLS survey (2022-23), around 45 percent of the labour force is engaged in agriculture and allied activities in India. Rainfall shocks and rise in temperatures can adversely affect agricultural productivity, which might lead to fall in the income of households engaged in agriculture, leading to economic deprivation in agrarian societies, and as a consequence, an increase in conflicts, reflected through property crimes. Again, rainfall shocks and a rise in temperature can directly affect the incidence of property crimes by affecting the livelihood of the people living in that district. The present study attempts to analyze how climate change and fluctuations in agriculture yields of two major crops, ie., wheat and rice, affect the incidence of property crimes in the rural districts of India from 2001-11. Secondly, it looks at whether financial inclusion, measured by the percentage of rural credit sanctioned and the credit deposit ratio sanctioned can attenuate the effects of climate change on property crimes. The study finds that financial inclusion reduces property crimes in a district and also minimizes the effects of negative rainfall shocks however, it fails to mitigate the effects of positive rainfall shocks. Higher yields of rice and wheat reduce property crimes in a district. The endogeneity test suggests that rice and wheat yields are exogenous variable in the model. To check for the robustness of our results, first, we exclude the outlier states- Maharashtra, Madhya Pradesh and Haryana; second, we include the socioeconomic variables the regressions. We find our results are robust under these specifications.

The findings highlight an important policy implication: strengthening financial inclusion in rural areas can serve as an effective adaptation strategy against climate-induced economic shocks. By providing timely access to credit and improving the credit–deposit ratio, vulnerable households are better equipped to manage income fluctuations, smooth consumption, and avoid resorting to unlawful activities during periods of agricultural stress. At the same time, investment in climate-resilient agricultural practices, irrigation facilities, and crop diversification becomes essential to reduce the dependency on monsoon-driven yields. Thus, a comprehensive strategy that combines financial inclusion with agricultural resilience can not only safeguard rural livelihoods but also contribute to reducing the social costs of climate change, including rising property crimes.

SDG 15 Implementation in India and China: Comparative Study of Achievements and Challenges

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This paper presents a comparative analysis of how India and China are operationalizing Sustainable Development Goal 15: Life on Land within their national policy architectures, institutional frameworks, and on-ground conservation practices. Focusing on Targets 15.1 to 15.5, the study synthesizes findings from national Five-Year Plans/Guidelines, biodiversity strategies and action plans, legal instruments, and voluntary national reviews submitted to the United Nations.

The analysis explores the ideological and institutional underpinnings shaping each country's environmental governance ranging from China's eco-civilization doctrine and centralized planning ethos to India's rights-based frameworks and decentralized biodiversity governance. The paper critically examines key indicators and target alignments, highlighting how each nation translates global commitments into national metrics, with differing emphasis on land degradation neutrality, forest cover, biodiversity loss, and protected area management. Policy instruments such as China's National Park System, Gross Ecosystem Product (GEP) accounting, and large-scale afforestation programs are juxtaposed with India's People's Biodiversity Registers (PBRs), Compensatory Afforestation Fund Management and Planning Authority (CAMPA), and community-based forest restoration schemes such as Joint Forest Management and Mission LiFE.

Preliminary findings reveal contrasting yet complementary pathways: China's top-down, technocratic approach enables rapid implementation and scale, while India's pluralistic, multi-stakeholder model fosters grassroots innovation and ecological stewardship. The paper further identifies data trends, implementation gaps, and contextual challenges such as land-use conflicts, biodiversity financing, and institutional fragmentation. By mapping convergences and divergences in strategy and execution, the paper offers critical insights for rethinking biodiversity governance, land restoration strategies, and the role of indigenous knowledge and local institutions in achieving SDG 15. The study contributes to broader discourses on environmental federalism, sustainable livelihoods, and policy learning between large, rapidly developing nations with shared ecological pressures but divergent development models.

Integrating Planet, People, and Profit: A Conceptual Framework for Sustainable Leadership and Organizational Resilience

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This paper presents a conceptual framework that investigates the interconnections between sustainability-driven leadership and the development of resilient organizations. Grounded in the triple bottom line approach—People, Planet, and Profit—the study explores how sustainable leadership can align values, behaviours, and culture to foster long-term viability and societal well-being.

This conceptual study integrates existing literature on sustainable leadership, leadership behaviour, organizational culture, and resilience. It proposes a model that positions sustainable leadership as the central enabler of inclusive and adaptive behaviours, which in turn shape a sustainable organizational culture, reinforcing resilience.

The proposed framework illustrates that sustainable leadership, guided by ethical values and stakeholder-centric thinking, drives leadership behaviours that support transparency, adaptability, and collaboration. These behaviours foster a sustainable culture prioritizing social equity, environmental stewardship, and economic integrity. Such a culture, in turn, enhances organizational resilience by strengthening its ability to adapt and thrive amid disruptions.

This research contributes to leadership and sustainability literature by bridging sustainable leadership and resilience in a unified framework. It offers novel insights into how organizations can institutionalize sustainability at strategic and operational levels through leadership behaviours, thereby enhancing innovation, employee engagement, and long-term value creation.

The framework provides a strategic guide for leaders and professionals who seek to embed sustainability into the fundamental practices of their organizations, while also boosting resilience against changing global uncertainties. It establishes a foundation for future empirical research and aids in the practical application for organizations striving for sustainability-driven change.

Can Economic Empowerment of Women Help Address Climatic Challenges? Gender Audit of PM Mudra Yojana

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Climate change is emerging as one of the most critical challenges for India because of large scale climatic variability. The impacts of climate change disproportionately affect women and make them more vulnerable than men due to lack of financial resources, lower participation in work force, limited ability to run or scale businesses and consequent economic disempowerment. According to the NSO (2024), Indian women spend almost six times more time on unpaid domestic work than men. This reduces the time that women can spend on income generating activities. Therefore, in order to reduce women's climate related vulnerability and risk, it is important to build their adaptive capacity to face climatic challenges. For doing so, women need to be economically empowered not only to prevent families from falling below the poverty line but also enhance their decision-making ability to spend on food and nutrition security of the household, improved health and education opportunities as well as facilities for well-being.

The present study has been conducted with the objective of assessing the impact of one of the major economic empowerment schemes of the Government namely *Pradhan Mantri Mudra Yojana* (PMMY) on the climate related adaptation of women. The program focuses on promoting entrepreneurship and financial inclusion especially for women. The study has been done by reviewing secondary literature published in the last decade (2015-2025) on the impacts of the program on women. The impacts and outcomes of the schemes were aggregated and subject to gender audit using a combination of suitable Gender Analysis Frameworks such as the Harvard Analytical framework, Caroline Moser's framework, Gender Analysis Matrix and Social Relations Approach.

The analysis has shown positive impact of the program on the Strategic Gender Needs (SGNs) of the women with respect to enhanced income-generation, decision-making abilities and autonomy. Women's role in productive activities enhanced as they used the loans to start their entrepreneurial activities. Some women used the loans for purchase of assets and repayment of old debts. *Shishu* (smaller loan) and *Kishore* (medium loan) categories of Mudra loans were the most preferred loans by women for starting or expansion of business. Therefore, the program had the potential to reduce the risks posed by climatic extremes and hazards through enhanced adaptive capacity of women and their families. However, women continued to face several challenges and barriers at planning and implementation stages such as lower awareness, lack of financial literacy, lack of access to technology, complex procedures of lending institutions and patriarchal norms all of which need to be addressed. With a stronger gender-responsive approach, the program can be

much more gender redistributive and transformative in terms of power and resources. This will lead to promotion of gender equity as well as help in building climate related adaptation of women and enable them to lead more resilient lives.

Climate Change and Human Development: A Multi-Dimensional Analysis of Poverty, Employment, and Growth in India

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One of the biggest threats to India's socioeconomic progress is climate change, which aggravates preexisting vulnerabilities by acting as a "threat multiplier." This paper examines its interconnected effects on poverty, employment, and economic growth. In the Indian region, where agriculture and informal employment are dominant, the cascading socio-economic effects of extreme weather events, unpredictable monsoons, floods, droughts, and heatwaves are not as well studied. The paper integrates an empirical examination of long-term state-level information from PLFS, NSSO, Census, RBI, and climatic records with a review of current literature. This method makes it possible to investigate in detail how climatic shocks result in setbacks in human development. Results indicate that agricultural interruptions raise food insecurity, lower rural earnings, and further impoverish vulnerable households. The implications on employment are just as bad: rural suffering and urban poverty are made worse by climate-induced drops in agricultural output and recurrent shocks, which lead to rural-urban migration, put a pressure on urban infrastructure, and increase the number of insecure informal occupations. There are direct and indirect costs associated with climate change at the macroeconomic level. Increasing spending on infrastructure reconstruction, rehabilitation, and disaster assistance are examples of direct expenses. Reduced worker productivity brought on by heat stress, health hazards, and waning investor confidence in susceptible areas are examples of indirect costs. These elements work together to limit GDP growth and jeopardize the SDGs' (sustainable development goals) advancement. The research emphasizes the necessity of adopting integrated, climate-resilient development methods in place of fragmented solutions. Important suggestions involve expanding social security programs like MGNREGA and climate insurance, growing drought-resistant crops to promote climate-resilient agriculture and effective water management, investing in sustainable infrastructure, and diversifying rural livelihoods through agro-processing and green jobs. The study demonstrates the diverse effects of climate change. It also provides practical policy recommendations by placing climate change at the heart of growth, employment, and poverty. It makes it evident that combating climate change is not just necessary for the environment but also for India's inclusive and sustainable growth.

Integrating Gender Analysis Frameworks in Mapping the Gender-Based Risk to Climatic Change at the Sub-National Scale

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Climate change is unequivocal, threat to human wellbeing and planetary health. Poor women in developing countries are the most vulnerable and at risk to climatic stresses and shocks as their lives and livelihoods are highly dependent on environmental resources which are climate sensitive. The concerns for gender equity and balance in climate negotiations & policy making have been raised in several Conference of Parties of the UNFCCC. The LIMA work program on gender and consequently the Gender Action Plan have highlighted one of the priority areas, as the need for metrics to create evidence of differential vulnerability and risk to climate change. In the present study, the authors have conceptualized a unique index 'Climate based Gender Risk Index (CGRI), as part of India's Fourth National Communication to the UNFCCC quantifying the gender-based risks faced by both men and women at the sub-national scale in India at different spatial and temporal scales. In order to make the index gender sensitive and understand the intricacies of how gender dimension influences vulnerability to climate change a gender analysis approach was undertaken. A number of gender analysis frameworks were analyzed, finally four GAFs were selected for the present study namely Caroline Moser, Gender Analysis Matrix, Social Relations Approach and Harvard Framework. Framework. To capture the gender specific vulnerabilities the components of all these frameworks were integrated with IPCC AR5 risk assessment framework. The index has been developed based on rigorous review of literature, validated, and tested for reliability. It comprises of 4 components encompassing 28 indicators to capture the climate and gender-based vulnerability and risks. The index ranges from 0-1, the values closer to 0 indicate least susceptibility to climatic risk and the values closer to one represents highest susceptibility to climatic risk. The framework of the index can be used as a template by other developing countries/regions by contextualizing the indicators to suit the local needs. The study has shown that despite facing same climate hazards and exposure, women were 48 percent more prone to climate related risks as compared to men. This was because of their greater sensitivity and limited adaptive capacity owing to their poorer health, low literacy levels and limited participation in decision making. To achieve the national and global goals of gender equality, it is important that gender related concerns are incorporated in climate related decisions, policies to enable undertaking gender transformative actions.

Climate Justice to the Climate Migrants in India: A Case of Marginalization

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Climate change has become a common term in the 21st Century. Climate change is expected to significantly affect human migration in three different ways. First, warming of the atmosphere in some regions will reduce the agricultural potential in terms of the production and productivity and undermine the ecosystem services such as fertile soil and water affecting people's livelihoods. Second, increasing extreme weather events will generate mass displacement. Third, sea level rise will destroy the low-lying coastal areas and millions of people who will have to relocate permanently. According to the World Meteorological Organization (WMO), in 2024 around 600 extreme weather events were reported and they displaced nearly 8, 24, 000 and killed 1700 people. This is the global picture on account of the anthropogenic impacts resulting in the global warming. The recurrence and the gravity or the severity of these events is felt more in the lower and middle-income countries of the globe. Larger populations in these countries are vulnerable for such events due to low adaptation capacities and marginalization of these masses.

India ranks among the most climate-vulnerable countries in the world due to its vast population, heavy dependence on agriculture, rapid urbanization, and large coastal areas. According to the Global Climate Risk Index (2021), India is consistently placed among the top ten nations most affected by extreme weather events such as cyclones, floods, and heatwaves. Its high population density and widespread poverty further exacerbate the impacts, as millions lack the resources and infrastructure needed to adapt to climate shocks. Compared globally, while developed countries face climate risks as well, India's exposure is compounded by socio-economic vulnerabilities, making it one of the countries where climate change poses the gravest threat to sustainable development and human security.

Green Trade and the EKC: A Comprehensive Footprint-Based Analysis of G20 Nations

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Trade plays a dual role in shaping environmental outcomes, while it can drive resource efficiency and technological diffusion, it also contributes to environmental degradation through scale effects and carbon-intensive production. This study investigates the relationship between green

trade and environmental quality within the framework of the trade-led Environmental Kuznets Curve (EKC) hypothesis, using three comprehensive environmental footprint indicators: carbon footprint, material footprint, and ecological footprint across G20 nations for the period 1990-2023. Departing from traditional GDP-centric EKC models, this research emphasizes trade dynamics as primary drivers of environmental quality. The study employs robust panel econometric techniques, including Fixed Effect Driscoll-Kraay Standard Errors (FE-DKSE) and Method of Moments Quantile Regression (MMQR), complemented by rigorous diagnostic tests to address cross-sectional dependence, heterogeneity, stationarity, and cointegration. The empirical findings reveal mixed but significant evidence of an EKC relationship when trade dynamics drive environmental degradation. Specifically, inverted U-shaped EKC's characterize carbon and material footprints, while an inverted N-shaped pattern emerges for ecological footprints, reflecting complex trade-environment interactions. The analysis also shows short-term increases in environmental footprints linked to scale and rebound effects associated with green trade expansion. However, in the long run, green trade positively contributes to reducing environmental degradation through the diffusion of cleaner technologies and enhanced resource efficiency. Additionally, Granger causality tests indicate bidirectional links between green trade and most environmental footprints, suggesting mutual reinforcement. Policy implications emphasize enhancing trade in certified environmental goods and services, promoting innovation and technology transfer, integrating footprint metrics into trade and environmental policies, and fostering international cooperation to mitigate cross-border environmental impacts. The study acknowledges limitations, including reliance on aggregate data and potential omitted variables like environmental regulation and institutional quality, and suggests future research into sector-specific effects, digital trade, and green finance, especially in different strata of economies. This study offers novel insights by bridging green trade and multi-dimensional environmental metrics within a unified EKC framework, contributing significantly to the discourse on sustainable globalization.

Evaluating the Pradhan Mantri Ujjwala Yojana and the Transition to Clean Cooking Fuels: A Systematic Literature Review

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Energy transition of households from traditional cooking practices, which are mostly composed of biomass fuels, to clean cooking practices has been a core development agenda around the globe. This transition to clean cooking energy comes with profound and multifaceted benefits. The use of conventional biomass fuels for domestic cooking is associated with severe health consequences. On May 1, 2016, the Government of India launched the Pradhan Mantri Ujjwala Yojana (PMUY)

to address a major urban-rural gap in India's development journey by making clean cooking fuel accessible to women from economically weaker sections. Although energy infrastructure in urban areas was expanding, millions of rural families, particularly women, still depended on firewood, cow dung cakes, and other solid biomass for cooking, putting themselves and their families at serious health risks every day. PMUY aimed at transforming this scenario by offering deposit-free LPG connections to women from Below Poverty Line (BPL) households. Under PMUY, the government bears the LPG connection cost (i.e. ~INR 1,600 or USD 22), which includes the installation cost, administrative charges, and security deposit. However, a PMUY beneficiary has to pay the remaining amount close to INR 1,600 (for the LPG stove and first cylinder) either upfront or through an interest-free loan from the oil marketing companies (OMCs).

The existing studies underscore that while policy efforts have substantially improved access, challenges related to affordability, supply chains, and behavioural preferences still impede the widespread transition to clean cooking energy. Hence, a comprehensive review of such studies by identifying major impediments would be useful in examining the viability of such clean cooking fuel-related projects. This work systematically reviews the existing empirical (quantitative and qualitative) studies, with a particular focus on the Pradhan Mantri Ujjwala Yojana (PMUY) in India.

Our first objective is to identify the theoretical frameworks and econometric approaches employed in the analysis of clean cooking fuel adoption. Second, by investigating the determinants that influence the transition to clean cooking fuels, especially in rural contexts, this review aims to synthesise insights from existing literature within the Indian context, providing further understanding of the socio-economic and environmental implications. Third, the study also identifies the impact of LPG adoption on environmental, social and health-related outcomes based on earlier investigations.

We employ the Systematic Literature Review (SLR) framework. The review follows the guidelines of Preferred Reporting Items for Systematic Reviews and Meta-Analyses. We have explored two academic databases, Elsevier's Scopus and Clarivate Analytics' Web of Science, for identifying the relevant studies by using the following search strings: "PMUY" OR "Pradhan Mantri Ujjwala Yojana," mentioned in either the title, abstract/or keywords.

Although the PMUY has made commendable progress in expanding access to clean cooking fuel across the country, the distribution of connections exhibits a regional disparity that suggests possible implementation difficulties. The effectiveness of PMUY should be evaluated using the combination of refill rate, intensity of use, and choice for LPG as a primary source of energy, offering the best picture of accessibility, affordability, and behavioural changes among households.

Decoding Climate Change and Changing Pattern of Rainfall in India

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Present paper has investigated the impact of climate change in the changing pattern of Rainfall. Author has observed the changing pattern of rainfall in generally Rainfall prone zones and Rainfall in the arid zones. Author has investigated it empirically from the Government Report of Council on Energy, Environment and Water and Report of India Meteorological Department, Ministry of Earth Science, New Delhi. Paper has found there is a shift in Rainfall pattern. There is also a change in intensity of Rainfall and delayed arrival of South West Monsoon. There is also a delayed departure of South West Monsoon. Delayed arrival of Monsoon effects the sowing of Kharif crops. It needs additional irrigation. Finding also shows very heavy rainfall in very short duration of time which in turn creates abrupt floods, waterlogging. Paper has taken the base analysis data of Long Period analysis (LPA) which an average rainfall during the last 20 to 30 years. to analyse the latest data of Rainfall. Here in the study, Rainfall pattern of South West Monsoon has been analysed deeply. It has done because South West captures 75% of the Monsoon in India. However, Rainfall pattern of North East Monsoon has also been seen. Paper has seen the rainfall pattern data for the year of 2024. After the deep analysis of the Rainfall pattern data, it is being found that usually drier meteorological subdivisions in India are getting more and excess Rainfall. Example lies in excessive Rainfall in the subdivisions of Gujrat, Rajasthan, Parts of Tamil Nadu, Telangana, Andhra Pradesh (Rayalaseema), Karnataka and Maharashtra. Conversely, Rainfall prone zones are having Rainfall deficit. Example lies in Rainfall deficiency in North East Region of Assam, Meghalaya, Arunachal Pradesh, Nagaland, Manipur, Tripura and Northern region of Jammu and Kashmir, Ladakh.

Sectoral Dynamics of Electricity Consumption and Gross Value Addition in India: A Time Series Analysis from Year 1951 to 2021

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This study examines the relationship between Gross Value Added (GVA) across various sectors of the Indian economy and sectoral as well as total electricity consumption from 1951 to 2021. Using the Vector Error Correction Model (VECM), the analysis investigates cointegration, long-term relationships, and short-term dynamics between GVA and electricity consumption, while the Granger causality test identifies the direction of causality. The VECM results reveal that a

1% increase in GVA of certain sectors leads to higher electricity consumption, whereas other sectors exhibit a negative long-run relationship. The Granger causality test indicates minimal or no causality between GVA growth and electricity consumption in the industrial, agricultural, railway, and commercial sectors. However, there is evidence of causal relationships involving GVA growth in the domestic sector and other sectors. Additionally, a unidirectional causality is observed, running from sectoral GVA to electricity consumption. The study has also employed the Exponential Recursive Integrated Causality (ERIC) to find the future expected trends. Findings also highlight a decline in the electricity intensity required to produce one unit of GVA in recent years. Overall, the study underscores the critical role of electricity consumption in driving productivity in agriculture, commercial, and industrial sectors, emphasizing the need for a stable and sufficient electricity supply to avoid shortages and meet sectoral demands.

The analysis further suggests that as India advances toward a service-driven and technology-oriented economy, the pattern of electricity consumption is likely to shift significantly. While traditional sectors such as agriculture and industry will continue to demand reliable supply, the growing role of domestic, commercial, and digital services highlights the importance of diversifying energy sources and improving efficiency to sustain balanced growth.

Vulnerability Indices of Eastern Vidarbha Zone of Maharashtra with Special Reference to Climate Change

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This study investigates district-wise climate vulnerability in the rice-based cropping systems of Eastern Vidarbha Zone, Maharashtra. It integrates both primary and secondary data, with secondary data spanning the years 2001-02 and 2011-12 and primary data collected in 2022-23 from Gadchiroli district. A total of 60 farmers from Gadchiroli were randomly selected for the primary data collection. Vulnerability indices for each district in the Eastern Vidarbha Zone were estimated using the method proposed by Iyengers and Sudarshan (1982). To assess farmers' perceptions of rice productivity impacted by climate change, Henry's Garrett's Ranking technique was utilized. The findings reveal that Gadchiroli was the most vulnerable district in both 2001-02 and 2011-12 within the Eastern Vidarbha Zone. Initially, Bhandara was also considered highly vulnerable, but Gondia replaced it in the 2011-12 period. Gadchiroli's rice farmers reported a significant increase in flood intensity, with rising temperatures as the second most pressing issue and changes in sowing times due to climate change ranked third. The elevated vulnerability in districts such as Gadchiroli, Bhandara, and Gondia is attributed to a combination of demographic, climatic, agricultural, and occupational factors. To effectively address the vulnerabilities in these districts, targeted development efforts on these specific indicators are essential.

The study underscores the importance of localized adaptation strategies, as climate impacts and vulnerabilities vary across districts even within the same agro-climatic zone. Strengthening irrigation infrastructure, promoting climate-resilient rice varieties, and enhancing access to extension services can help farmers cope with increasing risks. Moreover, integrating farmers' perceptions into policy design ensures that adaptation measures remain context-specific and practically implementable.

The Relative Impact of Energy Intensity and Determinants of CO2 Emission in a Cross-country Space

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The massive energy consumption by the modern economies and meeting the energy demand predominantly from fossil fuels has led to relentless increase in the CO₂ emissions. As the economies are making great efforts to bring down CO₂ emissions, achieving lower energy intensity is often viewed as helpful in bringing down CO₂ emissions. To better understand this relationship, it is important to consider the key factors that influence CO₂ emissions. The GDP per capita, the share of fossil fuels in energy consumption, trade openness, urbanization are some of the important determinants of CO₂ emissions as described in available empirical literature. (Aller, Ductor, Grechyna 2021).

The determinants of CO₂ emissions have been extensively investigated in the existing literature. However, there is a lack of studies where the relative contribution to CO₂ emissions is measured for all the important determinants alongside energy intensity.

This study attempts to assess the relative importance of two groups of variables (energy intensity vs other determinants of CO₂ emissions) choosing 5 top energy consuming countries: China, US, Russia, India and Japan as per the analysis of ACEEE (The American Council for an Energy Efficient Economy 2022) when evaluated in their total primary energy consumption. The study collects the CO₂ emission data for the above-mentioned countries for over a period of 30 years, 1990-2023 from the World Bank.

In the panel regression the CO₂ emission measured in million tonnes is the dependent variable chosen for the study. The independent variables are energy intensity (defined as energy per GDP measured in kilowatt – hours per dollar) and the GDP per capita, the share of fossil fuels in energy consumption, urbanization (defined by urban population growth), trade openness (trade as a percentage of GDP) and the data on these independent variables are sourced from World Bank Indicators. We begin by estimating a baseline regression in which energy intensity is the primary explanatory variable. The remaining control variables are included as a separate set and jointly regressed on CO₂ emissions. After each regression we compare the adjusted R² and calculate the incremental explanatory power of the independent variables separately. The relative contribution of the energy intensity and the rest of the explanatory variables on CO₂ emissions are concluded from the result. The adverse effect of energy intensity as compared to other factors on CO₂ emissions is confirmed from the regression analysis and this gives a policy direction towards more focused action on CO₂ combating policies.

Gender Difference in Agricultural Productivity, Role of Floods and Coping Strategies: A Case Study in Coochbehar, West Bengal, India

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The paper underpins significant gender disparities in productivity of paddy in the study area based on the field survey findings carried out in the year 2021-22. There was complete marginalization of female headed farmer households (FHHs) compared to male headed farmer households (MHHs). These findings call for government aids and other help like subsidized loans and financial assistance as vital extenuating measures to help these poor females headed households. There was a deluge in Sikkim during September-October, 2023, the flood situation worsened in different pockets of northern West Bengal with the worst affected areas being Darjeeling, Kalimpong, Jalpaiguri, Alipurduar, North & South Dinajpur and Cooch Behar districts. Flood took place during September-October, 2023, when the harvesting of kharif paddy usually is about to start and therefore significant damage was done to the standing crops. Our survey findings reveal that FHHs faced 11 per cent fall in their kharif paddy output per ha while profitability declined by a conspicuous 83 per cent due to crash in their farm-gate prices. With reference to rabi paddy, owing to poor drainage facility of the female farm plots, the flood water remained stagnated for long in the field. As a consequence, there was not only postponement in sowing of rabi paddy, but the amount of seed ought to have been sown per hectare was also less. The females grieved that because of asymmetric information they continued to use indigenous variety of seed for cultivation which are not flood resistant in nature. Therefore, relative to 2021-22, rabi productivity was also lower by 15 per cent. Panic led to greater utilization of fertilizer and pesticide in an attempt to control damage, which gave way to greater concomitant rise in input cost. Subsequently the profitability in 2023-24 was calculated to be only normal for these households.

On the other hand, in the case of male farm (MHHs) households, there was a 12 per cent fall in productivity of kharif paddy from 2021-22 to 2023-24 and a corresponding fall in profitability by 45 per cent. The MHHs unanimously underpinned that pre-mature paddy cannot be harvested even if there is a formal government alert issued beforehand as they will not get sold in any way. For rabi paddy, males cited similar reasons as that of female, as a result of which they also encountered marked fall in productivity per ha by 13 per cent. However, given that their field drainage system quality was relatively better-off than women, so there was lesser hindrance to sowing as well as lower harm to the germinating seeds. Therefore, they saw higher output per unit of land in relation to female farmer households. Besides that, given that they received better farm-gate prices for the rabi paddy output compared to women colleagues because of being better informed about ruling private market prices, their net profit per ha was perceptibly higher than the FHHs. While women had almost run into losses men cultivators earned a net profit of Rs. 2,800 per ha.

Sustainable Development through Carbon Sequestration: A Study of Natural Resource Management in the Western Ghats of India

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To achieve sustainable development, the responsible utilization, conservation, and restoration of resources are essential. Natural Resource Management becomes crucial to fulfil the needs of the present generation as well as of future generations. It requires careful planning, monitoring, and regulation to ensure that resources are utilized in a manner that balances the economy and the environment. Natural resource management primarily includes promoting biodiversity and mitigating climate change. One of the important strategies to mitigate climate change is through increasing the amount of carbon stored in the environment. Forests not only provide provisioning services but also the regulating services, such as carbon sequestration, which is crucial for creating environmental balance. However, for economic activities, developmental purposes, and to accommodate the demand of an increasing population, the natural ecosystems are disturbed and altered. As a consequence, the world is witnessing an increase in global warming. To fight increasing global warming, India has submitted its Nationally Determined Contribution (NDC) and has committed to creating additional carbon sinks of 2.5 billion to 3 billion tonnes of carbon dioxide by 2030. India will be able to achieve the target by restoring and conserving the forest.

This study analyses natural resource management in the Western Ghat region of India with a focus on carbon storage and sequestration by forests. Recognizing the significance of effective management of natural resources, the research intends to examine the quantity of carbon stored and sequestered over the years from 1992 to 2020 in the Western Ghat region of India. The study uses the ‘Carbon Storage and Sequestration’ model of an open-source software, which is a project of Stanford University titled “Integrated Valuation of Ecosystem Services and Trade-off” (InVEST), to estimate the biophysical quantity and monetary value of carbon stored in the forest ecosystem. The model assumes that carbon sequestration is purely a function of Land Use Land Cover (LULC) and hence, the research uses geospatial and environmental data for the analysis. The model requires LULC maps, Carbon Pool data, and economic data such as the Social Cost of Carbon (SCC) and discount rate. LULC maps are collected from the European Space Agency (ESA), and open software, QGIS, is used to edit and analyse the spatial data according to need. The carbon pool dataset is created by using carbon pool data provided by the Forest Survey of India. Discount rates used are at par with discount rates used by the United States of America, and the SCC is gathered through a literature review. The research found that over the years, the Western Ghat region from Kerala and Tamil Nadu has lost its forest cover, and hence, as a result, carbon sequestration has reduced over time. The findings emphasize the need for integrated and sustainable approaches to natural resource management, highlighting the pivotal role of carbon sequestration for long-term environmental well-being.

Climate Change on the Corporate Agenda – A Bibliometric Analysis

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Climate change presents a host of uncertainties and risks to businesses. Climate change results in significant and disruptive changes in the social, ecological and economic systems. Hence, it influences not only individuals but also organisations and society at large.

The present study assesses the literature covering climate change in the context of the corporate sector. It seeks to answer questions like: How has the literature on the subject grown during the first quarter of the 21st century? Which primary sources or journals are preferred for publishing such literature? Who are the most productive and influential authors? Which are the most productive and influential countries that have published such literature? Which are the most prevalent and emerging research themes concerning the topic of climate change?

Considering the above questions, the analysis is conducted at the global and India levels. The Scopus database is used to source articles on climate change. The study considered a total sample of 2264 articles globally, of which 129 were in the Indian context.

The analysis revealed that the research on climate change in the context of the corporate sector has grown over the last 25 years, with a remarkable surge from 2019 to 2024. India started late but has contributed significantly, especially since 2022. Journal of Cleaner Production is the journal publishing the highest number of articles. The United States of America (USA) is the most productive country regarding the number of documents, while the United Kingdom (UK) is the most influential regarding the number of citations.

The prominent research themes identified in the literature include sustainability, sustainable development, and Corporate Social Responsibility. They also include individual-level efforts in corporate strategy, governance, environmental management, and performance. The themes identified based on the keywords mitigation, adaptation, and strategy indicate that the literature investigates these strategies for handling climate change adopted by the corporate sector.

Climate Change and Sustainable Development in Developing Countries

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Climate change may be due to natural internal processes or external force such as modulations of the solar cycles, volcanic eruptions, and persistent anthropogenic changes in the composition of

the atmosphere or in land use. Climate change is one of the most important global environmental challenges, with implications for food production, water supply, health, energy, etc. Addressing climate change requires a good scientific understanding well as coordinated action at national and global level. Climate change is a serious and urgent issue. The Earth's climate is changing, and the scientific consensus is not only that human activities have contributed to it significantly, but that the change is far more rapid and dangerous than thought earlier.

India has been taking several proactive climate actions to fulfil its obligations as per the principles of common but differentiated responsibilities and respective capabilities and equity. The Nationally Determined Contribution (NDC) submitted by the country has been formulated keeping in mind the developmental imperatives of the country and is on a “best effort basis”. In its NDC, India has sought to reduce the emissions intensity of its GDP by 33 to 35 per cent 2005 levels by the year 2030; achieve 40 per cent of cumulative electric power installed capacity from non-fossil fuel sources by 2030; and enhance forest and tree cover to create additional carbon sink equivalent to 2.5 to 3 billion tons of carbon dioxide by 2030. The other goals pertain to adoption of sustainable lifestyles based on traditional values of conservation and moderation, adaptation to climate change, clean economic development and environment friendly technology, etc.

The prevailing approach to climate policy follows two tracks. One track is to see it as an investment program, which is to be assessed on standard cost and benefit grounds, the costs being those of investments required in new technologies, and the benefits those of avoided climate change (plus ancillary environmental and social benefits where relevant). The second approach is to see it as the provision of global public goods, and ask how independent economic factors, including states, can be induced to provide such public goods.

Prominent Government initiatives on mitigation & adaptation actions and their progress 6.12 India's National Action Plan on Climate Change (NAPCC) was launched in 2008. It has through 8 National Missions focussed on advancing the country's climate change related objectives of adaptation, mitigation and preparedness on climate risks. The Government has decided to revise the NAPCC in line with the NDC submitted by India under the Paris Agreement to make it more comprehensive in terms of the priority areas.

Assessing the Impact of Climate Change on Crop Yields in Assam's Floodplains: An Empirical Analysis

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Climate change has increased the frequency and intensity of extreme events, creating food and water insecurity. In Assam, the agricultural sector supports approximately 70 percent of the state's population and contributes around 20 percent to the state's gross domestic product. While agricultural productivity has increased, climate change has slowed growth over the past 50 years.

On the other hand, the state annually faces floods because of its location in the Brahmaputra valley and variation in weather conditions, making 39.58 percent of the state's land classified as flood-prone areas. While most studies focused on the south-west monsoon variability, we capture the impact of crops across three seasons and study a district-level dataset covering the period from 1981 to 2022. Rice (paddy) is the primary crop in Assam, occupying over 2 million hectares yearly. This study investigates how floods and climate change affect paddy yields, specifically Sali (winter), Boro (summer), and Ahu (autumn) rice. We used Feasible Generalized Least Squares (FGLS) regression and applied second-generation unit root tests for stationarity. Cointegration techniques (Kao, Pedroni, Westerlund) confirm a long-term relationship between flood exposure, climate variables, and yields. The FGLS results show that the flood-affected area significantly reduces Sali and Ahu yield, while Boro rice remains unaffected. Increased minimum temperature, rainfall, and humidity boost Sali yields. Higher humidity also benefits Boro and Ahu yields. However, Ahu yields suffer from excessive rainfall but improve with higher minimum temperatures. Our findings provide a clear picture of how rice yield is affected by a changing climate and floods. The state government should actively promote awareness among farmers about crop insurance, flood, and drought-tolerant crops to foster sustainable agricultural development. Additionally, encouraging the adoption of integrated farming systems that diversify income sources, which reduces dependence solely on agriculture, so that farmers are not left at the mercy of nature. By understanding and addressing the impacts of the changing climate and floods on these key crops, this study could help in building resilient agricultural systems, enhancing food security, and supporting the farming-based livelihoods locally and globally.

Understanding Inertia in the Context of Climate Change

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Climate change, one of the biggest challenges facing mankind, manifests itself differently on temporal, spatial, sectoral, and sectional lines, so the response mechanism should be tailored to meet the specificity of context. The (mainstream) response mechanisms are often marred by inertia, which is a resistance to change. This work does not attempt to cover all the aspects of climate change. In particular, though there are many aspects to deal with, my intention here is to highlight mainly the presence of inertia in its various forms in the response system. The Intergovernmental Panel on Climate Change (IPCC) highlights the presence of inertia in climate, ecological, and socio-economic systems. The biophysical system is itself subjected to climate inertia, of which thermal inertia is one aspect. Inertia plays differently at individual, aggregate, and at collective levels. In terms of economic theories, inertia could be understood as a cost, and as generating externality leading to perverse price signaling and market failure. Traditional Ecological Knowledge (TEK), given its emphasis on community involvement, biodiversity conservation, space-specific, and sustainable use of natural resources, can be integrated into climate change mitigation, adaptation, and resilience-building strategies to make them more effective. Economic theories provide frameworks to understand and analyze various dynamics of climate change and

associated aspects. Further, the rationality assumption needed modification by incorporating the concept of inertia-aware rationality, community and nature's stewardship, ethics, and justice. Addressing climate change requires us to constantly look beyond the mainstream narratives and look for alternate solutions, while maintaining the requirement of growth, development, equality, and employment generation. To make climate change response strategies more effective, we need to understand, assess, and overcome the different forms of inertia manifested in individuals and the system. Utilization of modern technology can be a very helpful shot in the arm.

A Comprehensive Methodology for the Post Disaster Damages, Losses and Need Assessment

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Frequent occurrence of Natural Disasters in every part of the world has made it necessary to devise a comprehensive Post-Disaster Damage, Loss and Need Assessment Methodology. The methodologies of OECD and NIDM have several limitations and do not reflect the true social cost of a natural disaster. The need for a comprehensive methodology to assess the damages, losses and need are threefold: (i) to assess the total damages, and losses due to natural disaster, (ii) to assess the financial needs for building back better infrastructure or replace the damaged infrastructure with disaster resilient infrastructure, (iii) to provide compensation to the households suffered due to disasters. In this paper we have critically reviewed the existing methodologies for estimating the damages, losses and needs due to disasters. We have also done a case study of Puri District, of Odisha, India, which was severely impacted due to the very severe cyclone Fani in May 2019, to assess the limitations in the methodologies. Based on the review of methodologies and case study we propose the corrections to be made on the existing methodologies for the assessment of the damages, losses and post disaster needs.

The proposed framework emphasizes the inclusion of social and livelihood dimensions, which are often overlooked in conventional methodologies. By accounting for disruptions in income, employment, education, and health services, the assessment can better capture the holistic impact of disasters on communities. Such an approach not only ensures more accurate estimation of needs but also strengthens the planning of recovery strategies that are equitable and sustainable.

LMDI Decomposition of CO₂ Emission in BIMSTEC Countries and Focus on its Determinants Using Panel Data

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Greenhouse gas emissions have been a major concern for the world because of their tremendously adverse impacts on health, productivity and environment. Several international institutes like the UN, IMF, World Bank, UNFCCC have tried to highlight this issue through several initiatives in

the name of MDGs, SDGs, Paris Agreement, and COPs. Countries all around the world have implemented strategies to curb GHG emissions. This study particularly focuses on the BIMSTEC region, which comprises seven countries India, Bangladesh, Bhutan, Myanmar, Nepal, Sri Lanka, and Thailand, situated around the Bay of Bengal. This makes this study unique in its field. Using LMDI-I method, it has decomposed the CO₂-equivalent GHG emission from Agriculture, Energy, and IPPU sectors into activity effect, which reflects the change in total emissions due to changes in the overall level of economic or sectoral activity, such as GDP, structure effect, which captures the impact of changes in the relative contribution of different sectors or activities to the overall economy and intensity effect which represents changes in emissions per unit of activity within each sector. The product of the above three effects is called the total effect. If the total effect is greater, then one then it indicates an increase in emission, and vice versa, if it is one, we consider no change. It captures improvements in technology, energy efficiency, or emission control within sectors. The CO₂-equivalent GHG emission calculation has been accomplished by multiplying CO₂, CH₄, and N₂O emissions with their respective global warming potential values using the AR5 framework. It is observed that emission growth is largely driven by increasing activity and worsening intensity, partially offset by a favourable structural shift. To identify emission-causing variables and country-specific effects, the LSDV model has been utilized, whose result came out as expected for most of the countries and variables. The study points out that there should be more efforts in undertaking emission-reducing policies, and further active participation by each country is required. Also, each country should focus more on enhancing Research and development, searching for a cleaner production process, and providing incentives in the form of subsidies and lower taxes for newer, more efficient technologies.

Beyond Borders: The Integrated Challenge of Maritime Security and Environmental Resilience in India

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The intersection of maritime safety and environmental sustainability is crucial for addressing global challenges like climate change, overfishing, and marine pollution. This paper examines how India can balance economic growth with environmental protection within its maritime domain, advocating for the integration of all stakeholders: government agencies, coastal communities, and the private sector. It highlights how much of a necessity it is to have coordinated action initiated by all parties: government, coastal populace, and the business world. The gist of the study is how India can adequately utilize its marine resources without on the other hand being exploited by barbarism of activities and degrading of the environment. The paper also looks at observing the severe effects of climate change even on the maritime security of the Indian Ocean region. This involves finding out weaknesses and possible conflicts due to the change of marine ecosystems. Additionally, the paper highlights the basic notion regarding the engagement of coastal communities as major stakeholders in the attainment of sustainable maritime governance. Their involvement is considered to be critical in terms of efficacious policy practice and sustainable

success. Lastly, the paper offers regional cooperation as the best solution in addressing common issues in the seas. It suggests that a framework be developed that supports a strong international cooperation to enhance resilience and security of all the member countries. The study conforms to various United Nations Sustainable Development Goals (SDGs). In particular, it makes references to SDG 14 (Life Below Water), speaking about clean oceans and marine resources; SDG 13 (Climate Action), talking about the effects of climate change; SDG 8 (Decent Work and Economic Growth), which discusses the sustainable economic growth and SDG 17 (Partnerships for the Goals), which stresses the importance of cooperation. It is through incorporation of these UN Sustainable Development Goals in the policies and approaches of their maritime procedures that the Indian government can help to ensure a more stable and environmentally friendly marine environment that will have both economic and environmental benefits. This comprehensive way is crucial towards securing a sustainable maritime sector in India.

Can “River Bridge” be a Key Infrastructure for Social Capital and Socio-Economic Development in the Sundarbans? From the Disaster Risk Resilience Perspective

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In the labyrinthine waterways of the Sundarbans, geographical separation is the natural norm, and resilience is the everyday necessity. However, a serious limitation lies in transportation and connective infrastructure. In this context, resilience refers to the capacity to return to a pre-disturbance state through adaptations and developmental integration. The resilience literature extensively underscores the importance of infrastructural integration as means to reduce the potential risk of community empowerment. In the Sundarbans, physical infrastructure is indispensable for mitigating the multi-hazard impacts. Due to geographical isolation connectivity is restricted, and residents largely depend on the ferries to meet their livelihood necessities. Out of fifty-four inhabited islands, sixteen are not connected by bridge infrastructure, and are therefore most vulnerable to the disaster. The study reveals that the river bridge infrastructure could play a pivotal role as a conduit of developmental activities, enabling community progress by enhancing economic opportunities and social services, including transport, agriculture, education, health, business, and tourism. Therefore, it promises a significant role in developing socio-economic capacity in this region. The study highlights that that physical connectivity is positively associated with social capital development, which leads to increased fast service delivery, community participation, repairing, and reconstructions. The study covered the urgency of construction of bridges to connect multiple islands, which are highly climate-vulnerable and less-developed rural areas. The study shows the connected and not connected islands by bridges and explained why it is necessary to construct bridges to reduce climate disaster risks. The analysis identifies Sagar,

Namkhana, Patharpratima, Gosaba, and Hingalgañj as highly climate-induced vulnerable, and most isolated islands. The study further examines the issues and challenges associated with bridge construction in relation to environmental conservation motives, arguing that disaster risk resilience and sustainable development is difficult to achieve without connectivity. The findings suggest that well-designed, environmentally sensitive hard and soft infrastructure plans can reconcile development with compromising some extent of environmental impact.

Unveiling the Multidimensional Impact of Climate Change on Poverty, Employment, and Economic Growth

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Kapil Dhunna, *Ph.D Scholar, Delhi University, Delhi.*

This study investigates the multidimensional impact of climate change on three core development outcomes such as poverty, employment, and economic growth across 24 countries over the period 1995 to 2022. Employing a dynamic panel framework with System GMM estimation, the paper corrects for endogeneity and unobserved heterogeneity while capturing country-specific dynamics. The empirical models integrate key climate variables including temperature rise, CO₂ emissions, and disaster frequency, alongside macroeconomic and demographic controls. Interaction effects are estimated to assess how structural factors such as education spending and income group classification condition a country's vulnerability to climate shocks. The findings reveal that rising temperatures exert statistically significant adverse effects on poverty reduction, employment generation, and GDP growth, with the strongest impacts observed in low- and lower-middle-income countries. Education expenditure emerges as a significant buffer against climate-induced poverty, while income-based heterogeneity reinforces the asymmetrical burden of environmental degradation. These results underscore the necessity of tailored adaptation strategies and sustained investments in human capital to enhance climate resilience and equitable development.

The study further highlights the policy urgency of integrating climate considerations into national development agendas. Strengthening adaptive capacities through green investments, renewable energy expansion, and inclusive social protection programs can mitigate the long-term economic and social costs of climate shocks. Moreover, fostering international cooperation and climate finance is critical to support low- and lower-middle-income countries that face disproportionate vulnerabilities but possess limited fiscal space to respond effectively.

Harnessing Artificial Intelligence for Sustainable Solutions

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Climate change poses immediate worldwide issues, ranging from increasing temperatures to the decline of biodiversity. Artificial Intelligence provides robust solutions through enhanced climate modelling, continuous environmental observation, and forecasting analytics for severe weather occurrences. This paper explores the role of AI in tackling environmental challenges like satellite monitoring for deforestation, precision farming and smart energy solutions. Using data sets AI helps policymakers, researchers to execute or predict climate strategies based on data. Few climatic initiatives of AI include Surveillance of satellites, Agricultural precision, Smart energy networks and Climate simulation.

This paper explores the diverse functions of AI in advancing sustainability, concentrating on its uses in mitigating climate changes, optimizing renewable energy, enhancing sustainable agriculture, managing waste and conserving biodiversity. As an example, satellite imagery enhanced by AI and computer vision methods allow for accurate tracking of deforestation, land degradation and ocean wellbeing. Predictive modelling instruments improve climate prediction thus allowing proactive disaster risk management. In energy systems AI enhances grid management, regulates renewable incorporation and boosts efficiency, directly aiding in the reduction of greenhouse gas emissions. Likewise precision farming powered by AI driven soil assessments, crop health tracking and irrigation management boosts food security while reducing environmental effects.

Apart from environmental uses AI enhances sustainable city planning, aids circular economy initiatives via automated waste separation and recycling systems and provides policy makers with data driven simulations to assess the long-term effects of development plans. The incorporation of AI into sustainability frame works does come with its difficulties. Primary issues involve algorithmic clarity, data confidentiality, fair access to technology and the possibility of prejudice in decision-making systems. Moreover, the energy usage of extensive AI models requires sustainable computing methods to guarantee that the technologies intended to safeguard the environment do no unintentionally damage it.

The paper highlights the importance of interdisciplinary collaboration, integrating knowledge in environmental science, ethics and governance to develop responsible and effective AI solutions. Aligning AI advancements with the United Nations SDG's enables societies to hasten the shift towards a resilient, low carbon and fair future. The result emphasizes that utilizing AI for sustainability is not just a technical challenge but a socio technological challenge but a socio-technical change where ethical use and inclusive involvement are crucial for attaining enduring global effects.

Environmentalism and the Concept of Development through the Lens of the Birsa Munda Movement: With Special Reference to Jharkhand

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East India Company (EIC)—The EIC, against which Birsa rose to seek independence for his *Jal, Jungle, and Jameen*. Today, we live in an independent India, and 18 years into the creation of Jharkhand, there are attacks from all quarters. *“There was one East India Company, and now we have many.”*

— Dayamani Barla

The Birsa movement was not only a revolution against feudalism; it had multiple dimensions. It was a movement for protecting the environment, resisting the capitalist model of development, safeguarding tribal culture, beliefs, and values, and defending *Jal, Jungle, and Jameen*. It was a struggle rooted in their soil, mountains, forests, and socio-economic and cultural norms.

“The basis of the whole movement is a feeling on the part of the Mundas that they are the true owners of the soil; that they appointed the Maharaja; and that all non-aboriginals are interlopers and land-grabbers. To this must be added the fact, on which I have more than once dwelt, that the Munda is altogether incapable of making a good case for himself in our law courts, while he is always beset by people of his race and outsiders, ready to swindle him out of his land and all his other rights.”

— H.C. Streatfield, Esq., Deputy Commissioner of Ranchi

Jharkhand is not merely a geographical boundary; it is a school of thought regarding environmentalism, protection of tribal culture and identity, the spread of democratic norms, mutual understanding and cooperation, coexistence with nature, eco-friendly customs, and sustainable livelihoods. For the tribal community, Jharkhand holds special meaning. It represents an alternative path of development—rooted in environmental consciousness—and symbolizes the struggle for *Jal, Jungle, and Jameen*. The holistic approach of the Birsa movement embodied all these ideas, both in theory and in practice.

“Sir, I am proud to be a jungli—that is the name by which we are known in my part of the country. Living as we do in jungles, we know what it means to support this resolution. As a jungli, as an Adivasi, I am not expected to understand the legal intricacies of this Resolution. This Resolution is not going to teach Adivasis democracy. You cannot teach democracy to the tribal people—you have to learn democratic ways from them. They are the most democratic people on earth.”

— Jaipal Singh Munda, Constituent Assembly, 1946

Jharkhand plays a vital role in sustaining Indigenous Knowledge Systems, exemplified by figures like Padma Shri Jamuna Tudu, Padma Shri Chutni Devi, Dayamani Barla, and Padma Shri Chami Murmu. Historian Ramachandra Guha also emphasizes the tribal value system as central to environmental protection. For tribal societies, nature is inseparable from life itself.

In the globalization era, “development” is often reduced to economic growth, sidelining human well-being. Profit-driven models have led to social, cultural, religious, and economic displacement. This paper examines the Birsa Munda movement in today’s Jharkhand, where tribal identity, biodiversity, and the environment face critical challenges. *Jal, Jungle, and Jameen* symbolize not just resources, but environmentalism, grassroots democracy, and resistance to capitalist development—making Jharkhand itself a living struggle for tribal identity and dignity.

“No trauma could be more painful for a family than to be uprooted from a place where it has lived for generations. Yet, the uprooting has to be done, because the land occupied by the family is required for development projects which hold the promise of progress and prosperity for the country and people in general. The family getting displaced thus makes a sacrifice so that others may live in happiness and be economically better off.”

— Claude Alphonso Alvares and Ramesh Billorey, *Damming the Narmada: India’s Greatest Planned Environmental Disaster*, Penang: Third World Network, 1988.

Impact of Climate change and Environmental Challenges on Agriculture Sector in India

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Climate and environment are the most important components in the economic, social, political and cultural development and preservation of a country. Climate change is the most discussed issue at the global level in the current context. At present, almost all the countries of the world including India are facing the problem of climate change and environmental challenges. Climate is the basis of life on earth. climate is the long-term pattern of weather in an area. It includes the average of temperature, rainfall, humidity, wind and other weather-related elements. Climate affect every activity and system of human life. All aspects of development are determined by climate We know that India is a country with a developing economy in which according economy in which according to the 2011 census, about 52% of the people are engaged in agriculture and related economic activities. We know that agriculture here is mostly dependent on the monsoon. It is necessary for the monsoon to arrive on time for agricultural work. If the monsoon arrives on time, the farmer is able to complete his agricultural work on time. As a result, the income increases and if the monsoon does not arrive on time, the entire system of the agricultural process is affected. Productivity decreases and this directly impacts the economy. Therefore, it can be said that climate change is also a major reason for the uncertainly of monsoon. Climate change is caused directly or

indirectly by human that alter the composition of the global atmosphere. Climate also change due to natural factors. Today environmental unbalance is the biggest problem for human. There is a need to focus on environmental balance of have a positive impact on agricultural productivity. So, the need for forest management and to make people aware about plantation.

In conclusion I would like to say that suitable climate and balanced environment promote agricultural development. Agricultural development will increase the per capita income of the farmer. Subsequently, the national income will increase. As a result, the country will become prosperous and strong.

Growth of Agriculture in Vidarbha Region of Maharashtra

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The present study was undertaken in Vidarbha region. The three crops Viz. Cotton., Soybean and Paddy were selected for the present study. The data were collected on area, production, productivity of Cotton., Soybean and Paddy grown in Vidarbha region pertaining to the period from 2001-2002 to 2020-2021 (20 years). For the analysis of growth and instability, the entire study period was split into two sub-periods and overall. The district-wise time series data on area, production, productivity and various prices were collected from Government publication and websites. The compound growth rates of area, production and productivity of Cotton, Soybean and Paddy were estimated for last 20 years. To measure the instability in area, production and productivity, an index of instability was used as a measure of variability through Coefficient of Variation (CV) and Cuddy Della Valle's instability indices.

The results of the analysis are expected to provide valuable insights into the patterns of growth and variability in major crops of the Vidarbha region. Understanding these trends is crucial for identifying the factors contributing to instability and for formulating region-specific strategies that enhance crop productivity, stabilize farm incomes, and ensure sustainable agricultural development in the long run.

Climate Change and Nutritional Status: Evidence from India

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The exacerbating effects of climate change leaves lasting effects on various dimensions of life – economy, health, society, and so on. It is vital to understand various channels of impacts of climate change that hinder growth, development and pose a threat to human life. Keeping the lens on health impacts of climate change, several studies have analysed the influence of changing climatic conditions on human health and nutrition through various channels. This paper aims to understand the direct effects of climate change on individual nutritional status in India. Employing a reduced form specification, this study analyses the relationship between body mass index (BMI) – taken as an indicator of individual nutritional status, and climate – captured through mean temperature and precipitation, among women from 20 Indian states. The study uses NFHS-4 data corresponding to 2015-16 for data on BMI, and uses temperature and precipitation data over the period 1986-2015 to represent climate. Results suggest that mean temperature and BMI exhibit a U-shaped relationship, after controlling for other individual and household characteristics that might affect BMI, and it is in line with the evidence from cross country studies reported in the literature. The study also attempts to analyse the relationship for different regions of India, as well as for rural and urban areas separately. The findings provide insights on possible adaptation measures at regional and national level.

Impact of Climate Change on Poverty, Employment, and Economic Growth: A Legal Framework Perspective

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Climate change has emerged as one of the most potent threat multipliers, impacting the intensity of poverty, nature of employment and dynamics of economic growth in countries like India. Higher temperatures, increasingly erratic monsoons and more extreme weather also raise the farming, industrial and infrastructure risks, especially for the poor and marginalized. The paper is focused on the effect of climate change over some selected socio-economic indicators in India, and substantial evidence has been based on secondary sources of information included government reports, policy papers, and legal frames, and so on. It also discusses legal response machineries in India in the form of Corporate Social Responsibility (CSR), the Environment Protection Act 1986, National Action Plan on Climate Change (NAPCC) and environmental jurisprudence. It also reviews the successful intervention of climate resilience into India's social, economic planning and relevant laws along with the need for a credible and enforceable legal framework to meet the challenges of climate change in the face of continued economic development.

The study further emphasizes that while India has initiated multiple policies and legal measures to address climate change, their effectiveness depends largely on strong enforcement, institutional coordination, and integration with developmental priorities. Strengthening climate governance through decentralized planning, community participation, and greater accountability can enhance the resilience of vulnerable populations. At the same time, aligning climate policies with poverty reduction and employment generation strategies will ensure that adaptation and mitigation efforts contribute to inclusive and sustainable growth.

Scaling Blue Finance for Climate and Environmental Policy Action

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Blue finance refers to financial instruments that support the sustainable use, conservation, and restoration of oceanic and freshwater ecosystems. While traditionally associated with marine conservation, its scope is now expanding to include built environment interventions—such as coastal protection, wastewater infrastructure, and urban water resilience—that deliver both ecological and socio-economic outcomes. As countries pursue Sustainable Development Goals (SDGs) 6 (Clean Water and Sanitation) and 14 (Life Below Water), blue finance offers a pathway to align public investment with long-term climate and development priorities.

This paper adopts a mixed-methods approach, combining a structured inventory of over 50 global blue finance transactions since 2015 with detailed case studies from Seychelles, Belize, and Fiji. It reviews emerging global frameworks, including the IFC's 2022 Guidelines for Blue Finance and guidance from the UN Environment Programme Finance Initiative (UNEP FI), to identify eligibility criteria and structuring practices. Additional insights are drawn from air quality financing programs in South Asia, which offer applicable lessons on bundling small-scale interventions, performance-based disbursement, and blended finance strategies.

Although green finance reached USD 540 billion in bond issuances globally in 2022, blue finance remains nascent and fragmented. The OECD has identified a global biodiversity finance gap of approximately USD 700 billion per year, highlighting the need to channel more resources into water-linked investments. Despite this, successful applications are emerging. For instance, Belize's Blue Bond, supported by The Nature Conservancy and Credit Suisse, restructured sovereign debt while creating a long-term marine conservation trust and funding for infrastructure improvements tied to marine spatial plans.

Empirical findings show that blue finance can effectively support hybrid grey-green infrastructure. Examples include mangrove-integrated coastal barriers, nutrient-reducing wastewater systems, and ports designed with emissions-reduction features. These projects often rely on concessional capital, credit enhancements, and outcome-based payments to attract private

co-financing. However, persistent barriers include low creditworthiness of municipal actors, high transaction costs, and unclear metrics for blue impact verification.

Policy recommendations include developing national blue finance taxonomies that encompass built infrastructure, embedding blue finance into urban plans and climate strategies, strengthening concessional platforms for municipalities, and enhancing local project preparation capacity. Transparent monitoring frameworks aligned with SDG targets are essential to reduce perceived investment risks and ensure accountability.

Blue finance offers a critical opportunity to integrate environmental and infrastructure goals. When supported by sound planning, regulatory clarity, and de-risking mechanisms, it can help transition blue finance from a niche innovation to a mainstream climate investment strategy.

Climate Change and the Feminization of Environmental Risk: An Ecofeminist Analysis of Gender-Just Adaptation

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Climate change affects everyone's lives in some way, but its effects do not fall on everyone equally. For many women — especially those living in the Global South — the daily struggle with climate hazards like floods, droughts, or extreme heat is intensified due to the deep-rooted social and economic inequalities they already face. This paper looks at how these climate challenges contribute to what some scholars describe as a 'feminization of environmental risk'. By drawing on an ecofeminist perspective, this paper argues that the work done by women every day, such as cooking food, water collection, and unpaid care, increases their exposure to climate change while often positioning them as unacknowledged frontline climate responders.

Drawing on recent global reports from the Intergovernmental Panel on Climate Change (IPCC 2022), United Nations Development Program (UNDP 2020), and the Food and Agriculture Organization (FAO 2011 and FAO 2017), this paper highlights how climate change creates specific vulnerabilities for women. It critiques the mainstream climate adaptation strategies that too often ignore the structural barriers women face, along with the essential but unpaid work they do to sustain their families and communities. Instead, this paper argues for a more transformative approach inspired by an ecofeminist vision of climate justice.

Through real examples from South Asia and Sub-Saharan Africa, it shows how local women's groups are already finding ways to build resilience together through community-based efforts that emphasize the ecofeminist principles of care, cooperation, and sustainability.

The paper argues that achieving gender-just adaptation requires deeper structural changes, such as securing the rights of land and resources for women, giving them a strong voice in the decision-making process, and valuing their unpaid environmental labour and care work. By doing this, it reframes climate adaptation as a technical solution and a necessary social justice, grounded in ecofeminist ethics.

Integration of Urban Heat Island Mitigation into Multi-Scalar Climate Action Paradigms for Indian Cities

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Amid escalating climate uncertainties, Indian cities face compounding environmental risks—both thermal and structural—exacerbated by unregulated urban expansion, the erosion of natural cooling ecosystems, and energy-intensive lifestyles. These factors intensify the Urban Heat Island (UHI) effect, which functions both as a symptom and accelerator of climate change. Rising urban temperatures compromise thermal comfort, increase energy consumption, strain public health infrastructure, and disproportionately affect low-income and marginalized communities—thereby entrenching environmental injustice and spatial inequality. This paper examines UHI mitigation as a critical axis of urban climate resilience within the framework of India’s national and subnational climate agendas. It evaluates a spectrum of climate-responsive design strategies including cool roofs, urban greening, blue infrastructure, high-albedo materials, and passive shading systems, alongside non-mechanical, low-carbon cooling technologies such as radiant cooling, structural cooling, and evaporative techniques. These interventions are appraised not only for their technical efficacy but also for their scalability, affordability, and alignment with principles of climate equity. Anchored in key policy instruments—the India Cooling Action Plan (ICAP), the Energy Conservation Building Code (ECBC), and the LiFE (Lifestyle for Environment) Mission—the study highlights the need for embedding UHI mitigation within statutory planning frameworks, municipal development controls, and form-based building regulations. It argues for a transition from fragmented, techno-centric solutions to ecologically integrated urban design paradigms that prioritize thermal comfort, resource efficiency, and spatial justice. By framing the urban microclimate as both a design challenge and a governance opportunity, the paper advocates for the institutional mainstreaming of UHI strategies as part of India’s broader climate resilience trajectory. It concludes that mitigating UHI is not merely a technical intervention, but a climate justice imperative—central to achieving sustainable, inclusive, and thermally liveable urban futures.

THEME 2



Urbanisation and Sustainable Development

Urbanisation drives economic transformation, industrialisation, and job creation. In India, cities fuel GDP growth, innovation, and infrastructure development. However, urban expansion also brings challenges like informal employment, poverty, and inequality. Rapid migration leads to overcrowding, strained public services, and widening socio-economic disparities, shaping a complex urban-employment dynamic. The urban labour market is highly segmented, with a growing gap between high-skilled jobs and low-wage informal work. The rise of the gig economy, platform work, and automation is reshaping employment, raising concerns over job security and workers' rights. Migrants boost economic activity but face exploitation, wage discrimination, and limited social welfare access.

Urbanisation and migration are rapidly transforming India's economy, society, and environment. Cities drive growth and innovation but also face rising inequalities, informal employment, and governance challenges. Migrants, vital to urban economies, often endure precarious jobs, poor housing, and limited access to essential services. Urbanisation has deepened socio-economic divides, marginalising migrants, slum dwellers, and informal workers. Rapid city expansion has fuelled informal settlements with limited access to housing, healthcare, and education. Urban exclusion, shaped by caste, class, gender, and migration status, reinforces inequalities.

With climate change driving migration, urban planning must integrate climate-induced displacement strategies for sustainable growth. Strengthening legal protections, labour rights, and social infrastructure is key to inclusive development.

Migration has long driven urbanisation in India, shaping cities' demographics and economies. While voluntary migration boosts growth, distress migration due to agrarian crises, climate change, and economic shocks raises policy concerns. Migrants fuel urban economies but often face exclusion from housing, healthcare, and labour rights. Migrant workers in cities face discrimination, job insecurity, and restricted access to welfare. Women, children, and the elderly are especially vulnerable, struggling with healthcare, education, and safety. Urban crime and violence further marginalise these communities, reinforcing poverty and exclusion.

Tackling urban inequalities demand social protection, housing rights, and inclusive governance. Strengthening slum redevelopment, social safety nets, and livelihood programs is key to building equitable cities. Upholding the right to the city for all fosters inclusive urbanisation.

The COVID-19 crisis exposed their precarity, highlighting the need for inclusive urban policies. Seasonal and circular migration complicates governance, demanding coordinated rural-urban responses. Post-pandemic recovery underscores cities' economic resilience, yet employment remains uneven, with persistent gender gaps and urgent skilling needs. Inclusive policies are essential for equitable urban growth and job security.

Rapid urbanisation in India strains infrastructure, worsening housing, transport, water, and sanitation challenges. Poor planning leads to congestion, pollution, and inefficient services, disproportionately impacting low-income and migrant communities. Affordable housing remains a major challenge, with urban land markets often excluding the poor. Inadequate public transport forces reliance on informal transit, worsening congestion and pollution, while poor waste management and sanitation pose serious health risks.

Sustainable urbanisation demands investment in smart infrastructure, efficient transport, and resilient urban services. Climate-conscious planning, green buildings, and inclusive governance are essential for livability and sustainability. Governance shapes urban outcomes, but inefficiencies, weak decentralization, and limited institutional capacity hinder progress. National policies like Smart Cities Mission and PMAY address urban issues but face financial and political hurdles.

Strengthening municipal governance, fiscal autonomy, and participatory planning is key to building resilient cities. Future urban planning must anticipate digitalization, automation, and climate adaptation to keep cities competitive and inclusive. Exploring innovative governance and financing models can drive sustainable development.

A holistic approach integrating governance, economic equity, and sustainable infrastructure is crucial. This conference aims to foster discussions that shape policy solutions for just and sustainable urban futures.

Key issues for consideration under this theme include:

- The role of urbanisation in industrial development and economic transformation
- Informal labour markets and their impact on economic inequality
- Migration and its effects on urban labour supply and wage structures
- The rise of gig and platform-based employment in urban India
- The gendered dimensions of urban employment and workforce participation
- Housing affordability and policies for slum redevelopment
- Social protection and welfare policies for urban poor and migrants
- Crime, safety, and policing in marginalised urban neighbourhoods
- Policy challenges in integrating migrant workers into urban economies
- Climate change and displacement: implications for urban planning
- The role of remittances in urban and rural development
- The effectiveness of national urban policies in addressing urban challenges
- Financial mechanisms for sustainable urban development
- Public-private partnerships in urban infrastructure and service delivery
- The role of digital technology and smart cities in urban governance
- Disaster preparedness and urban resilience strategies

KEY NOTE ADDRESS

Measuring Sustainable Urban Development

Debolina Kundu

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The Sustainable Development Goals (SDGs), adopted under the 2030 Agenda, provide a comprehensive global framework for promoting development with the guiding principle of *“leaving no one behind.”* Among these, SDG 11: Sustainable Cities and Communities highlight the need to make cities and human settlements inclusive, safe, resilient, and sustainable.

Urbanisation presents both opportunities and challenges for sustainable development. Cities can drive economic growth, innovation, and social progress, yet unplanned urban expansion can strain infrastructure, exacerbate inequalities, and present environment risks. The challenge, therefore, is to manage urban growth in ways that enhance liveability while safeguarding ecological systems for future generations.

Linking urbanisation with sustainability requires creating cities that are resilient, resource-efficient, inclusive, and well-governed. Achieving this necessitates integrated urban planning, effective local governance, green infrastructure, sustainable transport systems, and equitable access to essential services.

A significant challenge for many countries is monitoring SDG progress at the city level. Limitations in urban data systems often hinder the generation of reliable, disaggregated data, making evidence-based policy and planning difficult. Strengthening urban data ecosystems and ensuring effective measurement are therefore essential to track progress and guide sustainable urban development over time.

Assessing SDG-11 Progress in Indian Cities: A Dual-Scale Framework Integrating Entropy-Based Indices and Slum Vulnerability Modelling

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Achieving the Sustainable Development Goals (SDGs) by 2030 requires systematic and granular urban-level evaluation frameworks, particularly for countries like India that face significant intra-urban disparities. While existing indices developed by NITI Aayog, the Ministry of Housing and Urban Affairs, and the Ola Mobility Institute assess cities across various domains—including overall SDG performance, livability, municipal efficiency, and mobility—they fall short of capturing city-level progress specific to SDG-11, which aims to make cities inclusive, safe, resilient, and sustainable. Addressing this critical gap, the present study constructs a dedicated SDG-11 index for India's ten most populous cities using the Shannon Entropy weighting method, ranking them across four thematic pillars: safety, inclusivity, sustainability, and resilience. Results indicate that Bengaluru ranks highest in safety, Ahmedabad in inclusivity, Surat in sustainability, and Chennai in resilience. To complement the macro assessment, a micro-level logistic regression model based on primary data from 611 slum households across six cities identifies structural determinants of economic vulnerability. Findings show that inadequate living conditions—particularly poor ventilation, lack of drainage, and insecure land tenure—significantly increase the likelihood of poverty among slum dwellers. This dual-scale approach exposes both inter-city disparities in SDG-11 outcomes and intra-city inequities in access to housing and basic services. The study presents a replicable, data-driven framework for monitoring SDG-11 in India and other developing economies, thereby informing more targeted urban planning and slum upgrading interventions. By linking macro-level policy goals with micro-level urban realities, the proposed model advances a scalable methodology for inclusive and resilient city governance.

Land Use Change and Forest Conservation in Assam: An Empirical Assessment for Sustainable Policy

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The paper investigates the relationship between land-use change and forest conservation in Assam, one of India's most biodiversity-rich states. Assam's forests are under increasing pressure from population growth, agricultural expansion, and competing land uses, leading to encroachment,

fragmentation, and shifts in forest composition. Moderately dense forests have declined, while very dense forests have shown marginal increases, indicating uneven patterns of forest change.

The study uses secondary data covering 15 years (2009–2024) from official sources such as the Statistical Handbook of Assam and the India State of Forest Report. A multiple linear regression model was employed to assess how two key land-use categories—fallow land and uncultivated land excluding fallow—affect reserved forest area. Correlation analysis revealed strong negative associations between reserved forest area and both fallow land and uncultivated land excluding fallow. The regression results showed that fallow land has a statistically significant negative effect on reserved forest area, while the effect of uncultivated land excluding fallow was positive but statistically insignificant. The model explained approximately 69% of the variation in reserved forest area, and diagnostic tests confirmed the robustness of the findings.

These results indicate that reductions in fallow land are closely associated with forest expansion, highlighting a clear trade-off between agricultural land and forest conservation. Persistent encroachment, involving nearly 200,000 households, and the continued decline in moderately dense forests further emphasize the urgency of adopting integrated land-use policies. Demographic factors, such as rapid population growth in districts like Dhubri and Morigaon, exacerbate land pressures, while sparsely populated districts such as Dimahasao and Kokrajhar retain greater potential for forest conservation.

The study underscores the need for sustainable land management strategies that address both ecological and socio-economic realities. Policy recommendations include the promotion of land restoration, agroforestry, and targeted afforestation programs, alongside stricter enforcement against encroachment. Furthermore, community participation and livelihood-oriented approaches are essential to align conservation goals with rural development needs.

Although the study provides robust evidence, it acknowledges certain limitations, including the reliance on aggregate time-series data and the exclusion of other potential drivers such as specific policy interventions. Future research should focus on district-level or spatially disaggregated data and incorporate additional socio-economic and ecological variables.

By linking land-use change to forest dynamics through a rigorous econometric approach, this study contributes to the literature on environmental economics and offers policy-relevant insights for balancing forest conservation with sustainable development in Assam.

Entropy-Based Analysis of Urban Sprawl Dynamics: A Case Study of Indore, India

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Multitemporal satellite images for the years 2001, 2011, and 2021 were processed using Google Earth Engine (GEE) and classified using supervised machine learning algorithms—Random Forest (RF) and Support Vector Machine (SVM). Classification accuracy was evaluated using standard metrics, including Overall Accuracy (OA) and Kappa Coefficient (κ), along with class-

wise Producer's and User's Accuracies. The RF classifier outperformed SVM in all three reference years, achieving OA values of 55.3%, 68.4%, and 80.0% for 2001, 2011, and 2021 respectively, with corresponding κ values of 0.440, 0.615, and 0.751. Based on these results, the RF-based classified maps were used for further analysis.

Shannon Entropy was applied to measure the degree of urban sprawl at the municipal ward level. The analysis revealed a consistent increase in entropy values over the two decades, indicating a more dispersed and fragmented urban growth pattern. In 2001, the majority of the wards exhibited relatively compact development. However, by 2021, high entropy values (above the threshold of 0.5) were observed in several peripheral and intermediate wards, signalling significant urban sprawl and expansion of built-up areas into previously open and agricultural lands.

Mapping Circular Economy and Solid Waste Management Research in BRICS: A Bibliometric Review

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Circular Economy (CE) and Solid Waste Management (SWM) are increasingly recognized as complementary frameworks for achieving resource efficiency and sustainable urban development. While countries in the Global North have institutionalized CE principles in waste governance, BRICS nations—Brazil, Russia, India, China, and South Africa—are still developing the policy, institutional, and technological capacity to mainstream circular practices. Understanding the scope, trends, and gaps in CE–SWM research within BRICS is essential for fostering innovation, policy alignment, and cross-country collaboration.

This study conducted a systematic bibliometric review of CE–SWM literature from 1997 to 2024, using the Scopus database. The search strategy combined relevant keywords, country filters, document type restrictions, and publication year limits, resulting in an initial dataset of 4,734 publications. After data cleaning to remove duplicates, irrelevant works, and incomplete records, the final dataset was analyzed using VOSviewer and Bibliometrix to visualize keyword co-occurrence, citation networks, and institutional collaborations. Descriptive statistics and trend analysis were performed in Microsoft Excel.

China (1,652 publications) and India (1,557) lead CE–SWM research in BRICS, with Brazil, Russia, and South Africa contributing smaller shares. Four thematic clusters dominate: (1) governance, policy, and sustainability; (2) biological waste valorization; (3) technical and chemical waste treatment; and (4) environmental–public health linkages. Collaboration networks show high intra-national linkages and limited multilateral engagement. The research landscape is heavily skewed toward engineering and technology, with fewer interdisciplinary studies integrating policy, economics, and social sciences.

Despite rapid growth, CE–SWM research in BRICS lags behind the Global North in thematic integration, cross-country collaboration, and policy-to-practice translation. Strengthening interdisciplinary approaches, fostering South–South and South–North partnerships, and scaling pilot innovations through coordinated governance frameworks are essential to accelerate the transition toward circular waste systems. This review provides a strategic knowledge base for academics, policymakers, and practitioners to guide CE–SWM implementation in emerging economies.

The Role of Remittances for the Rural Transformation in India's Migrating Villages: The Study of Selected Districts from Uttar Pradesh, Bihar and Rajasthan

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In the context of global migration in rural North India, Gulf migration is a socioeconomic and cultural phenomenon. Under the framework of the Sustainable Development Goals, the aim of this research article is to determine the causes, effects, and process of Gulf migration in rural north India. The methodology of the research paper is based on multiple round field surveys in purposively selected North Indian states- Uttar Pradesh, Bihar and Rajasthan from 2023 to 2024. Qualitative data is collected through ethnographic technique under the saturation stage of information among 1500 return migrant labourers. Collected primary data is analyzed using narratives, descriptions, and case studies. The findings of the study show that the function of migration is being reflected in the form of the socio-economic and cultural impact of Gulf migration on migrants' households in the periphery of the nexus of Hindi-Arabic culture by the cultural function of migration with its contradiction, discrimination and challenges of migration. Therefore, the present research paper encourages researchers and policymakers to further research in this area with an innovative approach as an aspect of the cultural enlargement of Gulf diaspora under the vision of Viksit Bharat@2047. Using a mixed method approach to study design, the research paper's methodology is based on empirical field surveys conducted in rural North India to gather primary data. According to the push and pull factors of migration, the results of the primary data indicate a relationship between internal and international migration, with internal movement driving international migration. According to these viewpoints, the socioeconomic standing of migrant households improved because of the Gulf migration, demonstrating its influence. The main aim of the study is to examine the impact of migration on migrants' families, education, health and overall quality of life in migrating areas. The paper will also make a concerted effort to study the conditions of women. In addition, Gulf migration served to further the United Nations' sustainable development objectives (SDGs). Consequently, it would motivate scholars, researchers, and policymakers to conduct additional research in the field of migration studies.

Rethinking New Urbanism: A Framework for Metropolitan Development and Policy Implications

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The responses to neoliberal urbanism and social inequalities comprehensively outline ‘new urbanism.’ The outline attracts urban practitioners to explore the idea and dimensions of ‘new urbanism’ for social well-being and urban development perspectives through the lens of liveability. It is an all-inclusive paradigm of human development and community well-being. The prerequisite for liveability is the ability to inhabit a definite physical space with real-world preparedness to social and environmental extents as a part of communities’ way of life, i.e., ‘urbanism.’

The rapid pace of urbanization tremendously impacts global south urbanism, specifically its liveability quotient. Based on the UN-Habitat’s projection, African and Asian cities will host more than half the global population by 2050. The rising pace of urbanization, its associated economic development, and its detrimental pressure on urban liveability in terms of infrastructure decay, environmental degradation, and poverty, try to explore the role of cities and their extended regions precisely based on the quality of urbanism. So, the research attempts to initiate a framework for identifying the significant components of liveable urbanism.

This research aims to develop a framework for identifying the key components driven by the liveability of new urbanism. The Kolkata Urban Agglomeration (KUA) was selected as a case study due to its unique blend of colonial and post-colonial heritage, resulting in considerable multicultural variations across physical, socio-economic, and socio-cultural dimensions. These variations contribute to a mosaic of sub-regional urban governance capacities and systems, warranting a multicultural research framework to examine the equitable distribution of liveable urbanism within a metropolitan context from the perspective of the Global South.

Women’s Unpaid Work: Rural vs Urban Influence

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The study of the gender equality or women empowerment which is the 5th goal of for sustainable future always mentioned about the deep-rooted patriarchy which automatically gave male members the upper hand in every situation. But they have also given the responsibility of bread-earner, as they can perform it by doing outside works, because of their masculinity. On the other hand, women are given a safer environment that is household to perform the remaining chores. The work performed by them are done with less risk, easy and non-remunerative. That is the reason why they are given the secondary position in the society. But with the time things have become stigmatized and that have been adversely affecting women now-a-days. For which now we are in a need to empower women and words like gender equality are becoming sensation.

Authors have tried to value the women's unpaid work here, by using different methodologies given in literatures and tried to compare the values in rural urban context. From this study we can see that how availability of different services in the urban areas help in reducing the time required to perform the unpaid household work of women which ultimately shown in higher educational achievements and higher workforce participation in urban area that will contribute in women empowerment as well as in gender-equality in long run.

Authors have also categorized women in different groups and tried to compare the value of women's work (which is directly proportional to the time required to perform the unpaid work) across the social and financial categories. Again, here we have tried to link the U- curve hypothesis that represents the relation between women's workforce participation rate and income of the family.

Digitalizing Urban Health: The Role of Public Service Platforms in Advancing Wellbeing

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Urbanization comes with dual burden: it promotes infrastructural development and economic opportunities, on the other hand exacerbating public health issues particularly in fast growing cities. The study focuses on rapidly expanding city, Tirupati in Andhra Pradesh poses issues such as sanitation and healthcare management questioning sustainable development. This study explores how digitalization of public healthcare systems and their delivery mechanisms contribute to health equity, improved well-being and resilience in urban areas to achieve SDG3. The study evaluates the role of digital public service mechanisms in improving urban health outcomes and digital platforms to monitor healthcare and sanitation in Tirupati. The study employs a Case Study Research Design with a qualitative framework and secondary data triangulation enabling the understanding of implementation, effectiveness and limitation of these service deliveries. Thematic analysis is employed to identify recurring patterns from interviews which yielded themes such as accessibility, efficiency, responsiveness and challenges. Findings from the study suggest that digitalization has improved tracking of urban sanitation, real-time redressal of health complaints and services, monitoring of health schemes. However, challenges persist in digital literacy and accessibility among slum population, and integration across other departments. In conclusion, the digital platforms show potential in enhancing wellbeing and urban health governance but require parallel efforts in inclusion and awareness-building. Aligning these efforts with effectiveness paradigms to SDG3 and urban development.

Terrain, Scale, and Efficiency: A DEA Study of Uttarakhand's Distribution Utilities

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Once a power surplus state due to its abundant hydropower, Uttarakhand has now become an electricity-deficient state, hence becoming more and more dependent on expensive imports from the grid and power exchanges. The electricity demand is rising as a result of both Urbanisation and Climate Change. Around 60 percent of the consumers reside in rural areas, and the remaining 40% in urban centers. Concentrated residential, commercial, and industrial activities are responsible for high per capita consumption in urban areas. Climate change adds to this trend, rising temperature and more frequent heatwaves are contributing more to peak loads, rising summer peak demand from 2,635 MW in 2023-24 to 2,863 MW in 2024-25, showing an 8.7% increase from the previous year, while growth for the year 2022-23 is only 1.6%. For the year 2025-26, the growth is forecasted at 7.3% over the previous year's summer peak demand. Given both the urban-rural divide and terrain-driven challenges (hilly vs. plain areas), a rigorous efficiency assessment is essential to ensure sustainable, equitable distribution of electricity under intensifying demand pressures. This makes Data Envelopment Analysis (DEA) a timely and policy-relevant tool for benchmarking divisional performance in Uttarakhand.

The study assesses the effectiveness of Uttarakhand's power distribution sector using the DEA, which is a non-parametric method. DEA enables benchmarking without making any assumption about the production function. The model uses input and output used in prior work on Uttarakhand's distribution utilities; five outputs are chosen, namely number of consumers, sanctioned load, energy sold, revenue collected, and transformer capacity, and two inputs for the study, namely number of employees and operations & maintenance expenditure. Annual data from Uttarakhand Power Corporation Limited (UPCL) and the Uttarakhand Electricity Regulatory Commission (UERC) were sourced for the analysis. We have used input-oriented DEA by using both CCR (constant returns to scale) and BCC (variable returns to scale) models. We include additional variables such as AT&C (Aggregate Technical and Commercial) losses and reliability indices (SAIDI/SAIFI), treated as undesirable outputs, to provide a more comprehensive assessment of service quality. Robustness checks include Slack-Based Measure (SBM) analysis to identify precise input excesses and output shortfalls.

Urbanization, Lifestyle Change and Sustainability Challenges: A Case Study of Bhutan foothills in Lower Assam

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Urbanization is a process that has been seen as a marker of development and progress, which can induce transformation in every aspect of human society. Historically, with accelerated increase in population, combined with advancement in technology, societies changed and became more complex. This paper addresses the issues and concerns associated with the process of urbanization to hypothesize that urbanization is unavoidable, given the contemporary context of technological advancement and global connectivity. The idea is that change in local or regional transformation induced by the process of urbanization has implications for sustainability, particularly at the community level, especially if not planned by taking the local ecosystems into consideration.

This paper is a case study of the Bhutan foothills in Western Assam, which is also known as part of lower Assam in the north bank of the river Brahmaputra. The area is marked with the coming into place of the Bodoland Territorial Council (BTC) in 1993, after a prolonged political movement for the protection, preservation and conservation of the indigenous ‘tribal’ culture and rights under the provision of the Sixth Schedule of Indian Constitution. The aspect of local ecology in this particular area is intricately connected with the local communities/peoples and cannot be understood in isolation. In the context of preservation of the regional ecology in the eastern Himalayas, how the urbanization process has played a significant role remains understudied, particularly in the context of the larger political economy of Assam. The vast ecological diversity of this region transcends national boundaries, especially if we look at the north-West and South-West sides of the state – Bhutan on one side and Bangladesh on the other side respectively, both bearing effect on the local ecosystems of the region.

The paper delineates the multitudinal impacts and patterns in the cycles of urbanization process in the region by focusing on two important variables – 1) ecological diversity and fragility and 2) demographical diversity and complexity. The paper is interdisciplinary in its approach, with an analytical and conceptual framework based on the disciplinary premises of historical and environmental studies. Accordingly, the time period taken into account is from the time of India’s independence to the present.

Rapid Urbanisation, the Promising Outcomes of Sustainable Development Goals, and the State of Social Development among Social Groups in Goa: A Critical Review

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Goa, a state characterised by its diverse social profile and a positive outlook on global tourism, has achieved the highest ranking in the national-level Human Development Index (HDI) and maintains the highest per capita income among all Indian states. According to NITI Aayog's Sustainable Development Goals (SDG) Index (2023–24), Goa has been classified as a frontrunner in achieving the sustainable development goals, taking fourth place among all Indian states. The report also reveals that Goa has achieved the national target of 100% access to basic infrastructure, which includes electricity and drinking water, with no urban households living in kutcha houses. Over the past decades, the development plans of the Government of Goa (GOG) have been based on various regional plans and strategies, strongly emphasising tourism and urban-centric infrastructure development. This background outlines the developmental trends in Goa that have resulted in rapid urbanisation and a demographic shift from rural to urban areas. In contrast, some grassroots organisations, local newspapers, and media outlets have consistently reported on these plans, often highlighting concerns about their potential negative impacts on Goa's environment and traditional communities. Their coverage often focuses on issues like land conversions, infrastructure projects, redefining the geographical areas of village panchayats, and the potential displacement of local populations. In light of this reality, the GoG remains committed to formulating and implementing various development initiatives to improve the status of social development indicators among the people of Goa. However, there is no definitive information regarding the state of social development among the various social groups residing in Goa, nor about how effective the GoG's development initiatives are at improving the status of social development indicators for these groups. For this answer, the paper will examine the term «social development» that is directly linked to indicators such as health, education, employment, rights and entitlements, and participation. Similarly, the paper will seek to explore and understand the relationship between developmental trends (based on rapid urbanisation and the attainment of sustainable development goals) and the state of social development in Goa. It will also aim to critically describe and contextualise the social development patterns that exist among these groups specifically and across Goa as a whole. The paper will be based on a content analysis of the existing secondary sources and literature available on this subject.

Nudging India Toward Circularity: Behavioural Insights, Informal Sector Dynamics, and Sustainable Solutions

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The transition to a circular economy (CE) is increasingly considered an essential pathway to sustainable development, particularly in developing economies like India. While infrastructural improvements, technological innovations, and regulatory frameworks are frequently emphasized in public discourse and policy design, circularity's behavioural and social underpinnings have been comparatively neglected. Behavioural economics, which examines how psychological, cognitive, emotional, social, and cultural factors shape economic decisions, offers critical insights into why circular practices—such as recycling, reuse, repair, and refurbishment—struggle to gain traction in India, despite clear economic and environmental benefits. This paper aims to investigate the behavioural barriers impeding India's transition to a circular economy, focusing on the free rider problem, status anxiety linked to second-hand goods, cognitive overload, habitual consumption, loss aversion, and the marginalization of the informal recycling sector. The paper uses secondary data, empirical studies, and case analyses to explore successful behavioural interventions, such as gamification, nudge strategies, celebrity endorsements, and cooperative waste management models. The paper draws on flagship examples, including Recykal's waste-for-cash platform, SWaCH's cooperative of waste pickers, and the rising impact of influencer marketing on promoting sustainable consumption. The research concludes with comprehensive policy recommendations to align economic incentives, social norms, and behavioural motivations toward sustainability goals. It argues that India's CE agenda must move beyond technological fixes and integrate behavioural and institutional reforms, particularly concerning the informal sector, which plays a critical but often invisible role in India's recycling ecosystem. Without addressing behavioural barriers, India's circular ambitions will remain constrained, risking ecological and social harm.

Sustainable Tourism and the Environmental-Cultural Nexus in Santiniketan, West Bengal

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Tourism, in its true sense, considers both the present and future social, economic, and environmental impacts while understanding the needs of tourists. Since the tourism sector is one of the fastest-growing industries in the world, the responsibility to preserve and restore environmental sustainability and cultural diversity is obvious. The prominent tourism discourse on how a destination can

become sustainable through responsible practice calls for a proper understanding of the process of achieving sustainability. A diversified country like India, with landscapes ranging from the lofty Himalayas to the vast coastal stretches, can promote tourism opportunities sustainably. Eco-tourism offers a unique synergy between preserving natural resources and providing opportunities for the local communities. In India, the Ministry of Tourism has formulated a National Strategy for Sustainable Tourism to mainstream sustainability in the tourism sector, thus ensuring resilient and resource-efficient tourism while safeguarding environmental and cultural assets. Sustainable tourism enables tourists to have a natural holiday experience while enjoying and respecting the local culture and cuisine. The ecological and cultural assets are exploited in a sustainable manner that can reverse the negative impacts of tourism. Sustainable and Responsible Tourism has gained importance since it emphasizes the involvement of the local community in decision-making and encourages them to participate in the tourism industry. Eco-tourism ventures can be considered as one of the best examples of sustainable tourism. In West Bengal, Sustainable Tourism ventures have been initiated in the northern districts, mainly in Darjeeling, Jalpaiguri, and Coochbehar, as well as in the southern parts of Bengal, particularly in the Sunderbans, Jhargram, and Purulia. New ventures along the line had been initiated in Birbhum and Bankura, predominantly in the last decade. Given this backdrop, the current study investigated the initiatives taken by the resort/homestay owners in Santiniketan, Birbhum district, and the response of the visitors to the new and sustainable initiative. Further, the study tried to understand the involvement of the local population. Primary data has been collected through in-depth interviews with the respondents (Hotel owners/ managers, tourists, and local communities) with their prior consent. Secondary data includes library work, scholarly articles, and related readings. The paper finally proposes a three-stage *Sensitization, Planning, and Implementation (SPI) model* (inspired by the works of Mihilac) to promote new ventures in this sector along the lines of sustainability to promote ethical tourism. The studied units reflect eco-tourism through the development of *farmstead* tourism, initiation of *food forest*, preservation of the natural habitat, and involvement of local communities, which can further improve the economic condition of these people. Proper assimilation of social and cultural practices of the local communities and the indigenous population among the offered facilities has attracted many tourists to these eco-stays.

An Analysis of Gender Inequality in Household Expenditure on Higher Education: The Case of Odisha

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To reap the benefits of demographic dividend, investing in human capital through quality education is crucial. Quality education enhances employability and has a high rate of return, making it a valuable investment. However, the high demand for quality education often results in high fees, even in

government provided institutions such as medical education, where the fixed cost is substantial. In a patriarchal society, high fees can create disincentives for investing in girl's education, particularly in the fields with high cost. This can lead to lower enrolment rates for girls in expensive educational institutions. With this view, this study aimed to examine gender discrimination in household expenditure on higher education in Odisha, exploring the underlying reasons for such differences. Using unit level data from National Sample Survey of 75th round (2017-18), the study employs a decomposition method to quantify the extent of parental bias in educational expenditure. MPCE quartile, social category, region, type of course and type of provider etc. are the variables used in the analysis. The study found that household behaviour towards spending on their children's education is reflecting a discriminatory attitude. The participation of girls is found to be lower in technical/professional education and also in private educational institutions, compared to their male counterparts. The higher enrolment of girls in government institutions may lead to inferior learning outcomes, which in turn leads to male-female human capital gap and thereby reinforcing gender bias in labour market. Thus, policies are needed to address these issues through promoting accessible quality education, that way we can think about reducing gender disparities and reaping the benefits of demographic dividend.

Mangrove Ethnoscape to Metro: A Case Study on Peri-Urban Aspirations and the Identity Crisis in the Indian Sundarbans

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The study argues, Sundarbans are not merely a geographical location—they are a living ethnoscape shaped by centuries of mangrove-based knowledge, survival strategies, and cultural practices but in contemporary period, some blocks of Sundarban region manifest the features of “rurbanity”—an ambiguous blend of rural grounding and metropolitan desire, and the inhabitants stand into: i. the erosion of traditional ecological knowledge and habits; ii. Decreasing the psychological and social linkages to mangrove heritage with Sundarbans' geography. But the Dampier-Hodges Line drawn the territory in West Bengal, the home of communities belongs in common anthropomorphic live-methodology, ethnic identities, and indigenous belief systems.

The critical issue addressed the emergent stigma and identity crisis, highlighting the unsynchronized shift from community-based ethnic livelihoods to peri-urban ambitions among the Sundarbans population. They are making a crisis and risk about ‘the zone of sundarbans’ becoming culturally alienated and environmentally non-Sundarban ecological. This research aims: i) To investigate how peri-urbanization is shaping; ii) To analyze the socio-cultural and psychological dimensions of the identity crisis among communities along the Dampier-Hodges Line; iii) To examine the nature and consequences of “rurban” transitions; iv) To explore sustainable and culturally sensitive models of development that allow to demarcate the map of urban aspirational

growth. The hypotheses formulated are: a) increasing detachment from mangrove-oriented live-methodology, which leads to both ecological and socio-cultural identity crises. b) Communities along the Dampier-Hodges Line are experiencing a dual marginalization—geographical (from the mainland) and symbolic (from their ecological-cultural origins) may uplift in urban culture or non-sundarban culture. The study employs a qualitative case study approach, focused on a comparative ethnographic exploration across 15 blocks—Basanti, Gosaba, Jaynagar I & II, Patharpratima, Kakdwip, Namkhana, Sagardwip, Kultali, Mathurapur I & II, Hingalganj, Hasnabad, and Canning I & II. Methods include a) Participant Observation through extended stays in these blocks observing everyday routines, and ritual behaviour; b) In-depth Interviews with three generations (elders, working-age adults, youth) to track intergenerational changes in identity perception; c) Focus Group Discussions (FGDs) with women's collectives, local teachers, youth groups; d) Spatial Mapping through charting transformations in housing patterns, infrastructure, and public spaces across the Dampier-Hodges Line; e) Archival Research for analysing of colonial-era records, environmental reports, development plans, and census data; f) Fieldwork is conducting over a 27th-month period between 2023 and 2025, enabling the collection of event-based data. Key Findings are i) Cultural Detachment from Folk songs, stories, and rituals associated with mangrove deities to local ecology; ii) Ecological community-centric cultural erosion through Youth aspire to become metro; iii) Gendered Displacement. This research contributes to: a) Interdisciplinary Discourse by bridging ecological anthropology, urban studies, and cultural geography, etc; b) Cultural Regeneration Policies; c) Hybrid Livelihood Models; d) provide an integrative model to analyse peri-urban transformations; e) post-colonial re-modulation of Sundarban studies. The shift to metro-centric aspirations is not inherently negative, but this results in a crisis of ontological insecurity of real ecological sundarbans, whereby people no longer know, how they are in relation to their changing environment.

Urban Sustainability: Economics and Ecosystem Services

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Urban areas imply more of built-up area, a departure from the natural environment, something that the human beings inherit from the Mother Earth. Due to human activities, there are some stresses on the Nature, which are irreversible, and the human being has to bear the effects of that. Climate change is a much-discussed issue, which hampers the sustainability of the planet itself. As we move away from the nature and depend more and more on the amenities provided by the urban local bodies and other institutions, we tend to forget the role of nature in our life. The urban people despise any extremities of nature, heat, rain or cold. They use more and more air-conditioners and increase the temperature. Large, gated communities increase the use of groundwater without any plan for groundwater recharge. Waterbodies and vacant plots are used for throwing garbage. The ecologically vulnerable areas are facing more crisis as in different parts of the mighty Himalayas.

In urban areas, it has become a common norm to decide about its use in terms of land value. We are more interested in the economics of urban land rather than any other consideration. We tend to forget, rather we neglect what we get from the open spaces and waterbodies in an urban setup. These two components of urban areas, as separated from the built-up areas are continuously and silently serving us through their ecological configuration and biodiversity. It is essential that at least thirty per cent of any urban area is to be under organised open spaces – greens and waterbodies. And it is the duty of the concerned ULB and other relevant authorities and of course, the government to maintain the existing green spaces and waterbodies and if possible, to expand organised green space.

Unfortunately, putting more importance to the economic value of land is jeopardising the existence of the green open spaces and waterbodies in big cities. The recent experience of Kolkata is an alarming example. The Alipore Zoological Garden (opened in 1876) and the Ravindra Sarovar (a lake created by the Calcutta Improvement Trust in the thirties of the last century) are under threat from encroachment and bigger plans to monetise the land.

Intersecting Inequalities in India's Service Sector: Gender, Caste, and Regional Disparities from PLFS (2022-23)

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The revolutionary change of economic development in post-independent India undergoes through a significant shift from traditional sector to tertiary sector. While the primary or traditional sector historically played a dominant role in GDP generation, the tertiary sector has emerged as the principal contributor to economic growth in the recent years, evidently half of the total GDP is contributed by the tertiary sector. Indian economy is characterized with exorbitance of population, high unemployment rate, more unequal distribution of wealth and income; despite of having these issues, Indian economy can still manage to be opulent because of its huge labour force. A burgeoning population can serve as a valuable asset, contributing to a robust labour force and fostering the growth of labour-intensive industries. However, unchecked population growth can also exert considerable strain on societal resources, resulting in sluggish economic progress. Most part of the working labour force is absorbed in the primary sector, while the rest of the other settle down in the secondary and tertiary sector or service sector. The advancement of information technology, telecommunications, healthcare, retail, education, entertainment media, financing, trade and hospitality collectively constitutes the service sector, that became a significant catalyst for economic development in any nation. The most welcoming growth of these sectors in India has presented a plethora of new employment avenues for both genders, but at the side, it has also brought to the fore substantial gender dynamics and disparities deeply rooted with Indian socio-economic culture. India, being a secular nation is the prefecture of all caste, creed, traditions and cultures, each part of the nation posits various cultures and norms, for example, in Northern region, patriarchal structures often prevail, with women expected to prioritize domestic

duties, while conservative views on women's roles and freedoms persist, particularly in rural areas. Child marriage and dowry remain challenges. Conversely, some Northeast Indian tribes boast matrilineal traditions and significant female leadership roles, though social norms vary widely across communities. Eastern region emphasizes women's education and economic participation, while acknowledging persistent issues like domestic violence. Western region showcases diverse norms with varying levels of women's economic participation and evolving attitudes towards gender roles. Southern region generally boasts higher female literacy and a strong history of women's movements. Central region of India, predominantly rural, faces challenges like child marriage and limited access to education and healthcare for women, albeit with a gradual shift towards greater awareness of women's rights. Going down the huge tapestry of the cultures, it is observed that Indian women from various regions often face restrictions in our society, their history, traditions, cultural differences often create barriers regarding their decisions to take part into the service sector. This study analyses gender composition and regional disparities in India's service sector using PLFS 2022–23 data. It focuses on gender-disaggregated employment and wage gaps in salaried and self-employed work, highlighting barriers such as skills shortages, socio-cultural norms, and limited leadership opportunities for women. The analysis is divided into two parts: first, a descriptive account of disparities across five regions—Northern, Eastern, Western, Southern, and Sister States—considering factors like education, caste, religion, age, marital status, and rural-urban divide. Second, a regression analysis tests whether these variables determine participation in the service sector, with a focus on gender differences. Logistic regression and Blinder-Oaxaca decomposition are applied to examine how endowment, coefficients, and interaction effects contribute to the observed gender gap.

The Intertwining of SEZs and Urbanization

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This paper taking the reference of select conventional SEZs explores how far SEZ has altered urban space. This has been undertaken through the lens of GIS. Currently SEZs policy has completed two decades of its operation and over the years numerous studies have taken place to evaluate the policy and performance from various angle. Meanwhile, over the last two decades, the landscape of trade and business, has changed significantly world over along with emergence of urbanization and environmental issue as a spillover effect of having SEZs. The period has also seen many developing countries attempting to emulate two Asian Giants footprint by proposing similar policies as a part of their trade openness. Thus, any fresh evidence on how far SEZs policy stood the test of time in terms of its spillover effect on urbanization, which itself is very less researched in the Indian context, is need of the hour. Besides this, it will serve as checklists for many developing countries who are in the path of emulating two Asian Giants footprint in trade promotion.

There are various ways of capturing multidimensional nature of urbanization— it's not just a demographic and topographic reorganisation, but also a socio-economic and cultural reorganisation across space and time. However, in this paper we explore the spatial dynamics and urban development patterns in and around the SEZ through the lens of GIS. As aptly argued in the literature the usage of GIS can help to solve issues of urban planning and development through providing accurate maps. Also, it ensures more evenly spread urban development to accommodate growing urban populations without pressurising natural resources and infrastructure. GIS mapping can also help better coordinate activities between different government authorities through providing accurate data on extent of LULC due to urban sprawl, helping them to formulate policies and action plans for a more sustained development in the long term (Tiwary, 2013). In the context of SEZs, GIS can be used to develop more sustainable SEZs in the future through identifying ecologically sensitive or agricultural areas and formulating policies that ensure least disturbance to these areas, or to develop vacant land into vegetative or forest cover (Singh and Biswas, 2022). However, studies employing GIS in SEZs are few, especially outside China. Thus, this paper makes one such pioneering attempt to capture the urbanization traces through GIS mapping and pave the way for future work. The empirics with respect to relation between SEZ and urbanization is studied through the lens of GIS.

Currently, in India there are 280 operational SEZs in the country. Seven of them converted from erstwhile EPZs and all other came into existence at different point of time in the last 25 years. The present study considers all those seven conventional SEZs - includes Kandla, Santacruz, Cochin, Chennai, Falta, Noida and Vizag. Except Kandla (1963-64) and Santacruz (1973-74) all other EPZs were set up in 1985-86. Thus, for uniformity we gathered GIS data post 1986. Total we have three points of data collection. The first period serves as baseline, the second period as midpoint also depict shift in policy trajectory from EPZs to SEZs and for the latest available year. This helps us to locate how far policy shift transmitted urban sprawling. Among other the study will identify Land use landcover change (LULC) – within a range of 5, 10 and 20 kms range to see the change, trend and its implications (agriculture to build up area, decline in water bodies, forest, if any and so on).

Findings of the study reveal substantial decrease in area under agriculture in the select SEZs and corresponding increase in built-up area along with changes in area under water bodies among others. In the Indian context, given the size and expansion of SEZs in India if uncontrolled, this could have long term implications in terms of loss of biodiversity and resources, contributing to advancing climate change and compromising some of the fundamental sustainable development goal. Thus, it is need of the hour that policymakers across the globe to take proactively GIS as an effective tool to do periodic larger economic audit of SEZs projects that are currently operational. As the LULC data can help authorities prevent unchecked growth of built-up areas at the expense of green cover, reduce pollution to surrounding areas and encourage better resource management.

Consumption Expenditure Pattern and the Role of PDS: A Study of Bihar and Kerala

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India has experienced significant economic growth over the past two decades, leading to shifts in food and non-food consumption patterns. These shifts are essential for assessing poverty levels, consumption expenditures, and their implications for economic well-being. This study aims to analyze consumption patterns at a disaggregated level, addressing key questions related to differences in spending between poor and non-poor households, shifts in consumption behavior, and the applicability of Engel's Law. The role of the Public Distribution System (PDS) in supporting the poor is also examined. Using data from NSS Consumption Expenditure Surveys (CES) from 1993-94, 2004-05, and 2011-12, the study employs tabular and graphical analysis to examine trends in food security and expenditure patterns. Empirical evidence suggests a decline in food expenditure over time, with an increasing share allocated to non-food items, reflecting income inequality. While urban households exhibit higher inequality, rural areas still show a higher proportion of food expenditure, especially on cereals among the poor. The findings also highlight the role of PDS subsidies in poverty reduction, particularly in Bihar. The results underscore the need for targeted anti-poverty policies and improved governance in PDS to enhance food security and economic inclusion in India.

From Sacred Lands to Solar Panels: Political Dimensions of Sustainable Development in Singraur Uparhar

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Singraur Uparhar, a village situated along the banks of the Ganga near Prayagraj in Uttar Pradesh, represents an evolving paradigm of rural transformation where cultural heritage and modern sustainability imperatives intersect. Historically significant for its association with *Ramayana* narratives—believed to be part of Lord Rama's exile route—the village has long been a site of religious tourism and spiritual identity. In recent years, it has been declared a “Model Solar Village” by the Government of Uttar Pradesh, marking a decisive shift toward renewable energy-driven development. This transformation offers a unique vantage point to examine the political dimensions of sustainable development in a culturally embedded rural context.

This study situates Singraur Uparhar within the broader theoretical frameworks of political ecology and sustainable governance, exploring how state-led initiatives, institutional mechanisms, and cultural symbolism interact to shape development outcomes. The central intervention—

the installation of solar panels on all residential and institutional structures—emerges as both a technical and political act, aligning with India’s renewable energy targets while reinforcing the state’s developmental legitimacy. The analysis underscores the “triple bottom line” framework—People, Planet, and Prosperity—as mediated by political decision-making, power relations, and governance models.

The research reveals that the state’s political agenda, particularly in promoting green energy in heritage-rich locations, is strategically framed to mobilize public support, attract investment, and enhance the cultural-tourism economy. Investments amounting to approximately ₹140 crore, directed toward tourism infrastructure, road connectivity, and civic amenities, signify the political prioritisation of Singraur Uparhar as a showcase of integrated development. However, the study also highlights tensions between top-down planning and local agency: while solar infrastructure promises environmental benefits and reduced dependency on non-renewable sources, questions of equity, maintenance responsibility, and community participation remain critical.

Methodologically, the paper draws upon field interviews, policy document analysis, and observational data to unpack how local governance bodies, state agencies, and private contractors interact in implementing sustainable infrastructure projects. It further examines how heritage narratives are politically leveraged to position the village as a model for rural-urban interface development, simultaneously preserving cultural capital and introducing green technologies.

In conclusion, Singraur Uparhar’s trajectory from “sacred land” to “solar village” illustrates the complex entanglement of political will, environmental imperatives, and cultural heritage in shaping sustainable development pathways. The case highlights that sustainability in such contexts is not merely a technical outcome but a politically negotiated process—one that balances symbolic legitimacy, developmental performance, and ecological responsibility. As India moves toward its national goals for renewable energy and sustainable rural transformation, the lessons from Singraur Uparhar provide valuable insights into the political underpinnings of the green transition in culturally significant landscapes.

Reviewing the Rural Development and Urbanization Trends in India

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Over time, a significant share of the population in India continues to migrate to urban areas in search of better lifestyles, employment opportunities, and access to education and healthcare. This traditional urban-centric migration results in deepening challenges such as overcrowded slums, overburdened infrastructure, rising pollution, socio-economic inequality, rising unemployment, and environmental degradation. But is there any concept of balancing urbanization by developing rural areas as a strategy for sustainable development in India?

The answer to this is Ruralization. Ruralization is the process of reviving, strengthening, transforming, and adopting development in rural areas, responding to problems in urban areas raised due to migration, like urban overcrowding, inequality, and environmental stress. This paper explores the concept of ruralization as a strategic and sustainable counterbalance to over-urbanization. Regarding initiatives like PURA, the Rurban mission, and the smart village program, we investigate how empowering rural regions can help reduce pressure on urban cities while ensuring inclusive and regionally balanced and sustainable development. The objective is to fill that gap by framing ruralization not as an alternative to urbanization, but as an essential pillar of sustainable development in India.

Despite extensive studies on urbanization and rural development in India, limited research work focuses on integrating rural revitalization (“ruralization”) as a strategic alternative to conventional urban-centric development models. To address this, the paper begins by reviewing key literature on urbanization, rural development, and sustainability. It will then define the conceptual and theoretical policy frameworks that support the argument, followed by an analysis of national policy data that have already been made for the development of rural areas. A comparative data analysis between urban and rural development models will highlight the tangible benefits of investing in rural transformation. And at last, the paper will conclude with evidence-based policy recommendations for fostering a development model that is decentralized, inclusive, and environmentally resilient.

Quality of Work Life of Commercial Drivers in the Informal Transport Sector: A Study of Shillong City, Meghalaya

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The work life of an individual plays a significant role in one’s total life. Almost every individual is involved in work in one way or another, which signifies its importance; hence its interactive relationship with personal well-being cannot be ignored as it can have an impact on the well-being of an individual. One concept that addresses this is the Quality of Work Life (QWL). It is a multifaceted concept which includes multiple dimensions which can reflect the overall well-being of workers. An enhanced Quality of Work Life is expected to lead to improvement in productivity and may positively contribute to better work-life and overall well-being. The purpose of this study is to evaluate the Quality of Work Life of Commercial drivers in the informal transport sector. Additionally, the study also intends to find the determinants of Quality of Work Life and furthermore, to examine if there is a significant difference between the type of employment of commercial drivers and the levels of Quality of Work Life achievements. A primary survey was employed in this study where data collection was done in Shillong city; there are two categories of commercial drivers (Gig and Non-Gig). It is a cross-sectional study and the sample consisted

of 450 respondents. To assess the Quality of Work Life, the Human Development Index (HDI) method was used to construct the QWL index. Regression analysis was employed to identify key predictors of QWL, while the chi-square test was used to examine the association between employment type and QWL levels. The findings reveal that only a small proportion of respondents i.e., 3.33% achieved very high QWL, whereas a large majority approximately 69.5% were found to have very low QWL and a substantial proportion of respondents achieved moderate and high QWL i.e., approximately 20.44% and 6.67% respectively. All the indicators included in the study were significant and positively influenced QWL. Additionally, a significant association was found between employment type and QWL.

Tourism Development, Capital Inflow and Pollution Tax in a Small Open Tourism Economy: A Theoretical Analysis

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We construct a theoretical framework for a small open economy comprising three interlinked sectors: agriculture, informal production, and tourism services. The agricultural sector utilizes land and labour as its primary resources, supplying intermediate inputs to the informal sector. The tourism sector depends on labour and specialized touristic capital, and its operations result in environmental pollution. To manage this pollution, the government imposes a pollution tax. Our analysis reveals several notable outcomes. An increase in foreign tourist arrivals boosts the price and output of tourism services while also intensifying environmental pollution. Although this expansion enhances national income, its overall effect on social welfare remains uncertain due to the environmental trade-offs involved. The inflow (or outflow) of touristic capital amplifies (reduces) both tourism production and environmental degradation. Additionally, raising (or lowering) the pollution tax leads to a decline (increase) in both emissions and tourism output. These results highlight the delicate balance between promoting tourism, protecting the environment, and maintaining economic well-being.

Urban Periphery – An Interdisciplinary Approach

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Urban expansion is intricately linked with prominent changes in the peripheral livelihood. With urbanisation and improvement in connectivity with the peripheral areas, a lot of labour movement is noticed from the periphery to the urban centres. On the one hand this leads to better earning possibilities of the people who daily travel to the urban counterpart and on the other hand there is a change in the occupational structure in the periphery itself. Both male and female workers travel to and from the peripheral areas to the urban centres in order to earn a livelihood. There are

cases where some workers might decide to stay in the urban centres for the ease of commuting to their work places. This paper mainly focuses on the daily movement of labour from the periphery to the centre who are a part of informal sector work. For example, there is a huge influx of male workers who travel to Kolkata by train from South 24 parganas and work as rickshaw pullers for the whole day. Female workers travel to Kolkata by train from the suburbs and mostly work as house helps / maids / cooks for the whole day. They do so in search of better pay compared to what they would earn in the periphery. This has a direct connection with female empowerment. A better income earning capability leads to decision –making powers of the female workers. In the process however the peripheral areas may face a dearth of workers in the long run and there will be noticeable change in the work force participation in the peripheral regions. This might also hamper the traditional occupation structure in the peripheries.

Problems of Hilly Migration and Unplanned Urban Agglomeration: Challenges and Opportunities for Uttarakhand Sustainable Development

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Hill areas in Uttarakhand have valuable natural resources and diverse biodiversity, which is imperative for environmental conservation. These areas significantly contribute to developing cultural and traditional values that are lived and dependent on them. Hill areas make a significant contribution to socio-environmental sustainability. Urban areas of the state make a valuable contribution to economic development by raising living standards and well-being in terms of employment and education, and facilitating basic amenities for better, sustainable living. Both Hilly and Urban centres contribute to sustainable development in distinct forms; in other words, both contribute to different goals of sustainable development.

Hilly and Urban cities of Uttarakhand face two major, distinct challenges. Rural and Hilly districts face two main categories of migration. Temporary migration is due to a lack of employment opportunities, and permanent migration is due to a lack of social and economic infrastructure. This migration has its own characteristics, where temporary migration from labour has a push factor for improving livelihood by working in urban centres. Permanent migration is forced migration driven by pull factor such as poor infrastructure, lack of basic amenities, vulnerable mountains structures reason of increase in disaster and inadequate health and educational institutions, which derives future prospects of living standard. as per 2011 census hill districts population growth rate lower than plain districts of Uttarakhand which witnessed the out migration toward main dominant urban centres such as Dehradun, Haridwar and Udham Singh Nagar and also interstate migration.

Urban centres drive economic growth and development of the region and nation, which is derived from modernisation and industrialisation. Urban districts of Uttarakhand face concentrated rapid unplanned urban agglomeration problems of migration, housing, slums, informal low-wage employment, over-tourism and sanitation. These causes adverse ecological imbalances, water

pollution, waterlogging, floods, and the problem of increasing population density, which has led to immense pressure and distress on urban infrastructure and natural resources. As per the 2011 census, the overall urbanisation rate in Uttarakhand is 30.2%, close to the national average of 31%. Uttarakhand consists of only 14% percent of plain areas, and changing land use policies, especially in semi-hilly areas, for raising urban centres, created negative externality and cost to the environment. Uttarakhand also faces frequent natural disasters in these areas, which is the main challenge in maintaining sustainable development.

The study explores and analyses the linkages of hilly migration problems and unplanned urban agglomeration in Uttarakhand and its challenges and opportunities. The study also describes and highlights the causes and consequences of these challenges and explores development programmes, policy priorities, and approaches towards integrated and inclusive sustainable development.

Enterprise Sustainability: A Modified Triple Bottom Line Analysis of Informal Manufacturing Enterprises in Uttarakhand

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Sustaining enterprises in the Himalayan region is particularly challenging because informality intersects with geographic constraints, weak connectivity, and limited institutional support. In Uttarakhand, informal manufacturing enterprises form the backbone of non-farm employment, yet their long-term viability is shaped by conditions distinct from those in the plains, including seasonal fluctuations, higher transaction costs, and constrained access to finance and markets. These challenges call for a framework that captures the multidimensional realities of enterprise sustainability in mountain economies. This paper develops a Modified Triple Bottom Line (MTBL) framework, where the conventional environmental dimension is substituted with technology while retaining the economic and social pillars. The rationale for this substitution lies in the economic realities of informal enterprises in peripheral and resource-constrained regions. Empirical research has consistently demonstrated that technology adoption enhances firm-level productivity, reduces transaction costs, and expands market reach, particularly for small and informal enterprises that lack access to scale economies. In Himalayan states such as Uttarakhand, where remoteness and infrastructural gaps hinder competitiveness, technology serves as the proximate driver of sustainability by enabling mechanization, digital integration, and efficiency gains that directly influence survival and growth. Technological capability exerts an immediate and measurable impact on productivity, employment quality, and market participation, making it a more suitable third pillar for assessing sustainability in informal manufacturing enterprises.

Using unit-level data from the All-India Survey of Unincorporated Sector Enterprises (ASUSE) 2023–24, the study constructs a Sustainability Index for informal manufacturing enterprises in

Uttarakhand. The index integrates three dimensions: economic sustainability (measured by gross value added per worker and land & building per worker), social sustainability (captured through size of employment, wage per worker, and emoluments expenses per worker), and technological sustainability (measured using an ICT Usage Index and an Effectiveness Index). Weights are assigned to the indicators through Principal Component Analysis (PCA) to ensure a data-driven aggregation of variables into a composite index. The Sustainability Index not only evaluates the performance of enterprises within Uttarakhand but also positions the state in comparison to other hilly states of India, thereby providing a relative measure of resilience and competitiveness in the Himalayan manufacturing landscape. By adopting this comparative perspective, the study highlights both the specific strengths and the structural constraints of Uttarakhand's informal enterprises.

The paper contributes to the sustainability debate by proposing and operationalizing the MTBL framework for informal economies, demonstrating its suitability for regions where technology is a decisive enabler of survival. Methodologically, it introduces a robust index-based approach that is transparent and replicable across states. From a policy perspective, the results underscore the need for targeted interventions that strengthen technological capacity, improve wage and employment quality, and enhance enterprise productivity. Such interventions, when aligned with the MTBL framework, offer a pathway to transform informal manufacturing enterprises in Uttarakhand and comparable Himalayan states into more sustainable engines of regional development.

Rural to Urban Migration and Job Opportunities in Urban India: An Empirical Study in Post-Reform Period

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This research highlights the complex dynamics of rural-to-urban migration and its implications for workforce participation in urban India. More people, especially women, are moving within the country. This change shows a shift in population trends and highlights the changing economic and social situation. Even though urban areas offer attractive reasons to move there, like better job opportunities, higher pay, and easier access to services. The proportion of relatively low-skilled migrants has decreased, while the number and proportion of educated and skilled migrants have increased. The rise in migration does not match an equal increase in the number of people working in urban India. The study shows that the shift to a service-oriented economy hasn't met the job needs of RU migrants. The semi-skill and relatively low-skilled occupations have potentially contributed to this mismatch, resulting in limited opportunities for decent and stable employment. The migration determinants, including living standards, education, marital status, social groups, and regional characteristics, indicate that both push and pull factors significantly influence migration decisions. Even in the post-reform period, states like Delhi, Maharashtra, and

Tamil Nadu have become more industrialised and developed. They are attracting more labour through urban growth, industrialisation, and opportunities in the urban areas. While states like Bihar, Rajasthan, Madhya Pradesh and Uttar Pradesh are major sending states, RU migrants share in India. It reveals the weak economy of a state which is still underdeveloped and lags behind in terms of industrialisation compared to other states.

Further, individuals who migrate are less likely to work at the same time they migrate, possibly due to initial challenges or adjustments in the urban labour market. For a RU migrant region of origin and head occupation status play a major role in the migration process. In the long term, educational access for female RU migrants will result in a high probability of getting jobs in the urban part of India. To harness the potential of RU migrants fully, there is a need for strategies that enhance skill development, improve labour market access, and ensure the integration of migrants into the urban workforce.

Human Development and Economic Growth: Evidences from Uttar Pradesh

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Existing literatures have largely focused the role of human development in economic growth and overall well-being of human being. At the same time, economic growth also translates building of human development in terms of education, health and other social indicators. The present paper seeks to examine this view point in the context of Uttar Pradesh districts. The state of Uttar Pradesh is in the group of “Empowered Action Group” that constituted mainly the lagged states of the country. The paper uses secondary data from various states to fulfil this objective. Both educational and physical infrastructure index prepared across the districts that exhibits vast disparities. Western Uttar Pradesh districts are far ahead from other zones of the state. In terms of infrastructure index, Western Uttar Pradesh districts have secured the top ten positions and Lucknow district of Central U.P has witnessed better development. The state also witnessed a discouraging scenario in terms of various human development indicators. The two-way linkages of economic growth and human development exhibits that economic growth have not translated into better prospects of human development specially in terms of educational attainment, though it had on physical infrastructure. Further, education did not seem to have a significant impact on economic growth. Hence it is suggested that appropriate policy directions required translating economic growth in to the attainment of better-quality education and vice versa.

Cinematic Adaptations and Historical Transformations: A Study of Ruskin Bond's *A Flight of Pigeons* and Shyam Benegal's *Junoon* in the Context of Urbanisation and Industrial Development

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This study explores the intersections of literature, cinema, and socio-economic change through a comparative analysis of Ruskin Bond's novella *A Flight of Pigeons* (1978) and its cinematic adaptation, Shyam Benegal's *Junoon* (1978). Set against the backdrop of the Revolt of 1857 in Shahjahanpur, Bond's narrative captures the microcosm of colonial disruption in a small North Indian town, while Benegal's film expands the canvas to depict the collective anxieties of a society caught between tradition and transformation. Both texts, in different modes, reflect the consequences of colonial rule—agrarian dislocation, class tensions, and the imposition of early forms of urban-industrial restructuring that altered India's economic landscape.

The research situates *A Flight of Pigeons* and *Junoon* within the larger discourse of postcolonial studies, adaptation theory, and urban studies, highlighting how cultural productions mediate historical transformations. By examining the interplay between literary subtlety and cinematic spectacle, this work argues that the texts not only narrativize resistance against colonial domination but also critique the uneven processes of urbanisation and economic modernization. The analysis demonstrates that adaptation is not a mere act of translation but a critical re-interpretation of history—foregrounding the entanglement of political upheaval, social change, and economic transformation.

This interdisciplinary inquiry contributes to adaptation studies and cultural historiography by showing how Bond's literary vision and Benegal's cinematic imagination together illuminate the layered realities of colonial India, while resonating with contemporary debates on development, identity, and memory.

School Infrastructure Vs Students' Performance in Quality Education: An Empirical Study of Physical and Human Inputs in Selected Districts of West Bengal

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Energy Studies (UPES), Dehradun, Uttarakhand.

This study examines the causality between school inputs and educational performance at the secondary level through an empirical survey of schools in West Bengal, India, investigating the

impact of physical and human resource infrastructure on student performance across rural, urban, and municipal corporation settings. Twelve Bengali medium Higher Secondary schools were purposively selected from four districts (Birbhum, Bankura, Burdwan, and Paschim Medinipur). Primary data was collected from 360 randomly sampled Class XI students (30 per school) across Panchayat, Municipal, and Municipal Corporation areas. High School results served as performance measures, analysed through relationship tables, diagrams, and multiple regression models. Results reveal satisfactory outward physical infrastructure but poor internal resources like libraries and laboratories, with significant demand-supply gaps in modern aids like computers. Student-teacher and student-classroom ratios appear reasonable, indicating minimal space congestion constraints. While teachers possess impressive experience and academic profiles, no perceptible association exists between physical school inputs and average performance levels. Human resources demonstrate relatively significant implications for performance levels. Physical infrastructure alone is insufficient for raising academic standards. Better results may be achieved through enhancing teachers' emotional intelligence, which appears instrumental in uplifting educational environment and standards.

Structure of Labour Force in Urban India

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This paper aims to examine the structure of the labour force in urban India using the PLFS data from 2022-23 and 2017-18, which provides a comprehensive snapshot of employment trends in urban areas over a five-year period. By analysing and comparing these datasets, the paper aims to understand the trends in the urban labour market, shedding light on the dynamics of occupation, industry, employment status, and sectoral participation. The comparison of two distinct years 2017-18 and 2022-23 allows for an exploration of how labour force structures have evolved in response to economic shifts, policy changes, and global events such as the COVID-19 pandemic, which has had a profound effect on labour markets worldwide.

From a policy standpoint, the findings of this paper can provide valuable insights for designing urban labour market interventions. Understanding shifts in employment status, sectoral participation, and occupational patterns over time is crucial for formulating targeted policies on skilling, social protection, and job creation. The evidence can help policymakers address challenges such as informality, underemployment, and gender disparities while also guiding future urban development strategies. Moreover, by linking labour market dynamics with broader economic and social objectives, the analysis can support the framing of inclusive policies that enhance both productivity and worker welfare in rapidly changing urban economies.

Municipal Wastewater Management and Sustainable Urban Development: A Comprehensive Policy Analysis of Pune's Integrated Approach

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This study critically examines Pune's evolving wastewater management framework to assess its viability as a model for sustainable urban development in rapidly urbanizing Indian cities. Using a mixed-methods approach, the paper evaluates infrastructure expansion, technology performance, institutional coordination, and regulatory frameworks, with a focus on Pune's ₹1,173 crore JICA-funded Project for Pollution Abatement of River Mula-Mutha (PARMM).

Despite major investments, Pune faces a severe 503 MLD treatment gap, with only 49% of sewage treated. The city has adopted a decentralised treatment approach, deploying diverse technologies across 11 sewage treatment plants (STPs), such as Activated Sludge Process (ASP), Sequential Batch Reactor (SBR), and Membrane Bioreactors (MBR). While this diversification enables flexibility and local adaptability, it leads to coordination complexities and varied operational performance. Treatment efficiency fell from 70.8% in 2019 to 48.7% in 2024, and reuse volumes remain critically low (4%), indicating challenges in market development, enforcement, and inter-agency coordination.

The analysis highlights significant trade-offs across technologies in terms of cost, land requirements, and efficiency. MBRs, though more efficient, are costlier, while older plants like Bhairoba STP offer lower operational costs. A comparative study with Nagpur's centralized model underscores the importance of clear policy mandates, PPP structures, and bulk reuse buyers in enabling financial sustainability and high reuse rates (95% in Nagpur vs 4% in Pune).

The study reveals implementation delays and institutional weaknesses in the JICA model, such as land acquisition issues and payment bottlenecks, which compromise project timelines and sustainability. It emphasizes that international partnerships must be supported by strong local governance, financing mechanisms, and absorptive capacity to succeed.

Regulatory frameworks, including the Draft Liquid Waste Management Rules (2024) and Maharashtra State Water Policy (2019), mandate reuse targets (20–50%). However, weak enforcement, pricing distortions, and limited reuse infrastructure hinder realization of these goals. The National Green Tribunal (NGT) has stepped in as a key enforcement agency, mandating accelerated implementation in newly merged villages.

Financial analysis indicates significant capital investment volatility and a mismatch between capital and operational budgets, threatening long-term sustainability. The study recommends strategic integration of infrastructure, markets, and institutional capacity to transition from cost recovery to revenue generation through wastewater reuse.

In conclusion, Pune's case illustrates the critical role of integrated policy, technological innovation, and institutional reform in achieving SDG 6. While its decentralised model holds potential, success hinges on regulatory enforcement, market creation, and financial sustainability. Lessons from Pune and Nagpur offer valuable insights for replicating scalable wastewater solutions across Indian cities.

Living Labs at HEIs for SDG 11: An Investigation of Engineering Institutions at Delhi

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Emerging technologies such as machine learning, artificial intelligence, etc, have the ability to make urban planning inclusive, efficient and resilient. However, the real challenge is effectively and immediately innovating and adapting such technologies as per the requirement. At the same time, engineering education has experienced very high growth in India during last thirty years, and the 'living lab' experience of Barcelona has shown the way that universities may play a central role in solving the real-world problems of the smart cities.

This study aims to investigate the impact of research activity at engineering colleges on the achievement of SDG 11. The null hypothesis (H0) states that the number of students in engineering colleges does not have a significant impact on SDG 11, while the alternative hypothesis (H1) suggests that student numbers and related expenditure in engineering colleges do have a significant impact. Further, the study seeks to evaluate the activities undertaken by engineering institutions in Delhi for knowledge management in support of SDG 11, with the analysis divided into two time periods, 2015–2019 and 2020–2024. Finally, the research aims to develop a framework of a living lab that places engineering institutions and their stakeholders at the centre of the framework.

Through OLS regression that the impact of research activity at engineering colleges (state wise number of engineering students) on the achievement of SDG11 has been found non-significant. When analysed qualitatively, during 2015-19, there were more workshops, conferences, etc. organised by most of the engineering institutions; however, during the second half (2020-24), institutions are working on various aspects of SDG 11 in collaboration with international organisations, Government bodies, and corporate sectors. However, even now they lack associating people from the lower segment of society, who are an integral part of the urban landscape or their representatives. A framework Living Lab associating all stakeholders with engineering institutions at the centre has been developed.

Beyond Awareness: Examining the Gap Between Environmental Knowledge and Waste Management Behaviour in India's Himalayan Region

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Solid Waste Management in the eco-sensitive Himalayan region encounters challenges in the form of geographical constraints and infrastructural and institutional limitations. Perceptions, norms, attitudes and knowledge exacerbate it. A cross-sectional survey of 300 households from Nainital (hills) and Haridwar (plains) was conducted to examine the households' perspective, behaviour and awareness regarding waste management based on the Theory of Planned Behaviour. The study assesses the impact of the Clean India Mission or Swachh Bharat Mission (SBM) in promoting behaviour change. The research aims to identify the factors influencing the pro-environmental waste management behaviours and the satisfaction levels from the SBM and current waste management services. The results reveal several geographical disparities in the waste management practices. Haridwar experienced 84 percent door-to-door collection of waste against Nainital, which received only 24 percent due to its terrain constraints. Waste segregation at the household level remained virtually absent even when separate bins were provided across both districts. Educational attainment strongly predicted environmental awareness, yet a significant awareness-action gap existed. Tourism emerged as one of the primary sources of pollution, with more than 80 percent of the waste being runoff in the nearby waterbodies. While SBM achieved recognition through its visual impact, understanding of its objectives remained limited. While 50 percent of the respondents were satisfied with the SBM across both Haridwar and Nainital, only respondents from Haridwar were mostly satisfied (52 percent) with the waste management services of their municipality, whereas in Nainital 40 percent of the respondents were partially satisfied and 38 percent were completely satisfied. The study highlights that awareness and infrastructure alone may not be sufficient to achieve sustainable waste management behaviour. The study advocates integration of behaviour changes strategies with enforcement mechanisms and terrain-specific policies to effectively address waste management. Furthermore, guidelines for households and tourists should be clearly stated, informed and enforced to ensure behavioural changes. Considering the significance of Himalayan regions as the primary source of major rivers, urgent action is needed to prevent further deterioration of water quality and environmental health.

Informal Workers and The Social Security: The 'Neo-Proletariat' in an Urban Market

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From the early 1970s, economists have started to recognize the existence of a dualistic economy in the urban labour market: characterized by a formal sector and an informal sector. With the advent of time, the formal modern sector has failed to absorb the increased supply of labour force and a large amount of new entrants find their own employment in the informal sector either in a small-scale family-owned enterprises or self-employed. Thus, informal sector is the main source of urban employment in the developing countries.

The informal sector is characterized by a large number of small-scale production and service activities that are individually or family-owned and use labour intensive and simple technology. NSSO data shows that in the urban labour market, Informal workers are mainly concentrated in own account enterprises.

These own account enterprises are mainly low-income generating units. The workers are mainly engaged in trading and repair services and manufacturing activities. Comparing with Maharashtra, Gujrat and Kerala, the worker's productivity is comparatively low in West Bengal's urban informal sector.

Section 2 analyses the changing features of the urban labour market in West Bengal during the period of new economy with special emphasis on the informal labour market.

The process of industrial restructuring in India that began in early 1990s has had deleterious effects on two areas concerning labour, viz. employment and union power. This has been primarily the consequence of a shift in the management policies during this period. Some of these new policies are (a) reduce the permanent workforce; (b) organize the bulk of the production through ancillary units; (c) employing more casual, contract or other forms of unprotected labour; and (d) shift production facilities to the backward areas where labour is cheap and not unionized.

An increase in casualisation and feminisation of wage labour takes place in the urban labour market and increased casualisation cuts down the fixed costs and gives the management the much-needed flexibility and control over the production process. These new strategies have created an atmosphere of job insecurity among the workers and severely curtailed their trade union rights. The employers are more aggressive in closing down their operations in major industrial centres with a lock-out. Section 3 we discuss the labour relations in Urban West Bengal during the period of New Economy.

Increasing marginalisation and casualisation among the workforce leads to a subsistence economy where workers are exploited intensively. It also sharpens the degree of income disparity among the members of the society. More employment in the informal sector deprives workers from

getting any social security benefits. It simultaneously reduces the burden of the social commitments of the State. The role of the trade union in the urban informal sector is very minimal. Small size of the units (mainly service units), scatter distribution of the units in different locations and low income generating from these units make the situation grave.

India's Development Puzzle: Structural Transformation, Growth Paths, and Employment Dynamics

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India has witnessed a complex interplay between economic expansion and employment opportunities over the past four decades. Despite high economic growth, India's labour market has struggled to absorb the surplus workforce, raising concerns about employment growth and a weak process of structural transformation. Drawing on unit-level data from the NSSO Employment–Unemployment Surveys and the Periodic Labour Force Surveys for the period 1983 to 2023–24, this study applies the canonical Shapley decomposition framework to disentangle the contributions of intra-sectoral and inter-sectoral shifts in employment to changes in per capita output. This analysis reveals a pattern of variation in employment as well as gross value added between and within the sub-sectors of India. The result shows that productivity plays a crucial role in driving the per capita output growth, while the contribution of static and dynamic reallocation is negligible. In dynamic allocation, within-sectoral productivity plays a major role, and it reveals that the agriculture and manufacturing sectors contribute the most to the overall productivity growth, while sectors such as financial, real estate, and construction make only a minimal contribution. Moreover, the analysis confirms that output growth has not been accompanied by commensurate employment growth, suggesting a decoupling of economic expansion from job creation. The results indicate a persistent decoupling of output growth from employment expansion, reflecting a weak process of structural transformation. These findings underscore the need for targeted policy interventions to promote inclusive growth and generate decent employment opportunities.

Clean City, Green Future: Lessons from Indore's Environmental Success

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Indore has consistently upheld its designation as India's cleanest city for eight successive years. This accomplishment demonstrates a successful amalgamation of urban habitation with efficient waste management and environmental conservation. This study examines the various elements that

have allowed Indore to maintain its distinctiveness, emphasising lifestyle behaviours, governance structures, and community efforts that jointly promote cleanliness and environmental stewardship.

The study examines the role of extensive community awareness, systematic recycling practices, and stringent waste segregation in the city's cleanliness achievements. It also examines the influence of public policy, behavioural interventions, and technological innovations—such as intelligent waste tracking systems and decentralised composting units—on the development of sustainable urban practices. A primary focus of the study is the significance of public participation, which serves as a fundamental element in fostering long-term environmental resilience.

Indore has developed a scalable and replicable model of cleanliness through a collaborative framework that integrates citizen engagement, rigorous policy enforcement, and adaptable urban design. The research analyses data collected from 300 residents reflecting varied socio-economic origins across both business and residential areas. This comprehensive sampling method guarantees a detailed comprehension of the city's sanitary system and the diverse functions performed by its residents.

Research indicates that sustainable cleanliness arises not only from top-down government but is fundamentally rooted in grassroots creativity and civic responsibility. Community initiatives—such as cleanliness campaigns, waste-to-resource programs, and educational efforts—have substantially influenced public attitudes and behaviours. The study emphasises that when residents are empowered and policies are adaptive, metropolitan areas can transform into cleaner, healthier, and more sustainable settings.

These observations provide significant lessons for other cities aiming to emulate Indore's success, highlighting that ecological transformation is most effective when it is inclusive, participative, and culturally adaptive.

Land Acquisition in India – Shifting Paradigm

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The studies on development induced displacement conducted for last few decades, therefore had a selective character. During the last two decades we have witnessed a very dynamic development of studies on internal displacement. This problem has for the first time become a subject of debate within international institutions and agencies. This book is an introduction to land acquisition problem in India. The development activities induce the growth should be a holistic notion that encompasses the progressive development in the quality of individual's life in terms of food, clothing and shelter and the environment for a healthy living with rising longevity of life and happiness. In West Bengal the development process reveals the indications and effects of widening inequalities between the "haves" and "have-nots" and the growing deprivation of the vulnerable and marginalized sectors of the population. There are very small trickle-down effects

of the economic development associated with this model of growth. But when it is necessary to undertake development projects that engage the displacement of communities, it is indispensable that these projects obtain the legal permission and support of the people who are affected and that in return for giving up their land and homes they receive priority if not exclusive rights to the benefits emanating from these projects. The present research conducted on Raniganj coalfield on population displacements caused by natural disasters and long-term environmental changes has nevertheless developed very successfully.

The Rise of Crimes in Urban Kano: An Empirical Analysis

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Crime as a global phenomenon occurs in every society and has negatively affect the wellbeing of people. It is obvious that there is crime free society on earth only that its nature, pattern and rate vary in time and space, making it a multidimensional phenomenon that requires thorough examination and analysis. The nature and the rate at which crime occurs is alarming as new crimes emerged and proliferate, leading to serious consequences on the lives and property of people. Today, the dimension of crimes in urban areas has changed from minor to grievous victimization that resulted to serious injuries, vandalization of properties, loss of lives, and distortion of commercial activities. Accordingly, the paper investigates the factors predisposing the emergence and rise of crime in urban cities, taking Kano as a point of reference. In view of this, factors such as poverty, unemployment, peer group influence corruption, drugs and substance abuse, broken home, and illiteracy among many others were identified as predisposing factors influencing crime in most urban cities in Nigeria. These factors were said to have produce a fertile ground and encourage the perpetration of various crime in contemporary Nigeria which continue to sabotage the social, economic and political wellbeing of citizens and undermine the good image of Nigerians in the eyes of other countries across the globe. The paper empirically x-rayed the rise of crimes in urban Kano with a view to highlight the crimes bedevilling urban Kano, the underlying causes of their emergence and proliferation, their consequences on residents, business activities and the government. Strain and routine activity theories were used in providing a theoretical framework for the paper. The paper finally provided appropriate recommendations in line with its findings in order to provoke new policy formulation and the review of the existing ones to facilitate effective crime prevention and control in urban areas.

Domestic Violence against Working and Non-Working Women in India: Extent and Spatial Patterns from NFHS Evidence

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Domestic violence remains deeply entrenched in the social fabric of India, and despite some decline over time, the pace of reduction has been slow and uneven. Official statistics such as those from the National Crime Records Bureau (NCRB) often face criticism for underreporting the true extent of violence, highlighting the importance of large-scale surveys like the National Family Health Survey (NFHS). This paper examines the prevalence of domestic violence among working and non-working women, drawing upon unit-level data from NFHS 4 (2015 -16) and NFHS 5 (2019-21). The analysis focuses on physical, sexual, and emotional violence, and explores variations across socio-economic groups, education levels, geographical locations, and family size. Such evidence is critical for programmatic and policy interventions aimed at addressing gender-based violence.

The findings reveal that working women consistently report higher experiences of violence compared to their non-working counterparts. NFHS-5, 35.2% of working women reported experiencing physical violence compared to 26.0% of non-working women, a gap of over 9 percentage points, similar to the disparity observed in NFHS-4. Sexual violence, though lower in prevalence, reflected the same pattern: 5.0% of working women versus 4.0% of non-working women. Emotional violence showed the widest difference, affecting 19.0% of working women compared to 11.9% of non-working women, a gap of more than 7 percentage points. Between the two survey rounds, physical and sexual violence declined only marginally, while emotional violence rose slightly, underscoring persistent and shifting challenges.

Socio-economic and educational gradients further shape women's experiences. Violence remains disproportionately concentrated among poorer and less-educated women, with the poorest quintile reporting nearly twice the prevalence compared to the richest households. Education plays a protective role: women with secondary or higher education reported substantially lower levels of physical, sexual, and emotional violence. Rural women continue to face higher prevalence compared to urban women, although urban working women exhibit notable vulnerability. Importantly, the analysis highlights a strong association between family size and violence, with women having five or more children reporting significantly higher levels of physical and sexual abuse.

Overall, NFHS-5 shows only marginal reductions in physical and sexual violence compared to NFHS-4, while emotional violence increased slightly. The persistence of high prevalence rates especially among working women, rural populations, and economically disadvantaged groups—reflects the complex interplay of gender, work status, education, and household dynamics.

This study examines the determinants of domestic violence among working and non-working women using a logit model. Using the NFHS data, the analysis used the key indicators such as education, income, age, marital duration, and partner's alcohol consumption significantly shape risk levels. Findings reveal that employment status has a dual effect—providing financial independence yet sometimes provoking conflict. The study underscores the need for targeted interventions addressing structural inequalities and promoting women's empowerment.

The Production of Space and Contract Workers

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This paper examines the concept of the production of space empirically for contract workers in the Indian industrial landscape. The production of space is a mind-blowing concept popularised by Henri Lefebvre. Initially developed for urban planning, it argues space as a social product not a fixed or natural entity, and shaped economically, politically, and culturally. As we know globalisation enlarged after 1990 and heavily impacted the industrial landscape. Contract workers increasingly utilised and replaced regular/permanent workers at workplaces/shop floors. Contractual arrangement is criticized for precariousness and labour rights violations. The paper looks at the produced space for contract workers, as how they appropriated/claimed the industrial workplaces/shop floors, how much this is designed for them and what are their lived experiences. The triad of spaces as perceived (what is seen on the shop floors), conceived (what is thought about utilisation of contract workers) and lived (everyday experiences of contract workers) could help to know the ground reality of contract workers empirically. The paper hinges on three components of the production of space for contract workers. Firstly, to what extent contract workers appropriate/claim the workplaces/ shop floors (perceived space) through their daily working life, activities, and interactions. Secondly, what was thought conceived by employers and planners about contract workers utilization? What are the workplace regulations for engaging contract workers in core and non-core jobs at shop floors? Thirdly, what is occurring at shop floors and accounting the gap between what is said and what is observed for contract workers. What contract workers are felt or experienced (desires, fears, and emotions) about their job profile, available amenities, emoluments etc. and what should be sustainable for this development? The paper is positioned in Tata Steel Jamshedpur that has brought drastic changes in modernise/automate the shop floors and utilisation of contract workers to reduce costs to cope with globalisation effects.

Implications of Urbanization for Agriculture in Himachal Pradesh

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India is now the most populous nation in the world leaving behind China. Increasing population and consequent urbanization have become a recognized source of both economic growth and development. In mountainous regions, given the undulating topography, the limited scope of urban expansion and the confinement of inhabited areas to a narrow land base, give rise to numerous problems. Since the livelihood options in hilly areas are limited to agriculture and tourism-related activities, the urban expansion has serious implications for mountain agriculture.

Indian agriculture has many achievements to its credit due to proactive government policies and infrastructure support. However, overtime many challenges are manifesting into sustainability issues. These challenges relate to agro-climatic, environmental, and socio-economic dimensions. This has led to a fresh narrative of ecological agriculture of “evergreen revolution based on sustainable thinking”. As such, twin policy paradigm shifts have taken place in Indian agriculture landscape: first, from ‘production to income oriented’ approach for the welfare of the farming community, and secondly from the philosophy of ‘green revolution led’ productivity to ‘green methods’ led sustainability in agriculture. The issues of urban growth and agriculture in mountain areas are more difficult to handle due to the well-known mountain specificities.

The present article is an attempt to study the urbanization trends in Himachal Pradesh and examine the extent of land use changes due to urban sprawling and its implications for the sustainable agriculture in the state which has long been regarded as a ‘model state of development’ for many states. The results revealed that there has been noticeable increase of built-up area in the study area. Hence, there is a need to follow a cautionary approach concerning land use policy in hills so that the food and livelihood security of the poor peasantry is not affected along with concomitant ecological repercussions of development. Also, at the same time, positive externalities of urbanization need to be harnessed to the maximum extent for the benefit of hill people with limited livelihood options.

THEME 3



Enhancing Livelihoods and Promoting Well-being

According to Chambers and Conway (1992), a sustainable livelihood comprises the capabilities, assets—both material and social—and activities necessary for securing a means of living. It remains sustainable when individuals and communities can withstand and recover from shocks and stresses, enhance their resources and skills, and ensure livelihood opportunities for future generations. Sustainable livelihoods go beyond mere income generation, encompassing access to essential resources, markets, education, healthcare, and social support systems that contribute to long-term economic security and overall well-being. The Sustainable Livelihoods Approach (SLA) emphasizes resilience, diversification, and empowerment, enabling individuals and communities to navigate economic and environmental challenges effectively.

In developing countries, numerous challenges hinder the attainment of sustainable livelihoods and well-being. A major issue is the predominance of informal employment, which offers little to no job security, fair wages, or social protection. Access to essential opportunities—such as education, skill development, healthcare, and technology—remains highly unequal across gender, socio-religious groups, and geographic regions. Women, Dalits, tribal communities, and other marginalized groups often face systemic barriers in obtaining education, employment, land, and financial resources, limiting their economic mobility. Rural populations grapple with inadequate job opportunities, poor infrastructure, and restricted market access, leading to large-scale migration to urban areas, where informal labour and slum conditions prevail.

Although India has a young workforce, the mismatch between industry requirements and available skills results in underemployment and economic instability. Additionally, small entrepreneurs and farmers often struggle with limited access to affordable credit, insurance, and essential financial services, hindering business growth and economic resilience. While the rapid expansion of digitalization has created new livelihood opportunities, many rural and underprivileged populations remain excluded due to inadequate internet access, low digital literacy, and a lack of necessary skills to participate in the digital economy. Environmental factors also pose a significant threat to livelihoods, particularly in agriculture dependent regions. Erratic monsoons, droughts, floods, and declining soil fertility endanger agricultural productivity, while rising air and water pollution further compromise public health and overall well-being. Although government interventions have reduced healthcare expenses in some areas, access to quality healthcare remains a challenge for many. To address these pressing issues, paper contributors are encouraged to explore diverse perspectives and case studies under the following indicative sub-themes:

Key issues for consideration under this theme include:

- Informal Employment and Livelihood Security – Examining the vulnerabilities and social protection mechanisms for informal workers.
- Entrepreneurship and Microfinance – Assessing the role of small businesses and financial services in improving economic stability.
- Sustainable Agriculture and Rural Livelihoods – Understanding how climate change and new farming techniques impact rural livelihoods. Equally interesting is to understand the determinants of rural livelihoods and their impact on earnings of workers
- Gender and Social Dimensions of Livelihood Opportunities – Analyzing the barriers and enablers for marginalized communities.
- Impact of Digital Platforms, E-Commerce, and Remote Work – Evaluating the role of technology in expanding economic opportunities, particularly in rural areas.
- Financial Inclusion and Economic Mobility – Exploring how microfinance, digital banking, and credit access enhance financial resilience.
- Education, Vocational Training, and Employment – Studying the impact of skill development initiatives on long-term livelihood security.
- Migration and Urban Livelihoods – Investigating the livelihood challenges and opportunities in urban informal economies.
- Workplace Security, Mental Health, and Well-being – Examining the intersection of job security, workplace stress, and overall well-being.
- Impact of Ayushman Bharat on Healthcare Accessibility – Assessing how government health schemes alleviate the financial burden on vulnerable populations.
- Effectiveness of Welfare Schemes in Reducing Poverty – Evaluating government interventions in improving livelihoods and well-being.
- Climate Change and Livelihood Resilience – Exploring adaptive strategies to enhance economic resilience amid environmental changes.

KEY NOTE ADDRESS

Enhancing Livelihood and Promoting Well-being

Pami Dua

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Livelihoods are fundamental to both economic survival and human wellbeing, yet their meaning remains unevenly understood and their realization often precarious across the globe. Any effort to strengthen or transform livelihoods must begin with conceptual clarity. Before examining how livelihoods contribute to wellbeing or how they might be reshaped through sustainability, it is essential to first acknowledge and synthesize the diverse ways in which the idea of livelihood has been defined.

Chambers and Conway (1992) frame livelihoods as the combination of capabilities, assets, and activities needed for a means of living that is sustainable across generations. The International Labour Organization (ILO) emphasizes the centrality of decent work, fair wages, and social protection. The Asian Development Bank (Serrat, 2017)) highlights diversification and resilience as the cornerstones of livelihood security, while the OECD directly links livelihoods to multidimensional wellbeing. Taken together, these perspectives underscore that livelihoods are about much more than income: they encompass dignity, resilience, equity, and the ability to thrive amidst shocks and transitions.

Wellbeing refers to people's ability to live the kind of lives they value, combining objective conditions (such as health, education, income, and housing), subjective experiences (such as life satisfaction and sense of purpose), and relational aspects (such as dignity, agency, and belonging). The OECD wellbeing framework provides a powerful lens for this reframing. Drawing on Sen's capabilities approach (Sen, 1985, and Stiglitz, et al, 2009) the OECD wellbeing framework stresses that wellbeing is not only about achieved outcomes—what people have or do—but also about the freedoms and opportunities they possess to achieve them. This distinction is critical, as it highlights that livelihoods are meaningful only when they expand both functioning and capabilities: not just providing income but enabling people to live securely, with dignity and choice (OECD, 2011).

This perspective also brings into focus the “GDP conundrum.” Economic growth, as measured by GDP, often obscures the true condition of livelihoods and wellbeing. Practices such as unsustainable resource extraction or rebuilding after disasters may inflate GDP while depleting ecosystems and worsening inequalities. Informal work and unpaid care—vital to social and economic reproduction—are rendered invisible. Growth may coexist with declining

wellbeing when livelihoods are precarious, exploitative, or ecologically destructive. Addressing this conundrum requires moving beyond narrow output measures toward frameworks that value what truly counts: dignity, agency, resilience, and ecological sustainability.

The LiFE (Lifestyle for Environment) Economy framework provides such a paradigm, linking livelihoods to wellbeing through five interrelated dimensions. First, ethical foundations root livelihoods in values of responsibility and justice, ensuring that economic activities respect both human dignity and ecological limits. Second, sustainable consumption and production shift livelihoods toward green jobs—such as renewable energy, sustainable agriculture, eco-tourism, and circular economy innovations—that generate income while restoring ecosystems. Third, community and social enterprises provide structures through which collective action, self-help groups, and cooperatives translate livelihoods into solidarity and relational wellbeing. Fourth, inclusive financing expands access to credit, digital banking, and green investment, enabling marginalized groups—especially women and informal workers—to participate in sustainable enterprises. Fifth, innovative wellbeing metrics reorient progress away from GDP toward indicators that capture livelihood security, environmental regeneration, and human flourishing. Together, these five dimensions embed livelihoods in an ethical and ecological framework that ensures they contribute meaningfully to wellbeing.

We examine experiences from diverse communities to illustrate the livelihood–wellbeing–LiFE connection. The case studies demonstrate that when livelihoods are embedded in LiFE principles, they simultaneously advance material, relational, and subjective wellbeing while safeguarding planetary health.

In conclusion, livelihoods, wellbeing, and LiFE form an interconnected triad that offers a holistic paradigm for human progress. Livelihoods provide the material and social means of living, wellbeing captures the multidimensional ends of human flourishing, and LiFE embeds both within ecological and ethical boundaries.

Unlocking Women's Workforce Potential in India: Quantifying the Labour Market Impact of Formalising Part-time Employment and Gender Equality in Unpaid Care Work

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Using the McCall-Mortensen macroeconomic job search framework, the study models the effects of targeted policy interventions on female LFPR. Through quantitative simulations, it estimates that formalising part-time work and achieving a more equal distribution of unpaid care responsibilities between men and women could raise India's female LFPR by six percentage points, from 37% to 43%. This is a significant improvement with potentially far-reaching impacts on overall economic productivity.

The study identifies formal part-time employment contracts with standardised norms for flexible work hours as a crucial enabler for women's labour market participation. Such contracts provide women with greater access to secure, quality jobs while accommodating caregiving duties. Equally vital is addressing the gender imbalance in unpaid care work. This requires substantial public investment in affordable and accessible childcare and eldercare services, which would ease the care burden on women and allow them to engage more fully in paid employment.

In addition, the paper calls for a suite of supportive policies, including equal paid parental leave, tax incentives for shared caregiving between men and women, and workplace flexibility measures such as remote work options and adjustable schedules. These interventions can collectively help women balance work and family responsibilities more effectively.

Drawing on international experiences, the study stresses that fostering a gender-equal labour market requires more than just policy changes - it demands a transformation in social norms. Cultural attitudes that devalue women's economic roles and reinforce traditional caregiving expectations must be challenged through public discourse, education, and community engagement.

In conclusion, the paper argues for an integrated policy approach combining labour market reforms, social infrastructure investments, and behavioural change. By formalising part-time employment, expanding care services, and promoting equitable caregiving policies, India can not only improve female labour market outcomes but also unlock broader macroeconomic benefits through increased labour supply and productivity. Advancing gender equality in the world of work is thus both a social imperative and an economic opportunity.

Global Hunger Index and India: In Search of an Alternative Measurement

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The recent report of Global Hunger Index (GHI) and India's rank therein evokes huge controversy. There are opinions justifying the report and, in the process, reiterating the abysmal condition of a substantial section of the population. On the other hand, the methodological inconsistency of the index has been strongly questioned. Although, there is no denying the fact that poverty, food insecurity, nutritional status of the poor people has improved in comparison to what it had been five decades back. Yet, the numbers tell certain stories across states which might suggest that still we have been lagging behind than some of us neighbouring countries. The whole question is how bad the reality is, or should we worry that much? Countless research paper on poverty estimates in India have been written since fifth five-year plan and the policymakers have tried to frame objectives which could reduce the number. This study seeks to address certain unexplored issues while constructing the index and also tries to look at the numbers in terms of a few other indicators just to understand up to what extent India's rank has actually dropped and where the country could have reached otherwise. Also, the study intends to show a few areas where the thrust needs to be given in order to improve the ranking of India in terms of this index.

Collegiate Education and Governance in Indirectly Administered Colonial India in the Late Nineteenth and Early Twentieth Century

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The history of higher education in colonial India is primarily dominated by 'administrative histories' with its focus on the development of institutes of higher education in colonial India premised on a framing that a foreign model was transferred to the colony and the role of the colonial administrators was to ensure the proper functioning of the transferred model – that of the London University model of the 1840s and 1850s. The paper will depart from this historiography by problematizing the concept of governmentality from political theory to understand the development of collegiate education in the indirectly administered colonial India. The paper will make an attempt to analyze the establishment of the English Arts Colleges in the cities of Mysore, Bangalore, Indore, Jammu Tawi, and Srinagar from the princely state of Jammu and Kashmir, Bangalore, and Thiruvananthapuram. In this regard, the city of Bangalore is an

interesting case as it was divided into two regions governed by the Maharaja of Mysore and the cantonment area, which was under direct colonial administration. Further, the paper will make an attempt to introduce the concept of Provincial Governmentality, which will provide the analytical tool to understand the change in the governance structures of the above-mentioned cities of the indirectly administered colonial India vis-à-vis the establishment of the English Arts colleges in them.

Exploring the Macroeconomic Effects of Gender Gaps in India: A Quantitative Approach

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Over the past few decades, gender equality which is acknowledged as a fundamental human right and a pillar of inclusive development has attracted previously unheard-of levels of international attention. Numerous studies conducted in various countries have connected gender equality to increased social cohesiveness, better governance, higher economic growth, and overall well-being. The problem takes on even more importance in developing nations like India because of ingrained institutional and social constraints that have traditionally prevented women from fully engaging in the economy.

The results demonstrate that gender equality has a substantial role in India's economic growth, supporting the conclusions of previous studies (Klasen & Lamanna, 2009; Esteve-Volart, 2004; McKinsey Global Institute, 2015). Given the favourable correlation between GDP growth and FLFP, utilizing women's underused potential is not only an issue of equity but also a strategic economic necessity. The observed negative coefficient on the education gap emphasizes how important it is to create human capital in order to promote growth. Human Capital Theory, which holds that education raises individual productivity and, hence, national income, is consistent with this conclusion.

These findings imply that the benefits of female labour participation would not fully materialize in the absence of institutional support, such as flexible work schedules, workplace safety changes, and education subsidies. Curiously, the interaction term's very small size suggests that, although policies are important, they are insufficient on their own; more significant societal change is also required. To maintain gains in gender equality, structural problems like social norms, safety concerns, and unpaid care work obligations must be resolved.

The results show that economic outcomes are significantly improved by advances in gender equality, and that policy measures are crucial in mitigating these effects. These dynamics are further clarified by comparative case studies comparing states with different gender indices. The study ends with policy suggestions that prioritize labour market changes, infrastructure improvements, and educational access. Sustainable development and India's ability to compete globally depend on the full economic potential of gender equality.

Economic Growth and Youth Dynamics through the Lens of Youth Employment: A Panel Analysis of 31 OECD Countries from 2002 to 2020

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This paper investigates the relationship between youth labour force participation, youth employment, and economic growth in 31 OECD countries over the period 2002–2020. This paper uses a panel econometric approach to examine the complex dynamics between these variables, addressing issues such as endogeneity and regional heterogeneity. The findings highlight that while higher youth labour force participation contributes significantly to economic growth, the impact of youth employment on growth is also significant, though it varies across regions. Additionally, the study identifies the phenomenon of jobless growth, where economic expansion does not automatically translate into increased youth employment, especially in regions with structural barriers. This paper employs a two-stage least squares (2SLS) model approach to address the bidirectional relationship between youth employment and economic growth. Results suggest that policies focused on human capital investment, improved education-employment alignment, and regional economic integration are crucial for enhancing youth employment outcomes. This paper emphasizes the importance of addressing structural constraints to ensure that economic growth leads to greater employment opportunities for youth and fully leverages the potential demographic dividend.

Impact of Pulses and Millets-Based Interventions on Sustainable Livelihoods in Mountain Ecosystems: A Case Study of Himmotthan Society's Mission Pulses Programme

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Agriculture is the main source of income for most rural inhabitants in the mountainous areas of Uttarakhand, where farming is largely dependent on rainfall and marginal landholdings. These regions face severe geographical constraints, to sustain livelihoods and food security include undulating land, infertile soils, insufficient irrigation, and minimal scope for agricultural advancement, resulting in low production. The continued reliance on traditional subsistence farming further exacerbates these challenges. In response to persistent challenges in productivity and market access, the Mission Pulses Program, implemented by the Himmotthan Society (an initiative of Tata Trusts), was launched to improve the livelihoods of mountain farmers and this multi-faceted initiative, covered

500 villages across nine districts, focused on optimizing production, post-harvest management, branding, and institutional marketing of pulses, millets and high-value crops, alongside promoting seed production, beekeeping, irrigation infrastructure, and mechanization. A third-party evaluation by CMSR, using Computer-Assisted Personal Interviewing (CAPI) tools, documented significant outcomes. The program successfully engaged 29,775 households, integrating 3,900 acres under improved production technologies. Furthermore, it mobilized over 9,000 women into 1110 Self Help Producer Groups (SHGs)/Producer groups (PGs), subsequently established 16 women farmers' cooperatives/FPOs, collectively managing cluster-specific value chains. These women cooperatives play a vital role in promoting social enterprises and microfinance-based livelihood activities. The program significantly boosted agricultural productivity, benefiting over 15,000 farmers through the adoption of improved Package of Practices (PoP). This led to substantial output, with more than 2,100 quintals of seed produced and marketed. Additionally, Self-Reliant Cooperatives (SRCs), Farmer Producer Organizations (FPOs), and Farmer Producer Companies (FPCs) collectively marketed over 5,600 quintals of agricultural produce. This support was crucial in helping farmers integrate these new methods into their practices. It also facilitated the development of collective brands such as “Trishulii” and “Himalayan Honey”, strengthening market presence and consumer trust. In conclusion, the program demonstrated a robust and scalable model for inclusive, women-led agricultural development in mountainous terrains, characterized by enhanced resilience, profitability, and institutional longevity.

Time Poverty in Later Life: A Socio-Demographic Analysis of Older Adults in India

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As India undergoes a rapid demographic transition, the proportion of older adults (aged 60 and above) is projected to double by 2050, raising urgent questions about their well-being. This study investigates time poverty among older Indians, defined as having discretionary time below 60 per cent of the median after accounting for essential activities such as paid work, domestic duties, caregiving, and personal care. Using nationally representative data from the Time Use Survey (TUS) 2019, this study constructs a time poverty threshold and examines its incidence and determinants.

The paper calculates the mean-time use across nine major activity categories for older adults and determines discretionary time by subtracting essential time from the total daily time (1,440 minutes). Using three separate thresholds—based on the median discretionary time of (a) the total population, (b) adults aged 15+, and (c) older adults aged 60+, the paper assesses the extent of time poverty. Descriptive and multivariate logistic regression analyses are then employed to explore socio-demographic disparities and determinants.

Disability and Employment in India: An Intersectional Analysis of Structural Exclusion in the Labour Market

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In the study, we found that low labour force participation among persons with disabilities (PwDs) is not simply a reflection of individual impairments but is deeply rooted in structural, economic, and institutional exclusion. Our findings compel a rethinking of prevailing assumptions—most notably, the belief that education or legal mandates alone can substantially improve employment outcomes for PwDs. Although higher education levels are associated with greater employment odds, this relationship is significantly moderated by gender, caste, and type of disability. The regression results reveal that, even among graduates, women with intellectual or psychosocial disabilities remain largely excluded from the labour market. These insights demonstrate that intersectional disadvantage continues to define the labour market experiences of PwDs in India.

Furthermore, our findings suggest that individuals from disadvantaged caste groups and poorer households often show higher labour market participation not due to better inclusion but rather out of economic compulsion. This highlights a survival-driven rather than empowerment-driven labour force entry. Such evidence calls for policies inclusive in intent but responsive to the layered realities of marginalisation.

By applying interaction effects in our model, this study empirically validates the significance of intersectionality and social exclusion in shaping employment outcomes. It also uncovers the implementation gaps in the Rights of Persons with Disabilities (RPwD) Act, 2016, especially in ensuring workplace accessibility, targeted skilling, and employer sensitisation. Our findings suggest that employment for PwDs cannot be tackled in isolation; instead, reforms must integrate inclusive skill development, accessible infrastructure, caste- and gender-sensitive training, and better data systems to track progress.

In sum, this study updates our understanding by demonstrating that disability-related exclusion in the Indian labour market is best understood not as a singular axis of discrimination but as a complex intersection of social identities. A future-ready policy must embrace this complexity to promote employment equity meaningfully. Our research provides an empirical foundation to guide such a policy and academic discourse shift.

Livelihood of Tea Tribes in Western Duars Region, India: Challenges and Feasibility

Anil Kumar Biswas, *Professor & Head, The University of Burdwan, Burdwan, West Bengal.*

Tea plantations were started by Britishers in India in 1837. Tea was gradually introduced as a daily life morning beverage for every Indian. Now India is the second largest tea producer and the fourth largest exporter country. Assam is the highest tea producer state and West Bengal is the second highest tea producer in India. Duars region is a geographical demarcation. The foothills of the Sub-Himalayan part of India with an average breadth of 30 KM and length of 350 KM area of the eastern part of West Bengal and Western part of Assam geographically known as duars. The duars region of West Bengal comprising districts of Jalpaiguri and Alipurduar is called the Western Duars region with 145 organized tea gardens. Labours of the gardens are ethnic tribal people mostly migrated from Jharkhand, Bihar, Orissa, and Madhya Pradesh in British times. Since then, they have settled in the tea garden areas of the duars region for their livelihood. The total population of the Western Duars region is 55,72,846 as per 2011 Census report. Out of them 10,56,786 (18.96%) are tribal population mostly depended on tea gardens for their livelihood. Tribal people who work in tea gardens and reside in quarters in the garden are called tea tribes. They have been living below the minimum living standard since very early. They are mostly illiterate, living in unhygienic conditions, and suffering from malnutrition. Since independence the agro-based industry has sustained a lot; as a result, the livelihood of the dependents on the industry deepening under serious challenges. From this point, the research paper aims to study the following objectives.

The objectives of the study are: to examine the present livelihood patterns of tea tribes; to identify the livelihood challenges faced by tea tribes in the Western Duars region in particular and in India more broadly; to analyse how tea, as an agro-based rural industry, impacts the rural economy in general and marginalized communities in particular; and to explore pathways for building stronger linkages between local government and tea garden management to improve the livelihoods of the tribes. The research adopts a qualitative approach supplemented by quantitative data. A sample of 36 gardens has been selected from a total of 145 gardens in the region. In addition, available secondary data has also been consulted for the study.

Spiritual Intelligence as a Predictor of Happiness among School Teachers

Anmol Preet Pal Singh, *Research Scholar, Sant Baba Bhag Singh University, Jalandhar, Punjab.*

Happiness is as a positive emotion comprising of feelings such as joy, contentment and satisfaction. Spiritual intelligence includes one's awareness of deeper meanings of life and death,

value system, conscientiousness and connections outside the materialistic world. The present study aims to explore spiritual intelligence as a predictor of happiness among school teachers. It is a descriptive survey-based study conducted on a randomly selected sample of 100 school teachers employed in government and private schools of Jalandhar district in Punjab. Data was collected by using standardised tools. Before beginning with data analysis, Kolmogorov-Smirnov goodness-of-fit test was conducted on both the variables to check for normal distribution of data. Consequent upon the confirmation of normal distribution, it was decided to use parametric tests including Simple Linear Regression and ANOVA for data analysis. The results indicate that spiritual intelligence is a significant predictor of happiness among school teachers.

The findings highlight the importance of integrating spiritual intelligence in teacher training and professional development programs, as it not only enhances personal well-being but also positively influences teaching effectiveness and student outcomes. By fostering deeper meaning, value orientation, and resilience, spiritual intelligence can serve as a vital resource for sustaining happiness in the demanding profession of teaching.

Impact of Pradhan Mantri Kisan Samman Nidhi (PM-KISAN) on Women Beneficiaries: A Case Study of Bihar

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The Pradhan Mantri Kisan Samman Nidhi (PM-Kisan) Scheme, an initiative by the Government of India, was launched in February, 2019 to provide financial assistance through direct benefit transfer (DBT) to small and marginal farmers across the country. The primary objective of the scheme is to ensure farmers' economic stability, reduce agrarian distress and promote agricultural productivity and the well-being of the agricultural community. Previous literature suggests that direct benefit transfer (DBT) programmes have a positive impact on the welfare of households. PM-Kisan is one such scheme, where farmers can spend the amount as per their willingness to fulfil their needs. The scheme provides Rs 6,000 per year in three equal instalments to the eligible farmers' bank account. The study is conducted in the Lakhisarai district of Bihar, which has a predominantly agricultural population. PM Kisan beneficiaries are predominantly male, and studies indicate that only 10% of women farmers have received PM Kisan benefits. The objectives of the study are to understand the impact of PM-Kisan on women beneficiaries. The study used both primary and secondary data to fulfil the goals. This is a qualitative study where 35 women beneficiaries of PM-Kisan and 35 non-beneficiaries in Lakhisarai district were studied to find out the impact. The study highlights that due to the patriarchal nature of land ownership, the number of women beneficiaries in this district is low. The study further suggests ways to encourage more women to benefit from the scheme.

Persistent Inequalities in Informal Employment: Disaggregated Evidence from India's Reform Era

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India's economic liberalisation in the 1990s triggered significant structural changes in the labour market, most notably a dramatic increase in informal employment. Currently, more than 80% of India's workforce operates outside formal structures, confronting wage disparities, restricted social protection, and economic insecurity. This study explores the dynamics of informal employment and its relationship with income distribution based on unit-level data from the 55th, 61st, and 68th rounds of the National Sample Survey Office (NSSO). It analyses inequalities along the dimensions of caste, gender, education, and religion to map disaggregated labour market inequalities in the reform period.

The results indicate an upward trend in income distribution over time among informal workers, especially where the rural background is an evident influence; it appears that old standbys of inequality remain. Although access to informal jobs has improved for women since COVID-19, the acute gender inequality remains. The evidence also shows a compound annual growth difference across decile groups, reflecting uneven gains in income between educational and social formations. However, despite this advancement, informal workers still suffer from structural disadvantages in healthcare, pensions, and comparatively stable jobs.

Finance for Micro-Finance of Women Entrepreneurs: Viability of using CSR Corpus

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Promoting women's empowerment is essential for both economic and social advancement. As a result, governments and organizations focused on women's progress have initiated various programs aimed at improving their roles and income in the industrial sector.

Corporate Social Responsibility (CSR) is dedicated to facilitating economic and social growth through corporate initiatives worldwide. In India, business leaders' commitment to CSR has had a beneficial effect on society as they invest in social initiatives. This investment not only enhances their brand reputation but also attracts a larger consumer base. With CSR emphasizing the importance of social development, women's empowerment has emerged as a key focus area.

This paper contends that promoting women's entrepreneurship is crucial for supporting female entrepreneurs and creating more opportunities for them to launch businesses. Achieving this goal can involve providing financial assistance, mentorship, and creating sustainable business strategies for the long term. In the realm of corporate social responsibility (CSR), there has been an increasing focus on initiatives that support women's empowerment. The Women Entrepreneurship Platform, a partnership between public and private entities, aims to offer ongoing support to

women entrepreneurs by leveraging a wide-ranging network of stakeholders within the ecosystem. Its objectives include fostering connections, bridging information gaps, and empowering women with pertinent and timely information.

This research investigates the viability of utilizing Corporate Social Responsibility (CSR) corpus as a financing source for micro-finance initiatives aimed at empowering women entrepreneurs. The study explores the current landscape of micro-finance for women, analyses the potential alignment of CSR objectives with micro-enterprise development, and assesses the practical mechanisms for channelling CSR funds into sustainable micro-finance models. The data was analysed for overall factor loading using varimax rotation, the maximum loading value for high interest rate was shown to have a value of 0.73, followed by complicated loan process, 0.68, and the least loading was found for lack of collateral, i.e., only 0.57.

Are Women Financially Secure in India? An Interstate Analysis Using NFHS Data

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This paper examines the financial security of women across Indian states using data from the National Family Health Survey (NFHS). It adopts a descriptive approach and heat maps to analyze interstate variations in key indicators such as employment status, ownership of assets, and access to financial services. The study aims to assess whether women in different parts of the country enjoy meaningful financial security and autonomy. The findings provide insights into the structural and regional disparities that shape women's economic well-being in India. The findings reveal that while some states have made strides in improving women's financial inclusion—particularly in expanding bank account access through policy initiatives—major challenges persist. Female workforce participation remains low or is declining in several regions, and deep-rooted structural barriers such as inadequate transport, limited flexible work arrangements, and the marginalization of informal labour continue to hinder progress. Although formal ownership of property has increased, particularly in housing, it does not always equate to control or economic empowerment. Land ownership—a critical marker of financial independence—remains largely male-dominated. Notably, states like Odisha, Tripura, and Kerala have experienced troubling declines in women's asset ownership. The analysis also highlights pronounced interstate disparities influenced by cultural norms, policy effectiveness, and local governance. Despite progress in financial outreach, gaps in decision-making autonomy, awareness of financial tools, and digital inclusion persist. Achieving true financial security for women in India demands targeted, context-sensitive interventions that address both structural and social barriers.

Qualitative Analysis of Gender and Development Projects in India: An Empirical Study

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Gender and Development is a very complex subject with cross relationships and underlying influences amongst its selected thematic areas. This research paper is an effort to understand the Implementation and Impact of World Vision India Gender and Development Projects in Uttar Pradesh, Rajasthan, Haryana, and Punjab; is a result of a series of strategic interventions by World Vision India to raise awareness among men, boys, women, girls, community and all concerned stakeholders; voice against and end gender-based violence; and bring-in gender equality. This is well connected towards addressing sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all and this is achieved by challenging the mind-set of the men and boys alike. This research study explores gender-inequitable attitudes among men and boys towards women and girls, and that location does not have much visible impact on this. This research also shows that there are many challenges in the communities to deal with the patriarchal mindsets and customary practices. While gender equality and equity have been broadly accepted, understandings are often superficial and families find it difficult to implement these new concepts at the household level and in intimate family relations. The paper shows a connect to the Sustainable Development Goals (SDGs) namely addressing SDG 5 and SDG 8. Working towards eliminating all forms of discrimination and violence against women in public and private spheres undertaking reforms to give women equal rights to economic resources and access to ownership of property. Promoting gender equality is a critical part of violence prevention. The relationship between gender and violence is multifaceted. Evidence suggests, however, that gender inequalities increase the risk of violence by men against women and inhibit the ability of those affected to seek protection. Though in its recommendations this paper suggests that further research is needed, to see that school, community and media interventions can promote gender equality and prevent violence against women by challenging stereotypes that give men power over women.

Beyond the Verdict: Livelihood Transitions in Post-Acquisition Singur

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The Singur land acquisition of 2006 remains one of India's most prominent cases of resistance against forced industrialisation. While the 2016 Supreme Court verdict returned 997 acres of prime agricultural land to its original owners, the victory proved largely symbolic. This paper examines the long-term livelihood transitions in Khasherberi, the most affected mouza, nearly two decades after acquisition. Drawing on in-depth interviews with 15 households conducted between

December 2024 and January 2025, it highlights how ownership restoration did not translate into productive revival.

Field evidence shows that much of the returned land remains unfit for cultivation, scarred by industrial debris, concrete foundations, and ecological degradation from the abandoned factory site. This has sharply reduced operational holdings, affecting both those who resisted and those who supported the project. In a region where agriculture once formed the backbone of economic and social life, the decline in cultivable land has triggered a gradual but deep shift toward non-farm livelihoods such as carpentry, iron casting, jewellery work, and casual labour; roles that were once supplementary but are now primary sources of income.

The study also uncovers the gendered dimension of this transition. Women, whose labour in sowing, harvesting, livestock care, and post-harvest processing was integral yet often invisible in pre-acquisition agriculture, have faced a marked reduction in mobility and work opportunities. The replacement of farm-based tasks with low-paid, home-bound activities like bidi-making or wax-setting has not only eroded economic participation but also adversely impacted health.

Existing welfare measures offer partial relief but are exclusionary, leaving out many landless labourers, unrecorded tenants, and those who initially supported industrialisation. Such schemes address immediate consumption needs without enabling long-term livelihood recovery or land rehabilitation.

The Singur experience underscores a critical policy gap: post-acquisition justice cannot be confined to legal restitution or one-time compensation. Without sustained investment in land restoration, infrastructure, and diversified livelihood support, the community risks permanent economic displacement even without physical relocation. Moreover, the case illustrates how movements that succeed in altering state policy may still falter in securing durable gains for their participants, raising questions about the afterlife of rural resistance in the absence of long-term solidarity and state accountability.

Assessment of Gender Based Human Capital and Empowerment in India: An Empirical Analysis

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Empowerment is a process of attaining autonomy & self-determination along with decision-making abilities in all aspects of life. Gender equity tries to ensure the equal opportunity for

both male and female, however, the cultural variation leads to a disparity in society. The present study aims to explore the disparity between male and female in respect of empowerment along with the level of human capital (Composition of Health and Education). The study has found an improvement in respect of empowerment as well as human capital, however it is also found that the gap of empowerment is reflecting an opposite result compare to human capital. It has revealed that, male and female education plays a crucial role towards reducing the empowerment gap. Based on the findings, it can be suggested that, government may spread the opportunity of education and job for female to prevent the gender-based disparity.

Furthermore, the study highlights that empowerment is not merely a by-product of human capital formation but also a necessary condition for ensuring that the benefits of education and health translate into equitable outcomes. While progress in human capital indicators is evident, without corresponding social and cultural transformation, the empowerment gap between men and women may persist or even widen. Therefore, policy interventions need to go beyond expanding access to education and employment and must also address deep-rooted social norms, patriarchal structures, and unequal power relations that hinder women's agency in both household and community spheres.

Mapping India's Health Insurance Landscape: Insights from 2019–21

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Universal Health Coverage (UHC) remains a central objective of health policy in India, intending to expand health insurance coverage to reduce the financial burden of healthcare on households. The launch of the Pradhan Mantri Jan Arogya Yojana (PMJAY) in 2018 marked a significant policy intervention designed to address these challenges. Nevertheless, out-of-pocket expenditure (OOPE) continues to constitute a significant share of healthcare financing, and overall health insurance penetration remains limited. Recent estimates indicate that only 33.9% of men and 29.8% of women have reported having a health insurance card, indicating a persistent low penetration. According to the NITI Aayog, the middle 30% of the population, commonly referred to as the “missing middle”, remains without any form of health insurance. Given the background, the current study aims to provide a detailed analysis of the characteristics of an individual missing out on health insurance using the NFHS-5 (2019-20) dataset, which is a demand-side perspective. Multinomial Probit estimates based on three options of health insurance: no insurance, at least one public insurance, or only private/other insurance, reveal that smaller household size and increasing age are associated with a reduced likelihood of investment in any form of health insurance for women. Socioeconomic and demographic determinants significantly influence health insurance coverage. Individuals from higher income groups, irrespective of gender, have a stronger inclination towards private insurance, whereas the opposite trend is observed among lower socioeconomic strata. Religious affiliation

is also a significant factor: Hindus and individuals from other religions are more likely to have public and other health insurance, while Muslims demonstrate lower rates of investment in health insurance. Caste-based disparities are evident, with men from other castes more inclined towards private insurance, in contrast to patterns observed among Other Backward Classes (OBC) and other caste groups. Notably, Women, irrespective of caste, exhibit lower investment in public insurance and more in private insurance schemes. In conclusion, the study highlights the need for targeted awareness and appropriate pricing of premiums for private insurance providers to improve the health insurance coverage, thereby improving the overall health insurance penetration in India.

JEEViKA and Caste Dynamics: A Cross-District Analysis through Caste Inclusion Index

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This paper presents a cross-district analysis of caste inclusion in Bihar's JEEViKA programme, focusing on the representation of Scheduled Castes (SCs) and Scheduled Tribes (STs) within Self-Help Groups (SHGs). Anchored in secondary data from Census 2011 and BRLPS (2025), the study constructs and applies a Caste Inclusion Index (CII) to measure the relative inclusion of SC and ST populations in JEEViKA across all 38 districts of Bihar. The institutional overview of JEEViKA highlights its federated structure, programmatic pillars, financial partnerships, and saturation-level outreach, which together constitute one of India's largest women-led rural empowerment initiatives. However, empirical analysis reveals stark disparities in caste-wise inclusion.

The SC-specific CII analysis uncovers a consistent pattern of exclusion, with most districts—despite full programme coverage—registering SC-CII scores below 0.15, categorised under 'Highly Exclusionary' or 'Severely Exclusionary' typologies. No district qualifies under the proportionate or over-inclusive categories, revealing that SC women, who constitute a significant demographic segment in Bihar, remain underrepresented in SHGs. Meanwhile, the ST-specific CII analysis, though showing slightly better representation in select districts like Kishanganj, Araria, and Katihar, does not substantiate any widespread over-inclusion or policy-driven targeting. Many districts with substantial ST populations also show under-inclusion, challenging the assumption that tribal areas receive proportionate outreach. By synthesising quantitative CII scores with spatial trends and typological classification, the paper reveals the symbolic nature of inclusion for many marginalized communities under JEEViKA. The findings underscore a gap between universal programme expansion and equitable access. The study concludes that unless caste-sensitive planning, demographic targeting, and institutional accountability mechanisms are systematically embedded into implementation, JEEViKA risks reproducing patterns of caste-based exclusion under the guise of rural development. The paper calls for urgent programmatic recalibration to bridge the inclusion–exclusion gap and to align the mission's outreach with its equity objectives.

Promoting Rural Livelihoods and Economic Wellbeing through Mushroom Farming: Reflections and Recommendations from Select Case Studies in Odisha

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Mushroom farming holds a significant promise as a sustainable, low-cost agricultural micro-enterprise with the potential to enhance rural livelihoods and improve the standard of living, particularly among small and marginal farmers. It requires minimal land, low investment, and offers high returns within short cultivation cycles. Mushrooms are rich in protein, vitamins, and minerals, providing both nutritional and economic benefits.

This form of farming is especially suited to women and self-help groups (SHGs), promoting entrepreneurship and inclusive development among the marginalized groups. It creates opportunities for income diversification, employment generation, and improvement in standard of living through processing and marketing. Moreover, mushroom cultivation utilizes agricultural waste as raw material, contributing to environmental sustainability. With appropriate training, market linkages, and policy support, mushroom farming can play a transformative role in uplifting rural communities, reducing poverty, and enhancing economic wellbeing and economic security in regions like Odisha and beyond.

This research paper explores the transformative potential of mushroom cultivation as a sustainable livelihood strategy in rural Odisha. Through in-depth case studies of select cases across diverse agro-climatic zones, the study assesses how small-scale mushroom farming contributes to employment and income generation, improved standard of living and empowerment of marginalized communities. The paper highlights the low investment requirements, rapid crop cycles, and adaptability of mushroom farming to marginal landholders, making it particularly effective in improving rural household economies. Drawing on field insights and the challenges such as market access, training and institutional support, the paper offers policy recommendations to integrate mushroom cultivation into rural development frameworks and skill-building programs, aiming to enhance the standard of living amongst the marginalized communities in underdeveloped regions.

Integrating Traditional Ecological Knowledge into Indian Knowledge Systems for Sustainable Livelihoods: A Case Study of Villages Near Prayagraj

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Rural India's socio-economic resilience is deeply interwoven with its wealth of Traditional Ecological Knowledge (TEK) — time-tested practices evolved through generations of intimate engagement

with the local environment. In the villages surrounding Prayagraj, TEK manifests in diverse forms: indigenous seed preservation, organic farming methods, traditional water harvesting structures, natural dyeing techniques, bamboo and earthen crafts, and ethnomedicine derived from local flora. However, these practices face erosion due to modernization pressures, declining intergenerational transmission, and lack of formal market integration.

The Indian Knowledge Systems (IKS) initiative, as articulated in the National Education Policy (NEP) 2020 and spearheaded by the Ministry of Education and AICTE, provides an institutional framework for the preservation, validation, and revitalization of India's traditional knowledge. Within this framework, TEK can be systematically documented, scientifically validated, and economically valorized, offering a dual benefit — livelihood enhancement and ecological sustainability.

This study aims to explore the potential of integrating TEK into the IKS framework to enhance rural livelihoods and promote community well-being in selected villages near Prayagraj. Specifically, it will identify key TEK domains relevant to agriculture, water management, handicrafts, and healthcare; assess their ecological and economic viability; and examine pathways for commercialization aligned with sustainability principles. The research will adopt a mixed-method approach — ethnographic fieldwork to capture cultural contexts, participatory rural appraisal (PRA) to involve local stakeholders, market analysis to identify demand opportunities, and policy mapping to connect community practices with governmental and non-governmental support mechanisms.

The anticipated outcomes include: comprehensive documentation of TEK practices in the study villages, highlighting their historical, cultural, and ecological significance; an assessment of the contribution of these practices to income diversification, food security, and environmental stewardship; and recommendations for IKS-aligned commercialization strategies, including Geographical Indication (GI) registration, cooperative-based production models, integration into AYUSH and organic product markets, and promotion through eco-tourism and cultural tourism.

By situating TEK within the IKS framework, this research shows how traditional wisdom, combined with modern systems, can drive inclusive and sustainable rural development in *Viksit Bharat @2047*. The case study of Prayagraj's villages demonstrates how local heritage can be revitalized as a living, income-generating resource, aligning with India's commitments to the SDGs. Ultimately, the study reimagines TEK as a dynamic driver of livelihoods, cultural continuity, and environmental balance.

Shifting Sands: Occupational Changes and Employment Dynamics in Two Rural Villages of Punjab

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The occupational shift in the selected villages recognises the idea of structural transformation of village economy during the study period from 2001 to 2017. It is generally held view that village

economy shifts towards modern economic growth as Kuznets argued. There are various factors which influence the structural transformation of any region. The study is based on census survey of two villages selected from two districts on the basis of infrastructure development index, Inter-village, inter-caste and inter-economic category differences in the case of occupational change and employment is quite visible. The traditional occupation and caste also play a fundamental reason that who is shifting the occupation and who is not. The households who own land did not shift as the landless households shifted from farm to non-farm occupations. The booming sectors construction from the secondary sector and tertiary sector are gaining ground for employment which is informal in nature. The field investigation revealed the fact the pace of structural transformation is not same for two selected village and the inter-household choices are not same in the context of occupational shift.

Moreover, the evidence suggests that structural transformation in rural areas is not a uniform or linear process, but one mediated by access to resources, education, and social networks. While infrastructure and market linkages provide new opportunities, caste dynamics and land ownership patterns continue to shape the extent and nature of occupational mobility.

Employment and AI in India's Apparel Manufacturing Sector

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The global nature of work is rapidly changing due to the rise of digital tools, automation, and artificial intelligence (AI). These changes offer several benefits, such as increased productivity, better quality, and safer workplaces. However, these rapid changes also pose risks for low-skilled workers, particularly women employed in labour-intensive sectors such as garment manufacturing. In countries such as India, the garment sector has been a major source of employment for women. Given this background, the paper aims to examine the current employment structure of the garment industry with respect to job roles, working conditions, and the education and skills of the workers. The objective is to explore the impact of technological transformation on the garment industry and its workers. The paper is based on the secondary data sources together with journal articles, working papers, policy briefs, and books that discuss employment, gender, and technology. The paper found that apparel manufacturing units depict slow mechanisation, and men are more likely to occupy crucial positions such as those of technicians and machine operators. Additionally, emerging jobs require specialised training, digital literacy, and higher educational qualifications. As a result, women continue to be excluded from higher-value jobs. There is a need for policy interventions that support enterprise upgrading, women's skill development, and reforming workplace norms; otherwise, women may find themselves excluded from the future of work in this sector. This paper is a part of an ongoing IHD-SANEM project on the future of work, sponsored by LirneAsia.

Impact of Everyday Political Violence in West Bengal: A Diagnostic Study

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Theoretically, there is no co-relation between democracy and violence. However, historically, violence is very much connected with democratic politics also. Over the years, political violence has been applied in different forms in the democratic practices in West Bengal. The regime changes but political violence remains the basic feature of West Bengal politics. Violence has a long political and cultural legacy in West Bengal, an Indian province. Political violence has a direct impact on the functioning of the opposition parties. The last rural government elections held in West Bengal in 2023 witnessed 70 people dead. More than 2,500 people were seriously injured. Electoral violence has caused huge damage to properties to large numbers of rural people. Many people have been forced to leave their homes and seek shelter in relief camps due to political terror. Children and women were not spared from election violence. Violence in West Bengal politics was reinforced by different sources during the TMC regime. The violence has changed its character over the period. Before the TMC regime, violence had been applied by the ruling party and its government machinery for political purposes. However, during the TMC regime apart from political purposes, violence was also utilized for the economic benefit of the leaders and cadres of the ruling party. The challenges for researchers are to quantify the degree, type, and nature of political violence. Why political violence has taken place in the everyday politics of Bengal for a long back? Why political violence has become permanent feature in the political culture of West Bengal politics? what are the sources of political violence in Bengal politics? What are different types, forms and nature of political violence in West Bengal politics? Why does it seem to have gotten worse? What are the major implications of political violence on opposition space in West Bengal? What are the major implications of political violence in the functioning of panchayats in West Bengal? Keeping in view these questions, the primary objective of this paper based on ICSSR research project is to draw a landscape of the nature and extent of political violence in West Bengal politics as well as its impact on opposition space, and also in the functioning of panchayats in West Bengal. This research article based on both qualitative and quantitative methods.

The Question of Migration and Identity: The Case of Assam Migrants in Bengaluru

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Assam is gifted with rich natural resources and is home to one of the richest biodiversity's on the earth. However, persistent regional imbalances, underdevelopment, huge unemployment rate, poor status of industrial expansion, and natural calamities have hindered the development of the state, forcing people to explore other places for a better livelihood. Migration from a unique state like Assam to a metropolitan city like Bengaluru in the hope of better paying jobs is expected to be accompanied by numerous challenges. In reality, migration is eventually responsible for altering their cultural practices and norms and thereby the very base of their identity. This becomes more significant especially in the Indian context as identity is built up from the internal separation of communities along with other universal factors like culture, traditions, roles and practices.

In this context, the study locates the push and pull factors of migration from Assam to Bengaluru, while understanding how and to what extent migration has helped the respondents achieve their objectives. Secondly, the article tries to understand the perception of migration from the respondents' perspective. Thirdly, it attempts to understand the concept of identity from the respondents' perspective and the ways of retaining it in the destination. The study is based on both primary and secondary data. Primary data was obtained through a mix of qualitative and quantitative methods, which included focused group discussion, structured interview schedule, and snowball sampling technique. The findings of the study reveal that migration from Assam to Bengaluru is mainly a rural-to-urban phenomenon and is cyclical in nature and that the economic status of migrants has improved significantly. Post migration and also that they associate identity with their culture. The study further shows that migration has not brought about a major shift in their identity and that they maintain their identity through informal networks by celebrating their festivals and getting together with other fellow members of the state on special occasions.

Impact of Digital Platforms and E-Commerce – Evaluating the Role of Technology in Expanding Economic Opportunities in Rural Areas

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E-commerce has demonstrated its capacity to be a transformative instrument in the economic advancement of rural India. It has allowed rural entrepreneurs to tap into new markets, fostered job creation and aided in income generation. Nevertheless, for e-commerce to fully realize its

potential in rural regions, considerable challenges need to be addressed. These challenges encompass enhancing digital literacy, broadening internet infrastructure, and establishing trust in online transactions. Moreover, e-commerce platforms ought to contemplate customizing their services to cater to the distinct requirements of rural consumers and entrepreneurs.

E-commerce has emerged as a pivotal instrument in the economic advancement of rural India. It has facilitated rural entrepreneurs in accessing new markets, led to increased job opportunities, and contributed to income generation. Nevertheless, for e-commerce to fully realize its potential in rural regions, considerable challenges must be addressed. These challenges encompass enhancing digital literacy, expanding internet infrastructure, and establishing trust in online transactions. Additionally, e-commerce platforms ought to consider customizing their services to cater to the distinct needs of rural consumers and entrepreneurs. The case studies of several initiatives such as Amazon Karigar, Flipkart, and Gulmohr illustrate that with appropriate support and policies, rural India can greatly benefit from the opportunities presented by e-commerce. The government's involvement in improving infrastructure, boosting digital literacy, and promoting rural entrepreneurship is essential to ensure that the advantages of e-commerce reach all segments of society. The future of rural e-commerce in India hinges on the creation of a more inclusive digital economy where rural consumers and businesses are not merely passive participants but active contributors to both national and global markets. The increasing significance of digital platforms in rural economic development underscores the immense untapped potential within India's rural economy. With additional investments in infrastructure and education, e-commerce can propel sustainable and inclusive economic growth in rural areas, ultimately reshaping the socio-economic landscape of India. The conclusion highlights the potential of e-commerce to foster inclusive economic growth, but also underscore the challenges of digital illiteracy, infrastructure deficits, and market access that rural areas still face.

Tempo-Spatial Pattern and Risk Factors of Gender Disparity in Infant and Child Mortality in India

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Child survival has significantly increased in recent years in India, still the country has the highest global numbers of under-five fatalities. Males have been at a greater risk of mortality than their female throughout their entire lifespan. The high mortalities among males in the early childhood have been attributed to male-female biological differences. But historically, South Asia has been noted for having a male-biased child-sex ratio. While there is an excess in female under-five mortality across all Indian states, discrimination is particularly severe in the northern States. The

issue of sex differentials in child mortality has remained a major hurdle for achieving gender equity and a critical component of SDG targets. The present study aims to assess the temporal and spatial pattern and risk factors of mortality by gender in India using three rounds of NFHS data.

The basic data for this study has been used from the three rounds of National Family Health Survey (NFHS). The NFHS-3 was conducted in 2005-06, NFHS-4 was conducted in 2015-16, and the NFHS-5 was held in 2019-21. In this study logistic regression analysis has been used to find out probability of occurrence of infant and under five mortalities according to selected predictors.

India has made remarkable progress in reducing under-five and infant mortality rates. Despite this progress, regional disparities persist, with states like Kerala showing exemplary progress while others, such as Uttar Pradesh, Bihar, and Chhattisgarh, continue to face significant challenges. Gender disparities have also decreased, although emerging gender gaps in rural areas are a concern. Factors like maternal education and access to antenatal care play crucial roles in reducing mortality risks, highlighting the importance of maternal healthcare access and education.

Resilient Local Food Systems and Capabilities for Sustainable Development in Uttarakhand

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This paper explores how resilient, locally rooted food systems in Uttarakhand can serve as a foundation for achieving nutrition, livelihood, and ecological security in alignment with the Sustainable Development Goals (SDGs). Drawing on Amartya Sen's Capability Approach and recent literature on transformative resilience, the study argues that food resilience in mountain regions must go beyond short-term adaptation to build systems that expand human freedoms and capabilities.

Using a combination of secondary data, regional policy analysis, and studies from Uttarakhand, the paper identifies key challenges, including the marginalization of traditional crops in food provisioning schemes, limited mountain-specific agricultural support, and institutional fragmentation across food, nutrition, and climate programs. At the same time, promising models—such as women-led food enterprises, local millet procurement, and climate-adaptive cropping practices—demonstrate how capability-enhancing interventions can promote both nutrition security and systemic resilience.

Furthermore, strengthening local food systems in Uttarakhand requires integrating indigenous knowledge with policy frameworks to ensure that community-driven practices are not sidelined. Recognizing the cultural and ecological value of traditional food practices can bridge the gap between sustainability goals and lived realities, fostering both inclusivity and long-term resilience.

Female Specific Alternate MPIS: An Inter-State Assessment

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The analysis sheds focus on the channels of non-monetary deprivation, faced by women, modelled using the multidimensional poverty index (MPI). This alternate MPI employs 20 indicators, double the conventional number of 10 indicators, of which some exclusively capture the deprivations that women disproportionately face, viz. use of dirty cooking fuel, lack of a ventilated kitchen, use of rudimentary menstrual hygiene products etc. Some other indicators like roofing and flooring material, toilet facility etc. which are shared resources that derive their value from use by all members in a household are employed in the analysis to understand the effect of economies of scale in household consumption and whether it makes any difference to deprivations among women.

The inference from the index scores resulting from the analysis proposes that the magnitude of MPI score from individual specific alternate MPI, of 0.225 is substantially higher than the magnitude of MPI from shared goods specific MPI (of 0.144) or the alternate MPI which combines all indicators (0.046). Nevertheless, the rankings and patterns across states and union territories are retained. Southern states and union territories such as Kerala, Lakshadweep and Puducherry consistently record lower MPI scores and consequently a higher ranking across all three indices, whereas states like Bihar retain higher MPI scores and lower rankings.

Despite the ranking pattern being consistent, the wide divergence of scores, with the individual specific MPI reporting the largest range from 0.019 to 0.374, and the alternate MPI (combining individual specific and shared goods specific indicators) ranging from 0 to 0.117, suggests that it is still a useful exercise to delve into the gap left by the lack of focus of interpersonal inequality by MPI and its implications for state-wise development patterns. Its flexibility as an index, though not without concerns, provides ample potential for exploration of disaggregated channels of deprivations.

The SHG Model: A Panacea or a Problem for Microcredit and Inclusion

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Microcredit, a powerful tool for poverty alleviation, involves providing small loans to low-income individuals, primarily women, who lack access to conventional banking services. The grassroots-level institutions in rural regions, especially in India, were supported for financial inclusion by microcredit services. Self-Help Groups (SHGs) — an informal homogeneous group consisting of 10–12 women in rural regions—are supported by various microcredit institutions. The absence of

formal financial institutions within these rural landscapes creates substantial barriers to economic growth and social mobility. The women-based SHG is unique as a social collateral for group-based lending. Further, it leverages peer pressure to ensure high repayment rates. Early literature propagated that such a model could lead to a decline in poverty.

Mahajan and Nagasri (2001) provide a retrospective look at the growth of microfinance in India in the late 20th century, describing the early, mission-driven approach of NGOs as a highly effective and self-contained solution to the financial exclusion of the poor. Additionally, *D'Silva and Bester (1998)* also provided a positive outline of microcredits ability to address poverty and women's disempowerment comprehensively. The cases of earlier women's groups, such as Shri Mahila Sewa Sahakari Bank (SEWA Bank) and the Working Women's Forum (WWF), were taken into consideration.

However, more recent and rigorous studies have yielded mixed results. It suggests that its impact, though often positive, can be modest and highly context-dependent, sometimes leading to over-indebtedness (*Banerjee, Duflo, Glennerster, & Kinnan, 2015*). This evolving body of work underscores a shift from a purely welfarist view to a more nuanced understanding of microcredit as a complex financial and social instrument. To understand this complex financial structure, the case study of Gujarat has been undertaken.

The state, with a 42 per cent urbanisation rate that is higher than the national average (31%), proved to be a good case study for identifying how these women's groups offered solutions in the state's rural regions. It challenges the conventional assumption that SHGs are only effective in states that are predominantly agrarian and less developed. The study can provide a scenario on how SHGs address the specific needs of peri-urban and rural populations that are often overshadowed by the state's industrial and urban growth. Additionally, the state is the backbone of the Indian economy and has a tradition of strong trade, commerce, and entrepreneurship. This background can be provided to be unique for studying SHGs unique. The research can explore how these women's groups, beyond simple savings and lending, leverage the state's economic dynamism. Indeed, historical reasons cannot be ignored, as Gujarat has a strong history of empowering women through grassroots organisations. Ahmedabad, the financial capital of Gujarat, had the opportunity to have a pioneering organisation in microfinance named the Self-Employed Women's Association (SEWA). This model proved to be a historical success in the case of microfinance services for women, specifically in rural regions, before the government initiative. SEWA's model of providing financial services, skill development, and social security to poor, self-employed women laid a strong foundation for the SHG movement in the state. A case study on Gujarat, therefore, not only examines the present-day SHG model but also places it within this rich historical context of women-led economic movements. Further, the state has a uniquely rich geographical background with the longest coastline in India. This may provide a unique style of employment opportunities, especially in the primary sector. Further, it is known for its rich history,

vibrant culture, and robust economy. It was also known as the Manchester of the West.

In this backdrop, the structural dynamics and comparison are presented to understand the basis of the SHGs model. The research paper is based on secondary data provided for the state of Gujarat, widening the footprint of SHG institutions, offering insights into how administrative outreach and community demand have together built a scalable model of rural inclusion. This coordinated expansion indicates both administrative capacity and grassroots demand. These foundational components (SHGs, VOs, CRPs, and household coverage) together reflect the depth and scale of social inclusion under the NRLM framework (*APMAS, 2006; MoRD, 2022*). It highlights the structural changes over the period of time in SHGs with respect to mobilisation and supporting layers (VOs). It analyses the social category distribution of SHGs to identify social inclusion. It also analyses the funding pattern for financial inclusion.

The case study of Gujarat indicates that the decentralised SHG model has been highly effective, not only for individual families but also for the region's overall development. Data show that the model has spread successfully among tribal communities and methodically increased funding to meet both immediate needs and future micro-enterprise development. The large number of SHGs available in tribal districts such as Dahod and Chhota Udaipur verifies the satisfactory congruity of the SHG Model with its mission of empowering tribal communities, especially women. Additionally, higher supportive finance, such as a revolving fund, is provided to the ST/SC category than to others. This is indeed a step towards equity.

This indicates that developed regions with high urbanisation and industrialisation can serve as a solid foundation for the success of grassroots-level institutions such as SHGs. Nevertheless, the study's conclusions are restrictive in scope and period.

Attitudes and Norms about Intimate Partner Violence: What Makes Women More Impressionable?

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There is growing consensus that violence against women is a public health concern of epidemic proportions. Extant literature provides strong evidence that attitudes about what is an acceptable behaviour pattern is a prominent predictor of the incidence of intimate partner violence (IPV). Similarly, prevalent attitudes about IPV also become important predictors of individual attitudes

towards IPV, thus serving as risk factors for women to be victimized. The trouble with such attitudes is that living in societies that justify acts of violence as a partner's right to abuse the woman when she deviates from what is considered socially acceptable often results in influencing beliefs about what is personally acceptable. We attempt to understand how exposure to gendered patterns in societal attitudes towards IPV affects one's own attitudes about IPV. In other words, if there are gendered patterns in the attitudes of women about the acceptability of IPV within their social network, to what degree does it make a woman impressionable about IPV being justified?

We utilize nationally representative data from the latest National Family Health Survey (NFHS-5) conducted in 2019-21 for India. We exploit the plausibly exogenous variation in the neighbouring women's exposure to their parental violence as an instrument for average neighbouring women's attitudes about IPV and estimate our desired causal effect on a woman's own attitudes about IPV.

The results point to consistently large positive effects of peer attitudes on one's own attitudes about IPV. We note that a one sd increase in average neighbouring women's attitudes towards IPV leads to a statistically significant increase of 0.36 sd in the likelihood of a woman's justification of IPV.

The paper provides new insights into social effects/network/neighbourhood effects of attitudes about IPV. It records the important relationship between the degree of influence of a woman's peers on her own attitudes regarding IPV. The pattern that emerges underscores the close association between a woman's agency, empowerment and how impressionable she is. As such, to arrest the perpetration of gender-biased social norms, our results reinforce the importance of formulation and enhanced implementation of policies targeted towards women's empowerment through improvement in female school enrolment, continuing education, labour force participation and fair access to resources.

Work-Life Balance of Indian Women: Evidence from the Time Use Survey 2024

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Time use is widely recognised as one of the most effective methods for capturing the daily activities of individuals, encompassing both paid and unpaid labour. Understanding the time distribution of women provides insights into the disproportionate burden they bear in unpaid work. Analysing these patterns is essential to assessing women's work-life balance, a key indicator of their overall well-being.

This study aims to examine the daily activity patterns of Indian women and identify the socio-demographic and economic factors influencing their work-life balance using data from the Time Use Survey (2024). The nine major activity categories from the survey were grouped into two broad domains: 'work' and 'life'. To quantify work-life balance, a work-life ratio was developed, based on which individuals were classified into three categories: life-heavy, balanced, and work-

heavy. A multinomial logistic regression model was employed to determine the factors associated with women's likelihood of falling into each of these categories.

The findings reveal that within the 'work' domain, women spend the most time on unpaid domestic work, while in the 'life' domain, the largest share of time is dedicated to self-care. Rural women tend to allocate more time to work-related activities, whereas urban women spend relatively more time on life-related activities. The regression analysis indicates that married women are four times more likely to fall into the work-heavy category compared to the never-married women. Additionally, as caste hierarchy increases, the probability of Indian women falling in the life-heavy category increases. Other significant predictors of work-life balance categorisation include household size, place of residence, marital status, usual principal activity status, and income quantile.

Conceptualizing Social Exchange Theory for Ladakh's Tourism Sustainability

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Ladakh, an elevated region located in the northernmost stretch of India, is famous for its natural beauty, cultural richness, and distinct wildlife. It is vital to lay down a strategic framework of sustainable tourism which is advantageous to both tourists and local inhabitants and guarantees the preservation of the pristine natural beauty and rich cultural heritage of Ladakh for future generations. The innovations in Ladakh's tourism industry are quite at a backseat regarding sustainable practices and social exchange processes involving host-guest interactions. The identified areas include various tourism practices, community measures, technological experiences, eco-tourism, infrastructural development, awareness initiatives, government support, and collaborative actions. However, the areas mainly focused on include geo-tourism, tourist influx, private tourism facilitation services, and Central Government programmes. The conventional impact dimension is that the economic gains are the trade-off for the socio-cultural and environmental effects of tourism development. The trade-off between costs and benefits in line with changes in social values, economic structure, and ecological capacity has not been sincerely accounted for which led to the unregulated expansion of Ladakh's tourism sector. In addition, the social exchange theory combined with tourism sustainability elucidates that exchange processes may have a positive or negative outcome depending upon guest-host interactions, dimensional interlinkages for relationship drivers, behavioral differentials, and extent of sustainability in tourism development. This study advocates that Ladakh's tourism policy need to shift from volume-based growth models to value-based, equity-sensitive models. This demands integrated governance across sectors and scales, supported by real-time information, local engagement, and intergenerational morality. Tourism in Ladakh should never be an extractive force but a regenerative one—restoring the region's ecological capital, building community dignity, and respecting the sacred interdependence between people and place. Only such a strategy can

ensure a future where Ladakh flourishes as a living heritage and an icon of sustainable tourism in high-altitude landscapes. Following this, the study suggests a framework to supplement policy design for integrating social exchange with environmental sustainability for tourism development and management in Ladakh which will help regulatory authorities in maintaining economic growth and preserving the fragile region at the same time.

Gender & Social Dimension of Livelihood Opportunities in India: Need for a Holistic and Inclusive Approach to Address Multiple Barriers

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In India, the pursuit of becoming a \$5 trillion economy hinges not only on economic growth but also on inclusive and equitable development. Marginalized communities—women, Dalits, Adivasis, religious minorities, persons with disabilities, and others—face systemic and overlapping barriers that limit their access to secure and dignified livelihoods. These barriers are deeply embedded in historical patterns of social stratification, economic exclusion, and institutional neglect.²

Livelihoods are not merely a means of income—they are fundamental to dignity, autonomy, and social empowerment. However, despite significant progress in poverty reduction and employment generation initiatives, the benefits of these programs have not equitably reached the most disadvantaged. The interplay of gender, caste, class, and geography continues to influence access to resources, opportunities, and decision-making.

India's existing livelihood and skill development programmes often fall short due to cultural, institutional, and structural challenges. Tokenistic measures or top-down approaches fail to dismantle the entrenched systems of inequality. What is needed is a transformative, intersectional, and inclusive policy approach—one that centres the lived realities of the marginalized and ensures their meaningful participation in the economy.

To move forward, economic policies must be reimagined to address not just income disparities, but also issues of representation, access to assets, legal protections, and recognition of unpaid and informal work. Holistic strategies that promote gender justice and social equity are not only morally imperative—they are critical to sustainable economic growth and social cohesion.

Analysing the Multi-Sector Action Plan of Nepal for Non-Communicable Disease Prevention and Control Through a Sociological Lens

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The *Multi-sectoral Action Plan for the Prevention and Control of Non-Communicable Diseases (MSAP) 2021–2025* by the Government of Nepal outlines a holistic strategy to combat rising non-communicable

diseases (NCDs), such as cardiovascular diseases, diabetes, cancer, and chronic respiratory conditions. The plan emphasizes “health in all policies,” incorporating prevention, behavioural interventions, disease surveillance, and cross-sectoral collaboration. However, a sociological analysis reveals significant implementation gaps.

Geographical inequities hinder progress, particularly in rural and mountainous regions like Karnali and Sudurpashchim, where health facilities lack basic diagnostic tools and trained personnel. Although the plan promotes decentralization, disparities in access persist. Behavioural strategies, such as discouraging tobacco and alcohol use, often overlook structural constraints like poverty and food insecurity. For instance, processed foods are preferred by low-income families due to cost and convenience, not lack of awareness.

The plan inadequately addresses gendered health disparities. Women, especially in regions like the Terai, face barriers such as domestic burdens and financial dependence, often delaying or avoiding NCD screenings. Additionally, enforcement-heavy alcohol policies ignore the cultural and economic role of locally brewed alcohol in Indigenous and Dalit communities, sometimes deepening poverty and creating unsafe black markets.

Although Nepal’s federal system offers potential for localized responses, implementation remains inconsistent. Some municipalities, especially in Bagmati Province, have initiated community-level interventions, but others lack funds or clear guidance. Multi-sectoral collaboration, while central to the plan, remains weak; non-health ministries seldom engage in coordinated efforts.

Monitoring and evaluation systems also fall short, with outdated data collection methods and insufficient disaggregation by caste, gender, or region. Community involvement, although emphasized, is often tokenistic, with affected populations rarely consulted in policy design. Resource constraints further limit progress, as many health facilities lack essential medicines and trained staff. While isolated local successes show promise, systemic change requires stronger political will, adequate funding, and inclusive policy design to realize the MSAP’s goals.

Gender in Water and Sanitation

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In India, gender, caste, class, and religion all shape how people access and control water and sanitation. For many communities, especially Dalits (16.6% of India’s population), the struggle isn’t just about getting water — it’s about fighting deeprooted social barriers. Even though the law guarantees equality, Dalits are still often denied basic services. Historically, water has been used as a tool of segregation, and when gender is added to this equation, women face an even tougher challenge — especially in times of crises like floods or droughts.

Globally, the role of women in managing water was acknowledged decades ago — at the UN Water Conference in 1977 and the 1992 Dublin Conference. But in India, policies for years ignored women’s contributions. In many households, women are the main managers of water — collecting it, using it for cooking, cleaning, farming, and caring for family health. They know where it comes

from, its quality, and how to store it. Yet, when it comes to decisionmaking or formal jobs in water governance, men dominate.

Margreet Zwarteveen's 2011 paper *Questioning Masculinities in Water* highlights how irrigation systems and related jobs have historically been seen as “male” spaces, reinforcing ideas of masculinity. She calls for more women engineers and a deeper understanding of the cultural politics in water management. But simply adding more women without changing bigger structural problems risks tokenism. True change means addressing why women are excluded in the first place and how caste, class, and location all affect resource access.

The 2020 Draft National Water Policy tries to address these gaps under its Gender Equality, Equity, and Social Inclusion (GESI) section. It recognises that earlier policies ignored marginalised groups, acknowledges the heavy burden water scarcity places on women, and suggests including them in planning. Still, women's roles are often boxed into “household” or “social equity” categories, leaving out their major contributions in agriculture, livestock, and fisheries. The policy doesn't clearly recognise women's water rights or create detailed frameworks for fair resource distribution.

Thus, despite technological and policy progress, deep gender inequalities remain. Representation alone isn't enough; what's needed are real, systemic reforms that dismantle structural barriers. Policies must be tailored to local social realities, making space for women — especially from marginalised communities — to participate meaningfully at all decisionmaking levels, from the village to the international stage. Only then can water and sanitation policies be truly fair and inclusive.

Performance and Impact Assessment of RKVY in Uttarakhand: A Secondary Data Analysis (2007–2024)

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Agriculture is the primary source of income for approximately 55% of the population in India. It continues to sustain livelihoods despite its declining GDP share. The Economic Survey 2024–25, agriculture depicts 46.1% of employment in 2023–24, and in rural areas the figure was 59.8%. The agriculture sector contributes about 16% share to India's GDP. Growth in agriculture is estimated to be two to four times more effective in raising income among the poorest compared to other sectors. Agriculture remains central to poverty reduction. Agriculture in Uttarakhand show vast difference between plain and hills. Mountain agriculture, however, faces unique challenges due to its topographical, climatic, and socio-economic constraints, necessitating tailored policy responses.

Uttarakhand shows the difference between the plains and the hills agriculture methods and patterns. The Department of Horticulture, Government of Uttarakhand reports shows that agriculture contributes approximately 23.4% to the state's GDP, with an average landholding size of 0.95 hectare. In hilly areas More than 85% of cultivation regions is rain-fed, that means productivity of agriculture sector in hilly areas is mainly dependent on monsoon. Small, fragmented landholdings and rural out-migration further hindrance agricultural development. To solve these

problems targeted interventions such as the Rashtriya Krishi Vikas Yojana (RKVY), launched in 2007 and later restructured as RAFTAAR. Rashtriya Krishi Vikas Yojana promotes development and growth. It provides financial aid to states so that they can implement their projects.

The present study undertakes a comprehensive and detailed evaluation of RKVY performance in Uttarakhand using secondary data spanning 2007–2024. This study evaluates the fund efficiency and effectiveness in allocation and effectiveness across hill and plain districts of Uttarakhand, compares agricultural productivity between 2024-25 RKVY and highlights differences between hill and plain districts performances. This Study also compare outcomes of nine hill and four plain districts. The methodology of this study employs descriptive statistics, trend analysis, and correlation, drawing on sources such as Unified Portal for Agricultural Statistics, Agriculture Dashboard, and district-level RKVY reports.

Female Employment and Earnings in Uttarakhand

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Based on unit level data from seven rounds of the Periodic Labour Force Surveys (PLFS) in India, our paper examines the pattern of employment and earnings of the workforce in rural Uttarakhand between 2017-18 and 2023-24. With its emphasis on rural women, it investigates whether the increase in employment as reflected in rising labour force and workforce participation rates, is translating into improved economic conditions for the working people of Uttarakhand. The precariously low and declining levels of real income of the self-employed rural women in UK – the main driver of the increase in female employment - manifests a worsening of their economic condition in the six years between 2017-18 and 2023-24. The paper further explores the reasons underlying the persistence of self-employment as the dominant employment status, especially among women. It highlights the asymmetry in gender roles within the household that leads to asymmetry in labour market outcomes outside the household. While men can and indeed do take up paid employment outside of their homes, the disproportionately high burden of unpaid domestic duties and child and elderly care work on women is a major obstacle which prevents them from taking up more lucrative paid employment opportunities, thereby confining them to the self-employed status. At the same time, it stresses on the lack of remunerative employment opportunities for both men and women in rural Uttarakhand. More than anything else, it points towards an urgent need for state intervention to address the crucial issue of providing remunerative jobs, especially for women in a state like Uttarakhand where both farm and non-employment opportunities are extremely limited.

Bridging Gender Gaps in Building Climate Resilience: An Audit of Entrepreneurship and Livelihood Policies and Programmes

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Climate change and disasters disproportionately impact women especially in developing countries such as India (UN Women, 2025). By 2050, climate change may push up to 158 million more women and girls into poverty, which is 16 million more than the total number of men and boys (Gender Snapshot Report, 2024). Entrepreneurship, employment and livelihood programs such as the National Rural /Urban Livelihood Mission (NR/ULM) and Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) have the potential to address these gendered vulnerabilities by enhancing women's economic resilience and adaptive capacity to face climatic stresses. This study undertakes a gender audit of these two programs using the Gender Analysis approach to examine how various Gender Analysis Frameworks influence gender-based outcomes in terms of women's vulnerability and capacity to adapt to climate change and other environmental stressors.

Drawing from literature and empirical studies conducted across various Indian states between 2011 and 2025, the paper assesses the socio-economic impacts on women through audit using selected Gender Analysis Frameworks (GAFs). These help to identify gender-based differences in the roles, responsibilities and access to resources and their impact on lives and well-being. The analysis reveals a very high impact on women's income enhancement and diversification of income from agriculture, livestock, fisheries, and agribusiness. High to moderate impacts were seen on domains such as household consumption, savings, time spent on productive activities by women, children's education and participation of women in public spaces. The gender audit finds that the rules, activities and processes under these programs are gender sensitive as well as positive, there are positive outcomes for women in terms of increased access to and control over monetary resources, participation in Self Help Groups, enhanced decision making and improved health, nutrition and education of children. However, the programs still face many challenges which keep hindering them from becoming truly gender transformative. These are limited participation of women in planning, implementation and monitoring, inadequate formation of SHGs, wage disparities, inadequate crèche facilities, male-biased work allocation, patriarchal norms in family and society, all of which hinder the full participation of women. In conclusion, both NR/ULM and MGNREGA hold promise as a tool for climate resilience and gender empowerment, but require a strategic shift towards more inclusive and transformative gender policies and implementation practices. Both programs have created meaningful pathways for women's economic empowerment,

their transformative impact on climate adaptation and gender equity can be significantly amplified through targeted reforms and sustained institutional support to foster awareness, inclusion, bridge gender gap and accountability.

The Skewed Gender Gap in Education & Labor force Participation and Its Impact on Income: An Inter-State Study in India

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Human capital proxied as education is one of the several determinants of output growth through the spillover effects of educated labor force. Assuming that the distribution of innate abilities among male and female is equal, the skewed gender ratio of educational achievements and labor force participation leads to the formation of less efficient pool of workforce having a negative impact on output growth through lowering the average quality of human capital (Klasen 2008). More recent research has identified large productivity gaps in the economies as well. These gaps tend to be much larger in developing countries than in advanced economies. They are indicative of the allocative inefficiencies that reduce overall labor productivity. Gender-biased or “gendered” labor market, as we call them, is not only a problem for women workers but for the policy makers also. It is indicative of inefficient resource allocation. They also trap economies on the so-called low road of labor-intensive growth, making it difficult to garner the full fruits of growth, or to ensure its sustainability.

The present paper focuses on state wise identification of gender gaps in various levels of education and gender gaps in education level wise labor force participation. Further, the impact of gendered labor force on output growth has also been captured. The relationship of gendered human capital and economic growth is aimed to be captured using panel-data of 20 states of India. The data set contains observations for the period of 2017-18 to 2021-22, prepared from various sources. Enrolment data for various level of education is taken from MHRD reports, data on labor force participation rate is taken from NSSO surveys and data on gross fixed capital formation as well as on Net State Domestic Product is captured from RBI- Handbook of Statistics on Indian States at the base reference year 2011 to 2012. To differentiate the impact trend of human capital on output growth, two separate pools of states have been created for the analysis underlying the broad division of human capital achievements across states. Following MRW specifications, Augmented Solow Model is used through panel data regression equation in order to capture the impact of education level wise gendered labor force participation and found strong positive impact of educated female labor participation on output growth.

Microfinance, Digital Banking and ESG: Economic Mobility and Resilience

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The intersection of microfinance, digital banking, and ESG (Environmental, Social, and Governance) principles presents a significant opportunity to reframe financial inclusion within a sustainability framework. Despite the vast body of research on microfinance and digital banking, traditional studies have largely focused on poverty alleviation, credit access, and their integration with ESG-driven frameworks, which remain unexplored. ESG reporting and communication may influence how people trust banks and microfinance institutions. This conceptual paper aims to investigate the impact of trust in ESG-oriented institutions on financial loyalty and the adoption of digital and microfinance tools. In finance, people are often hesitant to trust microfinance institutions or digital banking platforms due to risks and fraud. If institutions communicate their ESG practices fairly and transparently, it will act as a signal for them and will serve as a driver for both economic mobility and economic resilience. Economic mobility is the ability of a company to foster sustainable and social improvements, and economic resilience, on the other hand, refers to a company's or economy's ability to recover from crises like economic downturns and natural disasters while maintaining its core functions and sustainability growth. When ESG is embedded with microfinance and digital banking, Environmental dimensions enable green lending and climate-resilient practices, green loans, renewable energy microfinance, social dimensions advance equity, women empowerment, and rural access, and Governance dimensions strengthen transparency and trust, digital security. Together, these practices increase consumer confidence and promote loyalty within the financial ecosystem. This paper explores how microfinance and digital banking, when guided by ESG-linked practices, contribute to economic mobility and economic resilience.

Drawing on signaling theory, stakeholder theory, and institutional theory, this paper aims to conceptualize ESG practices as signals that reduce information asymmetry, which enhances consumer trust and mediates the relationship between financial inclusion and its outcomes of mobility and resilience. The conceptual framework aims to study financial inclusion via microfinance and digital banking as enabling mechanisms, ESG principles as a guiding framework, and economic mobility and resilience as outcomes. This paper expands on how ethical, transparent, and sustainability-oriented financial systems can induce societal and environmental impact.

The paper concludes by identifying paths for empirical verification through comparative analyses of non-ESG financial institutions and ESG-aligned institutions, offering valuable insights for scholars, policymakers, and practitioners aiming to design financial systems that not only enhance inclusion but also create resilience and a sustainable future.

Sources of Growth, Total Factor Productivity, and Transportation Expenditure in Nepal

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The developmental trajectory of any nation hinges on three fundamental pillars crucial for advancement: Infrastructure, Investment, and Inclusion. Infrastructure sets the foundation for progress, while investment acts as a crucial driver for sustainable development. Nevertheless, Nepal is facing declining investments from households, businesses, and the government, presenting hurdles to its developmental path. This study aims to dissect the sources of growth, focusing on Total Factor Productivity (TFP) and trends in transportation infrastructure expenditure, while also exploring the relationship between TFP and expenditure on transportation infrastructure.

GDP, RET, CET, Labour force, and Capital formation measured by the Ministry of Finance (MOF) and World Bank (WB) has been estimated for the period 1975 to 2021. The model includes three explanatory factors that influence Nepal's total factor productivity and is supported by several literature reviews.

Regression analyses explore the relationship between TFP, per capita real GDP and factors such as capital growth rates, introducing variables to account for structural changes in the economy. The findings underscore the significant impact of capital growth on GDP, with varying degrees of explanatory power observed across different time intervals and political eras.

Moreover, the study analyses the contributions of capital, labour, and total factor productivity (TFP) to GDP growth, highlighting shifts in their relative importance over time. While capital remains a dominant contributor throughout the study period, the influence of TFP exhibits nuanced trends, indicating potential limitations in governance and policy frameworks.

Overall, the research underscores the complex interplay between governmental systems, economic policies, and growth dynamics in Nepal, offering valuable insights for policymakers and researchers alike.

Exploring the Drivers of Livelihood Vulnerability among Tribal Households in Rural Jharkhand, India

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Understanding what makes rural households vulnerable is key to designing effective and inclusive development strategies, especially in regions where poverty and marginalisation persist despite rich natural resources. This study explores the socio-economic and infrastructural factors shaping livelihood vulnerability among tribal communities in Jharkhand, a state that exemplifies this paradox. Drawing on the sustainable livelihood framework, the research uses the livelihood vulnerability (LVI)

to assess the extent of vulnerability at the household level and applies a multiple linear regression model (MLRM) to identify its key determinants. The analysis is based on primary data collected from 400 households across four tribal dominated villages in the Khunti and Lohardaga districts. The findings paint a complex picture of vulnerability driven by interlinked demographic, economic, and infrastructural constraints. Households with a high dependency ratio, members suffering from chronic illness and those engaged in seasonal or distress driven migration face significantly higher level of vulnerability. Limited access to irrigation and sanitation facilities further weakens household resilience as does a continued reliance on borrowing and monocropping practices. On the hand, education particularly at the secondary and higher levels emerges as a strong protective factor. Similarly, participation in self-help group (SHGs) is associated with reduced vulnerability, suggesting the importance of social capital and institutional support. These results underscore the urgent need for development strategies that go beyond income generation to address the broader ecosystem in which rural livelihoods exist. Expanding access to quality education, health care and rural infrastructure while promoting climate-resilient agriculture and strengthening grassroots institutions like SHGs can play a vital role in reducing vulnerability. Moreover, policy efforts must aim to reduce the pressures that force households into migration and borrowing by improving livelihood opportunities locally. Strengthening the adaptive capacity of tribal households is not just essential for reducing day-to-day hardships, it is fundamental to building long term resilience and ensuring that the benefits of development reach even the most marginalized communities.

Beedi Rolling as a Livelihood Option: A Case study of Sambalpur District

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Livelihood is the mean by which an individual can sustain and secure basic needs like food, shelter and cloth. This comprises the capabilities, assets and activities. The livelihood assets include human capital, natural capital, social capital, physical capital and financial capital. Among these assets natural capital plays vital livelihood for people of rural area and indigenous community. The Non-Timber Forest Products (NTFP) are major source of livelihood asset. Tendu leaf is an important NTFP providing huge revenue to government and generating employment. This leaf is used in beedi rolling. Beedi rolling is a homebased work which is highly labour intensive and predominantly unorganized. It involves three major categories of workers forest based tribal workers who collect tendu leaves, tobacco growing farmers and beedi rollers most of them are women. These beedi roller women are refers to as beedi workers. According to the Ministry of Labour and Employment in Odisha there are 208212 registered beedi workers out of them 180000 are women. These female workers belong to rural and interior areas of Odisha. Sambalpur, Jharsuguda, Angul and Boudh are the districts where beedi rolling activity is pursued. Among these district Sambalpur is the district with highest number of beedi workers and the district has

three static-cum-mobile medical units. These medical units are specifically made for beedi workers. So, we collected data from three villages of Rengali Block of Sambalpur District. Using primary data collected by surveying 154 households with beedi workers we have examined their socio-economic status and why they choose to roll beedi instead of doing other work. We found that majority of the beedi workers belong to other backward classes from lower income household. They do this work because of flexible nature of the activity. They can earn money simultaneously doing household work. There is no need to go outside in search of job. But the disadvantage of this activity is even if workers are cutting the leaves and rolling beedi for hour they are getting lower wage. They are forced to do beedi rolling because the study area (the villages surveyed) is unirrigated and interior area. These characteristics of the area limit the opportunities for the beedi workers to be engaged in other activities.

The Cost of Underlabelling: Unlocking the Potential of Municipal Green bonds in India's Urban Finance Landscape

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Green bonds have become crucial instruments for financing environmentally sustainable infrastructure, particularly in urban settings where climate resilience is becoming more important. Though India has begun adopting green finance through sovereign and corporate issuances, the municipal green bond market remains significantly underdeveloped. This study investigates the phenomenon of “underlabelling” in India’s municipal bond sector, where bonds finance green-aligned projects but are not officially labelled as “green.” Using a spread-based estimation method applied to 18 municipal bond issuances between 2017 and 2024, the study estimates that approximately ₹67.5 crore in interest cost savings were missed due to the absence of green certification. The research identifies several barriers to green labelling: lack of a formal green taxonomy for municipal bonds, weak credit profiles of Urban Local Bodies (ULBs), high external verification costs, and low institutional awareness. Notably, while around 83% of the total bond amount in the sample was used for projects falling under SEBI’s green categories (e.g., water supply, sanitation), only a fraction of these bonds was officially green-labelled. This disconnects results in forfeited financial benefits such as the “greenium”—a lower yield associated with certified green bonds. By quantifying the economic cost of underlabelling and analysing institutional challenges, the study underscores the need for targeted policy interventions. These include developing a tailored green taxonomy for municipalities, capacity-building at the ULB level, creating cost-effective certification mechanisms, and fostering investor awareness. The findings emphasise that integrating green finance within India’s municipal debt architecture is not just a climate imperative

but a strategic financial opportunity. In conclusion, this research highlights the untapped potential of municipal green bonds in India and provides actionable insights to bridge the gap between green intent and formal recognition—thereby enabling cities to finance climate-smart infrastructure more effectively and affordably. As the national urbanisation agenda accelerates, integrating green finance into urban governance is essential for building climate-smart, financially autonomous cities.

Nature and Determinants of Livelihood Diversification: A Micro-Level Analysis from Kodarma District, Jharkhand

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This study aims to investigate the nature, extent, and determinants of livelihood diversification among various livelihood groups in Jharkhand. It utilises a range of analytical methods, such as the Simpson Index of Diversification, the Chi-square test, and the Censored Tobit Regression model. These tools helped in establishing a statistically significant difference in income levels between diversified and non-diversified households. It found that aside from agriculture, rural households are increasingly engaging in wage employment and self-employment. Several factors were identified as influencing the degree of livelihood diversification, including the average age of working household members, the land-to-man ratio, receipt of remittances, usage of farming implements, landholding size, and participation in cooperatives, self-help groups (SHGs), and village committees. Persistent use of low-productivity traditional farming methods has pushed households towards alternative income sources. Additionally, access to mass media and vocational training is found to play a crucial role in this process. However, the overall degree of diversification remains low, with a Simpson Index value of just 0.31, indicating limited engagement across multiple income streams. Based on these findings, the study puts forward several policy recommendations to promote non-farm livelihood diversification and improve rural income levels. It advocates for the development of small-scale manufacturing units to generate local employment and recommends targeted livelihood training to enhance youth employability. Strengthening inclusivity within local governance structures—especially for marginalised communities—is highlighted as essential. Addressing barriers to accessing credit and financial services is also deemed necessary to support entrepreneurial initiatives. Furthermore, the study underscores the crucial role of the state in enabling this transformation by investing in infrastructure such as roads, electricity, education, and communication systems. These structural improvements are crucial for creating an environment that fosters sustainable and inclusive livelihood diversification in rural Jharkhand.

Empowering Rural India through CSR: Analysing Impacts on Livelihoods, Entrepreneurship, and Financial Access

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Corporate Social Responsibility (CSR) in India, mandated under the Companies Act, 2013, is gradually shifting from a philanthropic act to a strategic development tool. In a country where rural communities still face structural issues such as poverty, unemployment, gender inequality, and limited access to finance, CSR efforts are increasingly used to fill these gaps. This paper will examine the role of CSR in improving rural livelihoods, with a special focus on entrepreneurship, financial inclusion, and community empowerment.

The study will aim to examine how CSR-led initiatives are affecting sustainable livelihood opportunities in rural India. The study will analyse how CSR initiatives by Indian corporations enhance rural economic independence and identify associated challenges and impacts. This paper will rely on secondary data from CSR portals, company sustainability and annual reports, NGO's reports, and existing literature. The paper will include diverse, well-documented case studies, which will be examined to understand how CSR has contributed to income generation, skill development, financial access, and local capacity building in rural settings.

The findings of this paper aim to demonstrate how CSR interventions can help rural communities shift from dependency to self-reliance, especially when designed with inclusive, participatory, and context-sensitive frameworks. It will also highlight how CSR efforts support national priorities such as Atmanirbhar Bharat, and the National Rural Livelihood Mission (NRLM), while addressing Sustainable Development Goals (SDGs) like poverty reduction, gender equality, decent work and development.

Through this analysis, the paper will contribute to the ongoing discussion on inclusive rural development and responsible corporate engagement. It will argue that CSR initiatives focusing on entrepreneurship, financial access, and community ownership can act as powerful drivers of lasting socio-economic transformation and societal development in rural India. By providing grounded insights and strategic reflections, this study will add to the broader conversation on CSR and rural development.

Importance of Rural Non-farm Employment in Sustainable and Inclusive Rural Livelihood

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Diversification in rural employment is key to achieving sustainable and inclusive development. Expanding rural non-farm employment (RNFE) allows the rural workforce to get involved outside the agriculture sector. It helps households to come out of multidimensional poverty. In this chapter, Unit-level data from the Employment and Unemployment Survey (EUS) and Periodic Labour Force Survey (PLFS) are used to understand structural characteristics and trends of RNFE across socio-economic groups. As far as methodology is concerned, we applied only simple percentage analysis. The key findings unveil that nearly half of the working population actively engages in rural non-farm employment (RNFE). The increasing number of young people participating in RNFE unequivocally shows progress in rural economic activity. Workers aged 30 to 45 are the most economically productive and mobile group. Furthermore, the growing presence of educated individuals in RNFE underscores its crucial role in the rural economy. Socially, many individuals from lower groups than ‘Others’ in RNFE demonstrate the inclusive nature of this sector. However, it is a big concern that real wages have declined across genders in 2023-24 compared to 2017-18, based on the 2016 base year as per RBI. Wage disparities between males and females are also evident. The need of the hour is stronger labour market interventions, including better enforcement of minimum wages, expansion of employment schemes like MGNREGA, and targeted efforts to formalize casual work, particularly in the non-farm sector.

A ML Framework for Precision Funding and ROI Maximisation in the Context of India’s Innovation Policy

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India’s jump in the Global Innovation Index (GII) has been pretty impressive—we went from 81st place in 2015 to 39th in 2024. That’s definitely a progress which is worth celebrating, but there’s a catch here. The main issue for further investigation is how we’re actually spending money on innovation? It could be a lot smarter. Right now, too many policies seem focused on just keeping our ranking up or making it look better on paper, instead of really improving how effective our

innovation funding actually is. So, this paper is targeting to figure out how India can start making better strategic decisions about innovation.

So, what's our big idea? We're putting forward a machine learning approach that pulls together three seriously useful tools. First, there's SHAP (Shapley Additive Explanations), which is helpful for really digging into why our models are telling us certain things about different policies. Then we've got Prophet (forecasting time series), which is helpful in predicting what might happen down the line. And to top it, we will be using NLP (Natural Language Processing) to sift through a ton of legal documents and data. When you bring all these pieces together, what you get is a powerful tool that lets policymakers try out all sorts of different scenarios and get a much clearer sense of the impact their decisions could have, even before they put them into action.

Our framework is built around four main parts. For starters, we want to pinpoint exactly which policy changes are going to make the biggest difference—not just the ones that sound good in a meeting. Next, we will look at how innovation rankings might shift depending on how we decide to allocate funding. Third, we're using NLP to check out how smoothly and efficiently our legal system handles cases related to innovation, because that really plays a huge role in the overall environment.

And finally, we're also working on putting together custom recommendations for different states, because let's be real, what's effective in one area might not quite hit the mark in another. On that note, we've been thinking: what if we smartly reallocate some of the R&D budget to really strengthen our institutional systems? Our assumption is that this could seriously boost innovation across the board. Further, if we can make legal processes smoother and more efficient, it just makes sense that we'd create a much more dynamic and thriving environment for innovation. At the end, this paper offers guidelines to the policymakers for a more intelligent, data-backed way to approach innovation.

Women Entrepreneurship and Well-Being: A Bibliometric Analysis

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Entrepreneurship can be considered as an important tool for the development of a country. It can be stated that entrepreneurship as a profession is treated as being dominated by males. Therefore, there have been various initiatives taken by the different countries to encourage the participation of women in the field of entrepreneurship. It can be stated that the concept of gender in entrepreneurship gradually evolved after the 1970's. In the recent times, there has been a rise in the women participation in entrepreneurial activities across the globe. The policies are also formulated in order to promote women entrepreneurs. Thus, it becomes important to study women entrepreneurs

in the recent times. This study seeks to examine the relationship between women entrepreneurship and well-being at a global level through a bibliometric approach. It will also take into consideration the various factors such as socio-cultural, education, government support and financial aspects to analyse the relationship between the various factors and how it helps in enhancing the well-being of the women entrepreneurs. It will also help us in getting a glimpse of the enhanced well-being by taking into consideration the work-life balance of women entrepreneurs and focus on recognition, financial inclusiveness they feel when engaged in entrepreneurial activities. Financial inclusivity helps in promoting women empowerment by helping them provide access to affordable and easy banking facilities. Several studies showcase that financial inclusion can help in improving the living standard and decision-making power of women entrepreneurs can thereby improve the well-being of women entrepreneurs. The focus is on the bridging the gap between women entrepreneurs and their well-being. It will also help to understand the major barriers in the work-life balance of women entrepreneurs. In addition, it throws light on how the financial inclusiveness can help in promoting economic empowerment of women and their well-being.

From Forests to Resilience: Assessing Livelihood and Climate Change Adaptation Pathways in Uttarakhand's Van Panchayats

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Community-based Forest management systems are increasingly recognized as critical pathways for advancing climate resilience while sustaining forest-dependent livelihoods. With global deforestation continuing at nearly 10 million hectares annually (FAO FRA 2020) and the AFOLU sector offering mitigation potential of $\sim 7.3 \text{ GtCO}_2\text{-eq yr}^{-1}$ between 2020-2050 (IPCC Sixth Assessment Report), the intersection of community forestry, livelihood diversification, and climate adaptation planning has become a priority research area.

India's forests, covering 21.76% of the country's geographical area, support 17% of the global population and 18% of the world's livestock (India State of Forest Report 2023). While participatory forest management has been institutionalized through various policies, systematic assessment of how climate-resilient livelihoods can be operationalized through community forestry remains limited—particularly in mountain regions facing high climate vulnerability and livelihood insecurity.

Uttarakhand provides an exceptional case study for evaluating community forestry under changing climatic conditions. The state's 11,217 Van Panchayats manage 4,526 km² of forestland (Panchayati Van Nirdeshika, 2023), sustaining 2.6 million villagers across diverse ecological zones (Uttarakhand Statistical Diary, 2021). Established in 1931, these institutions represent one of the world's oldest community forest management models, yet they face mounting climate risks as Himalayan warming outpaces global averages, directly threatening ecosystem services and rural livelihoods.

This study employs a two-dimensional analytical framework to examine the micro plans of Van Panchayat. The Livelihood Asset Building dimension draws on the Five Capitals framework (financial, social, physical, human, and natural capital) to assess how plans promote income diversification, strengthen social institutions, develop infrastructure, enhance skills, and conserve natural resources. The Climate Adaptive Capacity & Risk Reduction dimension, grounded in IPCC frameworks, evaluates climate risk awareness, adaptive capacity building, and climate-specific transformational strategies. This integrated approach enables a comprehensive assessment of whether community forestry can align livelihood development with climate resilience goals.

Through qualitative content analysis of micro plans across varied ecological and demographic contexts, this research reveals significant variations in livelihood strategies and natural resource utilization. Key findings highlight both underutilized opportunities for integrating adaptation with livelihood security and innovative practices that strengthen resilience through diversified livelihoods and ecosystem-based measures.

The study provides policy-relevant recommendations for strengthening Van Panchayats as platforms for climate-resilient livelihoods, with broader implications for community forestry across similar mountain ecosystems and forest-dependent communities globally.

Informed Choice under Risks: Prevention–Treatment Trade-off in Context of Cancer

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The rising burden of cancer presents significant challenges for public health systems worldwide, particularly in low- and middle-income countries like India. Current health policy frameworks in most countries focus predominantly on treatment, with minimal effort directed toward prevention strategies, despite the substantial economic burden. Prevention and treatment are complementary strategies for maintaining the productive health, yet households face critical trade-offs while allocating the limited resources between current consumption and preventive measures (which requires sustained additional expenditure) versus current consumption and treatment options (that preserve present consumption but address health only upon disease manifestation). However, this decision is shaped by behavioral and structural factors, including loss aversion, present-biased, discounting of future health, the latent nature of cancer, asymmetric information, and the high opportunity cost of preventive expenditure, particularly in low-income countries with limited insurance coverage that disproportionately subsidize treatment over prevention. The existing literature provides limited evidence on how individuals weigh mortality and morbidity risks when facing latent diseases under uncertainty. This paper addresses that gap by analyzing preferences for the case of gynecological cancer interventions. We analyze individual choices between preventive

and treatment interventions under uncertainty in cancer incidence. We develop a static health-utility model in which women decide between reducing the risk of gynecological cancer or mitigating its morbidity, and test the model using a contingent-valuation survey in West Bengal, India. Accounting for self-selection with endogenous switching regression, we find that three-quarters of respondents prioritize prevention over treatment. Preference for prevention rises with education, income, and perceived cancer risk, whereas lower-income women more often select treatment, reflecting greater tolerance for morbidity risk. Contingent-valuation estimates show that preventive interventions carry consistently higher economic value than treatment. Households choose prevention despite treatment subsidies, showing that aligning interventions with these preferences can raise healthcare efficiency.

The Care Economy's Hidden Workforce: Gender, Care Work and Socioeconomic Mobility of Domestic Workers in Delhi NCR

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Despite India's emergence as an economic powerhouse and the exponential growth of its urban service economy, women domestic workers remain trapped in a persistent paradox of economic invisibility and essential labour. This paper presents empirical evidence from a mixed-methods study of 270 domestic workers in Delhi-NCR to demonstrate how structural inequalities and gendered barriers create a self-reinforcing cycle of precarious employment and limited socioeconomic mobility.

Our findings reveal a complex interplay between unpaid care responsibilities and labour market participation. Over 50% of women domestic workers report that household duties directly constrain their paid work opportunities, contributing to their concentration in informal, part-time arrangements. The economic implications of this constraint are stark: over half of the workers earn between ₹5,000-10,000 monthly, with approximately quarter earnings below ₹5,000, indicating predominantly low-income levels. Work patterns show that about 60% of domestic workers are employed across multiple households (two to four), while roughly 30% work in single households, typically working an average of 40 hours weekly.

The research identifies three critical dimensions shaping women's labour market outcomes. First, spatiotemporal mobility constraints significantly impact workers' access to employment opportunities, with 60% reporting safety concerns during commutes. This is particularly acute during evening hours, when 45% of workers feel unsafe or very unsafe, effectively limiting their ability to accept work opportunities that require travel during these times. Second, economic barriers manifest through transport costs that consume disproportionate shares of earnings, with

some workers spending up to ₹3,000 monthly on commuting. Third, power asymmetries between home and work environments limit bargaining capacity, reflected in the fact that only 48% of workers report experiencing understanding from employers regarding their commute-related challenges.

Through an intersectional analytical framework, we demonstrate how gender, migration status, and socioeconomic position collectively determine women's ability to navigate public spaces and professional opportunities. The burden of care work further compounds these challenges, with 84% of workers engaged in childcare and 34% in elderly care, creating a «triple burden» of paid work, household responsibilities, and mobility constraints.

The study makes two significant contributions to feminist economics literature: first, it quantifies the multiple burdens faced by women domestic workers through robust empirical evidence, particularly highlighting how the intersection of educational disadvantage, care responsibilities, and mobility constraints creates compounding effects across workers' lives. Second, it documents the emerging role of collective organization in transforming individual constraints into collective advocacy, noting how workers navigate these challenges through informal networks and community support systems.

Based on our findings, we recommend three targeted interventions addressing the structural barriers: establishing community-led care service models which could provide subsidized childcare aligned with domestic workers' schedules; implementing evidence-based safety measures in transportation infrastructure, and developing comprehensive policy frameworks to ensure fair wages, social security coverage, and workplace protection measures. These recommendations respond directly to the spatiotemporal nature of constraints facing women domestic workers in Delhi-NCR.

Does Industrialization Promotes IP Protection? A Comparative Study of MSMEs of Andhra Pradesh, Bihar and Tamil Nadu

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This study investigates the complex relationship between Micro, Small, and Medium Enterprises (MSMEs) and the generation of Intellectual Property Rights (IPRs), with a particular emphasis on patents, trademarks, and industrial designs, geographical indications in three socioeconomically diverse Indian states: Andhra Pradesh, Bihar and Tamil Nadu. The study, which is based on the Intellectual Property framework, hypothesizes that the structure, strength, and industrial diversity of a state's MSME sector have a major impact on its ability to develop and market intellectual

property. The study aims to answer a basic question: how much do MSMEs in industrialized vs laggard states contribute to the formation of IP assets, and how does this affect long-term economic competitiveness?

Using a mixed-methods approach that draws from secondary datasets (from India's Intellectual Property Office, Ministry of MSME, and Udyam Registrations) and the analytical interpretation of policy documents, the research presents a comparative analysis of MSME density, investment behaviour, turnover range, and IP filing performance between the three states from 2018 to 2025. Informed by endogenous growth theory, Schumpeterian innovation economics, the study identifies Intellectual Property not merely as a legal asset but as a fundamental economic variable that embodies innovation, within the MSME ecosystem. Empirical findings reveal that Tamil Nadu's MSMEs are embedded within a mature industrial structure such as automotive, electronics, and textiles and benefit from institutional support systems including IP facilitation centres, incubators, and targeted policy interventions. Andhra Pradesh, while possessing emerging clusters in biotech, pharmaceuticals, and aquaculture, demonstrates moderate IP performance due to weaker linkage between its MSMEs and knowledge institutions. Bihar, in contrast, with a predominantly informal and micro enterprise base concentrated in traditional crafts and agro-processing, records negligible patent activity underscoring the limited integration of IP consciousness in its entrepreneurial landscape.

This variation is further explained by differences in IPR literacy, policy architecture, and the presence (or absence) of institutional intermediaries (such as patent desks, design facilitation cells, and university-industry knowledge hubs). It concludes that the confluence of proactive MSME development policies, innovation-friendly ecosystems, and robust IP facilitation infrastructure significantly enhances a state's ability to convert entrepreneurial activity into defensible IP assets.

The research situates IPRs within the broader dynamics of industrial growth, asserting that high IP regions enjoy superior returns to scale due to technological differentiation, innovation-led exports, and stronger firm survivability. Conversely, low-IP regions like Bihar risk stagnation in low-productivity equilibrium traps, perpetuating informality and low-value production.

Livelihood Concerns in India: Surveying Equity and Resilience Issues in Commercially Adaptive Agricultural Economies like Gujarat

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This paper follows the Conference Theme Prompt regarding “Social Dimensions of Livelihood Opportunities” and analyses the barriers and enablers for marginalized communities, neglected livelihood issues and regions in an otherwise Vibrant market Economy of India and particularly Gujarat.

This paper analyses the medium- and long-term possibilities for government institutional support in terms of complex problems like the interlinked Procurement and Distribution of

food in India. The paper recognises that the underlying issues related to malnutrition and climate resilience underpinning the commercial farmer as a producer and consumer require careful analysis.

The following sub themes are explored. 1. Sustainable Agriculture and Rural Livelihoods – Understanding how rural livelihoods issues in the broad umbrella of food policy can be handled in a comprehensive enabling manner. 2. Effectiveness of Welfare Schemes in Reducing Poverty – Evaluating government interventions in mitigating problems like Malnutrition and 3. Climate Change and Livelihood Resilience – Exploring adaptive strategies to enhance economic resilience amid environmental changes.

A Commercially Vigorous and well-networked state like Gujarat with high GDP, nevertheless faces major issues of equity. They require well planned institutional measures for long term resolution. Underpinning malnutrition are factors like Gender Gap, Tribal welfare and Climate change and these are explored empirically in the paper.

Contemporary welfare schemes are noted in the paper. However, the author recognises that recommended solutions for various problems such as food security, like food coupons will nevertheless continue to have limitations and will require well-structured action plans and scenario models for solution. Issues like Identification of beneficiaries impede Cash Transfers as they do Food Subsidy and hence solutions must take such problems as targeting of beneficiaries into account.

Careful analysis reveals that there are certain impediments to sustainable resolution of existing limitations. These have to first be recognised and it is the job of the academic to bring this to light. For example, the paper in table 1 notes that the Number of Aangan-Wadi Centres in particular Districts of Gujarat do not match/correlate with percentage of population under 5 that is underweight in particular districts.

Such limitations of the existing system are recognised and the statistical collation and analysis of facts and data in the paper from government bulletins are geared towards resolution of those problems.

Microfinance Led Livelihood Generation Action Plan Model: A Roadmap to Achieve the SDGs

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The Livelihood approaches learned from participatory assessments that vulnerability is a core dimension of poverty. Therefore, resilience to external shocks and vulnerabilities is the ultimate solution for eradicating poverty from the planet Earth. In India, as per the United Nations (UN), the incidence of poverty dropped from 55.1% in 2005-06 to 16.4 % in 2019-21. Despite this significant dip, India is still suffering from mass poverty. Woefully COVID-19 pandemic made the situation worse and pushed nearly 7 crore people into poverty out of which 5.6 crore people were from India.

In India, the Self-help Group-Bank Linkage Programme (SHG-BLP) is the largest microfinance program in the world. It was initiated by NABARD in 1992 to deliver affordable doorstep banking services as a part of the financial inclusion drive in India. Microfinance programs assist the poor not only by providing financial accessibility but also by generating livelihood assets such as human capital, financial capital, social capital, natural capital, and physical capital. Keeping this in view, this research paper contextualizes a theoretical interaction between microfinance and sustainable rural livelihood from an Indian perspective using a sustainable livelihood framework model and proposes coping and adapting strategies for SHG-BLP in the form of a “Microfinance Led Livelihood Generation Action Plan Model” to achieve specific outcomes in response to vulnerability context and Sustainable Development Goals (SDGs).

From HDI to Happiness: Measuring What Truly Matters

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A fully developed civilization can no longer be measured by only materialistic indexes; it must also mirror how well it adds to the human experience. Indicators, including Gross Domestic Product (GDP), the Human Development Index (HDI), and even more recent indicators, have been used for development, but none can account for the depth of humanity's different qualities of life dimensions. These indicators and proxies tend to prioritize certain economic and structural indicators while glossing over other significant subjective dimensions, such as happiness, social connectedness, and environmental sustainability. This paper makes the case for a more integrated development framework that translates humanity's subjective and objective determinants of well-being. Taken together and in conjunction with the literature, we derive our own indicator from established frameworks, i.e., Veenhoven's 'Happy Life Years' (HLY) and the broader structure of the HDI. We present the Subjective Well-Being Indicator (SWBI), a composite index of five fundamental characteristics: life expectancy, happiness, education, income, and environmental sustainability. While this paper is an effort to mirror these factors closer to some modern synopsis of diversity with a greater sense of development, we also hope it will emphasize experiences of life for people and communities. In summary, this research has analyzed the complex relationship between financial means and subjective well-being using empirical data based on the Easterlin Paradox and the hedonic treadmill hypothesis. Both these theoretical perspectives suggest that increased income does not translate into long-term happiness. The research also identifies the law of diminishing returns in income with respect to happiness, and the importance of non-material variables—such as increasingly poorer environmental quality, social capital, and mental well-being—in determining long-term well-being. Lastly, in accordance with the overall goals of

the United Nations Sustainable Development Agenda, the empirical research activity contained in this paper emphasizes the call to transform our development thinking. That is from economic and profit-making thinking of development to well-being. As such, we are presenting the Social Well-Being Index not only as a better measure tool but also as a conceptual tool that emphasizes the way we can rethink development by concentrating on what really matters to human lives and quality of life design, thus achieving balance, flourishing, and sustainability.

Emotional Hedging and Future Anchoring: Twin Pillars of Workplace Stability in an Era of Uncertainty

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“In a time of drastic change, it is the learners who inherit the future.”

— Eric Hoffer

The modern workplace is no stranger to change. Automation, economic shifts, and unpredictable global events have created a climate where job security is no longer guaranteed. For many, this uncertainty has become a constant source of anxiety, affecting not just productivity, but also emotional well-being and career decisions. Job insecurity can quietly erode confidence, fuel chronic stress, and discourage individuals from taking the very risks that could advance their careers. This paper introduces two fresh ways of looking at stability in an unstable world: the HEDGE Model and the ANCHOR Model.

The HEDGE Model (Hybrid Skills, Economic Streams, Dynamic Learning, Goal Flexibility, Emotional Regulation) captures the *external* dimensions of resilience. It treats skill diversification and income variety as a form of “emotional insurance,” much like financial hedging spreads risk. From a Delhi shopkeeper who drives an autorickshaw during slow retail seasons, to a marketing professional who learns coding to stay relevant in the AI era, HEDGE demonstrates how resource diversification enhances perceived control and reduces stress.

The ANCHOR Model (Aspirational Clarity, Narrative Identity, Core Values Alignment, Hope Orientation, Opportunity Mapping, Resilience Mindset) addresses the *internal* stability that anchors individuals through uncertainty. Drawing on psychological theories of “possible selves” and narrative identity, ANCHOR explains how a coherent sense of purpose, value alignment, and a hopeful vision of the future can prevent career drift and sustain motivation, even in turbulent times. A schoolteacher learning digital tools not only adapts to institutional change but reinforces a professional identity that transcends job titles.

Integrated, these models form the Dual-Shield Framework, where HEDGE’s external adaptability and ANCHOR’s internal stability create a “Resilience Zone.” This overlap enables individuals to respond to disruption with both practical flexibility and psychological grounding. The framework acknowledges that different socio-economic contexts may strengthen or weaken each shield — for example, younger workers may benefit more from dynamic learning

opportunities, while older professionals may draw greater strength from a deeply formed narrative identity. Moderators such as age, education, and industry, and mediators like social support and psychological capital, are identified for future empirical testing.

Implications extend beyond the individual. HR managers can design training that develops both skill breadth and identity clarity. Policymakers can blend lifelong learning credits with mentorship networks to foster resilience at a systemic level. The framework's novelty lies in merging two often-separate streams of coping research — external safeguards and internal resources — into a unified, testable model. The ideas presented here aim to guide the readers in fostering a workforce that can thrive, not just survive, amid change. By understanding and applying these concepts, workplaces can cultivate both security and boldness in career growth.

Energy Poverty and Public Health: A Dynamic Panel Study of 170 Countries

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This study assesses how energy poverty (proxied by electricity access) affects public health in 170 countries over 2005-2020. Using life expectancy and under-five mortality as outcomes, we employ dynamic panel techniques (system GMM) and Lewbel's heteroskedasticity-based IV to address endogeneity. Controls include urbanization, GDP per capita, immunization rates, fertility, and clean energy use. We find marked heterogeneity by development level. In middle-income countries, 1% higher electricity access raises life expectancy by around 0.20 years and reduces under-five mortality by 1.9% ($p < 0.01$). In contrast, low-income contexts see much smaller (often insignificant) gains unless health systems are strong, and high-income countries show a plateauing effect. Income (GDP) and immunization consistently improve health, while urbanization may reduce longevity in the poorest nations. These results imply a “ladder-within-a-ladder” pattern: electrification yields the greatest health returns once basic infrastructure exists. Policy relevance: Energy interventions must be stage-specific. Expanding reliable electricity supply, alongside immunization and healthcare improvements, can deliver large health dividends in developing regions. Simply adding kilowatt-hours is insufficient; integrated energy-health strategies are needed to break the cycle of energy poverty and poor health.

Characteristics of Households Undertaking Contract Farming in India

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In this paper, we find that the incidence of contract farming in India is very low. The phenomenon is mainly limited to the states of Punjab, Uttar Pradesh, Maharashtra, Karnataka, Himachal

Pradesh, Tamil Nadu, and West Bengal, and to commercial crops such as paddy, sugarcane, apple, cotton, tea, and potato. Farmers dwelling in *pucca* (well-structured) houses with higher monthly consumption expenditure are more likely to participate in contract farming. This is an indicator that households with relatively better living standards are more engaged in contract-based agricultural activities. The study further finds that households with smaller landholdings are inclined towards this practice. This points to the integration of small and marginal farmers, allowing contracting firms to consolidate the production process and procure the desired quantity of output.

Findings also suggest that contract producers receive significantly higher prices for their produce compared to farmers selling directly to local markets, APMC mandis, cooperatives, or government agencies. The states in which contract production is extensively practiced are identified, providing insights into regional variations in crop patterns and commercialization. Possession of a Soil Health Card is positively associated with participation, while holding an MGNREG Job Card is negatively associated, indicating the role of institutional access and labour dynamics in shaping participation decisions.

The analysis is based on a probit model using data from the NSS 77th round, which captures household-level information on farm characteristics, access to schemes, and market linkages. Despite its potential benefits, contract farming remains limited in India due to several structural and institutional challenges—such as small and fragmented landholdings, lack of legal enforceability of contracts, limited awareness among farmers, and high transaction costs for firms to coordinate with numerous smallholders. These barriers collectively reduce the scale and appeal of contract farming, particularly in the absence of strong policy support or robust farmer–firm trust mechanisms.

One or More? Fertility Choices and Gender Bias in Single-Child Families with Finalized Family Size

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Most studies on fertility cannot distinguish whether the current cohort of children is the couple's final desired size or not. The current study focuses on families who have revealed that they have achieved their desired final family size by choosing to opt for the irreversible contraceptive measure of sterilization. Using data from National Family Health Survey (NFHS) 2019-21, this paper investigates fertility preferences among sterilized women aged 15 to 49 who have at least one child. Using bivariate and multivariate analyses, the study examines key socio-economic characteristics that distinguish single-child families from those opting for multiple children. Differences among one-child families are explored by comparing those with a female child to those with a male child. By capturing these patterns, our study contributes to a deeper understanding of fertility stabilization in India and the socio-cultural dynamics behind the reproductive choices.

The key findings of the research are as follows: Among couples who opt for sterilization, an overwhelming 99% prefer female sterilization over vasectomy, reflecting long-standing societal norms that place the burden of contraception largely on women. Sterilization is found to be most popular among illiterate females from rural areas. Only 3.5% of women opted for sterilization after a single child compared to 46% after two children, highlighting its greater popularity after the second birth; however, the sex ratio of children ever born among single-child families is highly skewed against females, with only 465 girls per 1000 boys. Results from the logit model indicate that individuals living in urban areas have 20.21% lower odds of having more than one child compared to those in rural areas, while a rising wealth index is uniformly associated with fewer children—the richest having 46% lower odds of having more children compared to the poorest. Religion also plays a role: Muslims are significantly more likely to have a higher number of children compared to Hindus, while Sikhs and Christians show no notable difference. Caste differentials also emerge, with individuals from ST, OBC, and Others having lower odds of more children compared to SCs. Further, an increase in age at first birth—particularly beyond 25 years—is associated with reduced odds of having more children. Gender bias in fertility choices is evident as there is greater acceptance of single-child families when the child is male: 2.37% of mothers opted for sterilization after the birth of a male child compared to only 1.1% after a female child. While overall sterilization rates are higher among less educated women, those with higher education are more likely to opt for sterilization after having just one child, regardless of the child's sex; nevertheless, across all education levels, sterilization rates nearly double following the birth of a male child, underscoring enduring gender preferences in fertility decisions. Finally, the likelihood of a single female child is higher in families that are urban, highly educated, affluent, belong to the general category, and have a working mother.

Alluring Outreach to Affordable Medicines: Interrogating PMBJP in Uttar Pradesh and Informing Debates

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Pradhan Mantri Bhartiya Janaushadhi Pariyojana (PMBJP) is Government's Flagship program aimed at providing affordable, quality generic medicines to all citizens, particularly the poor and disadvantaged, through dedicated retail outlets—»Jan Aushadhi Kendras» (JAK)—at significantly reduced prices thus, creating wherewithal of improved livelihoods, reduced distress, and eased healthcare costs, lifting millions out of extreme poverty and vulnerability, creating opportunities for sustainable livelihoods. However, its effective and stout efficiency varies across regions due to issues like poor targeting, leakages, and inadequate implementation. To make these —»Jan Aushadhi Kendras» truly transformative, sharper delivery, stronger accountability, and better alignment with

its laid objectives is vital. Welfare must not just alleviate poverty but enable sustained self-reliance and dignity.

It is in this context; this paper brings out evidences on the working of PMBJP from the perspective of end users thus examining the current status, operational efficiency, and constraints faced by PMBJKs in Uttar Pradesh, the state with the highest number of functional Kendras. It draws substantially from recent research (2024, of GIDS) in which our primary survey collated information and opinions from different stakeholders who were receiving/ received benefits under Pradhan Mantri Bhartiya Janaushadhi Pariyojana (PMBJP). It also examines the relevance of PMBJKs in terms of equity, efficiency, affordability and sustainability and evaluated its progress to make it better & attain its objectives in the State of Uttar Pradesh. The analysis also supports the researchers working in the field of health policy and practices in quest of aspirational goal that has galvanised efforts both at the government and the economic level by understanding beneficiaries' satisfaction and the challenges they confront. The paper using a combination of secondary data and primary field survey across 75 districts, reveals significant regional disparities in the distribution of PMBJKs. and reveals that the scheme nudged patients towards Jan Aushadhi Kendras under the garb of generic and affordable medicines only to be saved from out-of-pocket expenditures. The western region accounts for over 43% of Kendras, while Bundelkhand has only 3.3%, indicating stark geographic inequity. Ownership is predominantly individual, with over 94% of Kendras self-operated by pharmacists, often motivated by professional education and government incentives.

While infrastructure standards are generally met—with 85% of shops exceeding 120 sq. ft.—most operate from rented premises. Services such as home delivery remain limited (only 7.8%), and medicine availability for chronic diseases is insufficient despite high demand. Customer footfall is robust, with over one-third of Kendras serving more than 100 customers daily. However, profit margins remain modest (10–20%), and financial sustainability is a concern, particularly in less urbanized regions. The findings suggest that while PMBJKs have made commendable strides in improving medicine affordability and entrepreneurial engagement, their reach, efficiency, and viability vary widely across districts. Targeted interventions are needed to bridge regional gaps, enhance medicine availability, and support long-term sustainability of the scheme in underserved areas.

Exploring the Nexus of Women's Agricultural Labor, Time Use, and Nutritional Outcomes in Rural India: A Systematic Review

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While agriculture is recognised as vital for improving nutrition, the evidence linking women's participation to sustained nutritional gains remains inconclusive. This review synthesizes

studies published between 2000 and 2024 to reflect current agricultural practices and nutritional challenges. We examine how agricultural practices and time use affect nutritional outcomes among rural women through pathways such as income generation, food preparation, and intra-household labour allocation. A structured methodology with clear inclusion and exclusion criteria was used to assess gender-sensitive and nutrition-sensitive interventions. Using narrative synthesis, the review categorizes findings around key themes and contextual factors, including socio-economic status, seasonality, and labour intensity. The results show that while increased involvement in agriculture can boost household dietary diversity and income, it also raises time burdens that affect food preparation, childcare, and self-care. Positive outcomes occur when interventions enhance women's decision-making power, income access, and use of time-saving technologies, whereas negative outcomes emerge when excessive workloads compromise energy balance and limit rest. A conceptual framework is presented to map the dual pathways linking agriculture, time use, and nutrition, capturing the roles of labour distribution, social norms, and resource access. The framework underscores the need to integrate gender equity, time efficiency, and nutritional objectives into agricultural policies. In conclusion, agricultural interventions have potential for nutritional improvement if they are carefully designed to avoid unintended negative impacts on women.

Financial Inclusion and its Recent Trends in India (2003–2019)

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The study utilizes data from the All-India Debt and Investment Survey (AIDIS) to analyse trends and determinants of financial inclusion. It highlights significant initiatives like the Pradhan Mantri Jan Dhan Yojana (PMJDY) launched in 2014, which led to the mass opening of bank accounts across the country. The paper reveals that financial inclusion has received increased attention from policymakers and academics in recent years, although India's efforts date back to the 1960s.

The study finds that financial inclusion has improved significantly over the years, with the proportion of households with bank accounts increasing from 35.4% in 2003 to 93.1% in 2019. Similarly, the percentage of households that have saved rose from 24.9% to 92.4%. However, the paper also highlights the need for more comprehensive policies to promote financial inclusion, especially among commonly excluded groups such as females, backward communities, rural populations, and the poor.

Overall, the paper underscores the importance of financial inclusion for economic development and calls for continued efforts to bridge the gaps and ensure that everyone has access to financial services.

A Study on Relationship between Job Security, Workplace Stress and Mental Well-being Among Female Informal Workers in India

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This study investigates the interrelationships among job security, workplace stress, and mental well-being in the context of female informal workers in India, a group that comprises the majority of India's working women. Using a sample of 100 participants engaged in domestic work, vending, tailoring, and other unregulated jobs in Delhi-NCR, the study applied standardised psychometric scales to assess perceived job security, stress levels, and mental well-being. Results showed that higher job security was significantly associated with better mental well-being and lower workplace stress, while increased workplace stress was linked to lower mental well-being. These findings confirm the psychological vulnerability of informal women workers and emphasise the need for structural and policy-level support.

The study situates these findings within the broader socio-economic context of India, where informal employment lacks legal protections, social security, and fair wages—especially for women. Chronic job instability, financial uncertainty, and gendered workplace stressors compound emotional strain, leading to poor mental health outcomes. The paper advocates for gender-sensitive labor reforms, access to mental health care, and community-level interventions to enhance the quality of life and emotional resilience of female informal workers. These results serve as a call to action for policymakers, NGOs, and mental health professionals working to improve conditions in India's informal labour landscape.

Impact of Self-Help Groups in Fostering Women Entrepreneurship and Sustainable Livelihood

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Several studies indicate that Self-Help Groups in the form of credit or micro credit schemes and savings have successfully changed the lives of poor women by making way for a more enhanced income and increased self-esteem. This study aims to investigate the impact of Self-Help Groups on the entrepreneurship and livelihood of women. The gaps noted in the review were of methodological approach and insufficient attention given to the entrepreneurial traits

of women. Hence there is a need for a more nuanced study that focuses upon the new model of SHGs in sustainable business practices. Employing a mixed method approach this study will gather the primary sources of data from insights of case study; the secondary data will be from key government sources like Reserve Bank of India, NITI Aayog, National Rural Livelihood Mission and NABARD. Statistical tools like regression analysis will be used to explore the determinants of financial independence and how it effects the entrepreneurial behaviour of women. The study will critically analyze how women SHGs have led to economic resilience and a more stable economy. It will also evaluate the critical challenges faced by women. This paper will explore the socio-economic dimension of SHG participation on their livelihood. The paper will also explore the usage of different strategies to advance entrepreneurship of rural areas and eliminate poverty. The study highlighted SHGs as effective platforms for fostering sustainable and equitable empowerment, capable of bridging socio economic disparities among women and enhancing their capacity building. The study will be relevant to foster the sociological and economic literature, entrepreneurial behavior, promote financial inclusion and contribute in sustainable economic growth through entrepreneurial activities. The study will also be significant because it also aims at achieving the Sustainable Development Goals (SDG) SDG 1 no poverty and SDG 5 gender equality.

Evolution and Transformation of Corporate Social Responsibility: From Margin to Locus

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There is a long and varied history associated with the evolution of the concept of Corporate Social Responsibility (CSR). However, a historical review is missing in the academic literature that portrays the evolution of the academic understanding of the concept alongside with the public and international events that influenced the social expectations with regards to corporate behaviour. This paper aims to provide a distinctive historical perspective on the evolution of CSR as a conceptual paradigm by reviewing the most relevant factors that have shaped its understanding and definition, such as academic contributions, international policies and significant social and political events.

The method used is a comprehensive literature review that explores the most relevant academic contributions and public events that have influenced the evolutionary process of CSR and how they have done so. The findings show that the understanding of corporate responsibility has evolved from being limited to the generation of profit to include a broader set of responsibilities to the latest belief that the main responsibility of companies should be the generation of shared value. The findings also indicate that as social expectations of corporate behaviour changed, so did the concept of Corporate Social Responsibility. The findings suggest that CSR continues to be relevant within the academic literature and can be expected to remain part of the business

vocabulary at least in the short term and as a result, the authors present a plausible future for CSR that takes into consideration its historical evolution.

The future of CSR must also consider the latest advancements in technology and their significance within new business models and strategies. The integration and adaptation to new digital processes and tools, along with the incorporation of Artificial Intelligence into the business landscape, present significant challenges not just for the CSR discussion, but for companies as a whole.

Equity in Health Care Utilization and Public Spending in Bihar: A Benefit Incidence Analysis

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Despite India's universal health care system, public health spending in India is alarmingly low i.e., only 1.5% of its GDP, equivalent to 1.58 trillion Indian rupees (World Bank, 2022). This underfunding exacerbates issues like poor service quality, limited access to essential healthcare, and inequities in urban and rural healthcare access.

Bihar faces persistent challenges in healthcare delivery. The state struggles with low-quality public healthcare facilities, stark urban-rural disparities in service accessibility, inadequate infrastructure, and poor resource management. Consequently, private healthcare, predominantly profit-driven, has become the mainstay for many, particularly the economically privileged. However, this reliance on private healthcare leads to enormous out-of-pocket (OOP) expenses, leaving vulnerable populations impoverished and unable to access essential care. The unequal distribution of public health resources and services in Bihar has disproportionately affected the most marginalized and disadvantaged groups. Many studies have documented that public spending on healthcare has not reached the most impoverished households, further exacerbating inequality (Ranjan et al., 2020; Bhattacharya et al., 2021). Therefore, addressing inequities in healthcare utilization and expenditure is essential to ensure equitable and effective service delivery across Bihar.

This study applies Benefit Incidence Analysis (BIA) as a method to measure disparities in healthcare utilization and spending across different socio-economic groups. BIA is a proven technique to evaluate how public spending translates into health benefits across income groups, which can highlight inequities in health systems and inform better policy interventions (O'Donnell et al., 2008).

The objectives of this study are to evaluate equity in health care utilization and expenditure across different socioeconomic groups in Bihar using Benefit Incidence Analysis (BIA). The study seeks to address disparities in access to public health care services and the distribution of government spending across various economic classes.

This study uses data from the 75th round of the National Sample Survey (NSS) conducted by the National Statistical Office (NSO) between July and December 2017. The theme of this survey was “*Health, Morbidity, and Conditions of Ailing Persons*,” which provides detailed information on morbidity patterns, health care utilization, and associated expenditures across India.

The study’s findings demonstrate significant inequalities in health care utilization and the distribution of public health expenditure in Bihar. Urban areas show a strong pro-rich bias, with wealthier groups utilizing more public health resources. Conversely, rural areas show slightly more equitable access, though the poorest still face challenges accessing both inpatient and outpatient care. These findings emphasize the need for targeted health policy reforms that ensure equitable distribution of resources, particularly for the poor and rural populations. Equitable health care access requires focusing on strengthening public health infrastructure, improving service availability, and creating financial support mechanisms for disadvantaged groups. Addressing these disparities is critical to achieving universal health coverage and improving overall health equity.

Cooperative Ideals, Precarious Realities: Mechanisation, Gendered Informality, and Livelihoods Insecurity in Kerala’s Coir Sector

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The coir industry has long been a cornerstone of Kerala’s traditional economy, supporting the livelihoods of thousands. However, the industry has faced challenges, especially from neighbouring states that have adopted mechanisation to stay competitive. As a result of this growing pressure, Kerala’s coir sector, despite initial resistance, began adopting mechanised processes to sustain its position. In Kerala, the coir industry operates through both cooperative and private modes of production, each with varied outcomes for workers. In the corporative mode, workers are part of the societies where they work together and share the benefits, often with the help of the government. While cooperatives are often seen as inclusive and welfare-driven, evidence from the spinning node presents a more complex picture. Based on a survey of 158 women workers across ten spinning cooperative societies in Kerala, this paper examines the effects of mechanisation on income stability, labour conditions, and gender equity. Unlike many existing studies that focus narrowly on traditional centres like Alappuzha, this study covers all project offices across multiple districts, offering a more comprehensive and grounded picture of the coir sector throughout Kerala. The objective is to assess whether the cooperative model still protects and empowers women in

this sector, or whether it is being undermined by structural constraints and emerging vulnerabilities in the context of mechanisation. The study finds that while mechanisation marks a technological shift, it has not led to income security, better work conditions, or more equitable gender impacts, with women remaining marginalised. Instead, it has reinforced existing vulnerabilities, particularly for women by introducing rigid work regimes, exacerbating wage delays, and ignoring the socio-institutional reforms necessary to support a sustainable workforce. The cooperative model, once seen as a shield for marginalised women workers, currently offers limited protection in the face of uneven modernisation. Without targeted institutional reforms and gender-responsive policies, mechanisation alone risks deepening precarity rather than revitalising the coir sector.

Women in the Shadows: Nature, Characteristics, and Growth of Informal Employment in Uttarakhand

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Informal employment dominates India's labour market, with women disproportionately engaged in insecure and low-paid work. In Uttarakhand, a state with uneven industrial growth and reliance on agriculture and services, women's employment remains largely informal despite economic change. This paper explores the nature, characteristics, and growth of women's informal employment in the state using secondary data from sources such as the PLFS, NSS, and TUS. Findings show that women's work participation rates are lower than men's, yet most employed women are in informal jobs. Consistent with national patterns where over 90 percent of women lack formal contracts or social security, women in Uttarakhand are concentrated in agriculture, construction, domestic services, and small-scale self-employment. In hill districts, seasonal and home-based work is prominent, influenced by both geography and traditional care responsibilities. Significant differences emerge across rural–urban and hill–plain contexts, caste, education, and marital status. Rural women, particularly from Scheduled Castes and Tribes, are overrepresented in casual wage and unpaid family labour. In urban centres like Dehradun and Haridwar, women often work in vending, small services, and home-based manufacturing, with migration playing a role. Although education helps some women move out of agriculture, access to formal sector jobs remains limited due to persistent gender barriers. The study underscores the need for policy interventions to extend social protection, improve childcare and skill development, and strengthen rural infrastructure. Addressing structural and gendered barriers is vital to improving women's economic security and enabling inclusive development in Uttarakhand.

Skill Training Landscape in Uttarakhand: An Assessment of Achievements, Challenges & Opportunities

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For improving employability, addressing youth unemployment, and bridging the gap between academia and industry. Effective skill training is fundamental for creating sustainable livelihoods. It empowers individuals with better job opportunities and stable incomes, thus enhancing well-being, reducing distress migration, and instilling confidence. This paper examines the current skill ecosystem, its challenges, and its opportunities, with a specific focus on the state of Uttarakhand. Recognising the importance of a skilled workforce, the Government of India has launched several initiatives, most notably the Skill India Mission and the Pradhan Mantri Kaushal Vikas Yojana (PMKVY). These programs aim to standardise training and improve industry linkages. Despite these efforts, the national skilling scenario faces significant hurdles. Data from the PLFS Annual Report (2023-24) reveals a stark reality: while 34.7% of Indians have some form of vocational training, only 4.1% have received formal training. The vast majority depend on informal methods like self-learning, on-the-job training, or rely on knowledge passed down through their family. This highlights a massive gap in quality, accessibility, and the relevance of training to market needs, ultimately hindering the mission impact. Uttarakhand presents a unique case study due to its distinct socio-economic and geographical profile. The state contends with challenges such as high youth outmigration, a limited industrial base, and stark disparities between its hill and plain districts in various development indicators. While the state boasts a strong literacy rate of 83.8%, this has not been fully translated into formal skill acquisition or employment.

This paper analyses Uttarakhand skill development landscape by examining governmental spending, enrolment trends, and stakeholder participation, utilising secondary data from government sources (MSDE, NSDC, UKSDM, and budget papers). On supply side, the study finds an expansion of training centres under schemes like PMKVY, yet enrolment and outcomes remain highly uneven. Feedback from training providers reveals several hurdles, including high trainee dropout rates and low attendance. They also point to practical problems, like an online attendance system that is difficult to use and ongoing struggles to maintain their training facilities. These interviews also uncovered a deeper issue. There is a clear gap between what is being taught and what industry actually need. While most training focuses on basic, entry-level skills, employers are increasingly looking for workers with more advanced, specialized competencies. Hill regions suffer from limited access to quality training infrastructure and weaker industry connections compared to the plains. This reinforces regional inequality and contributes to the state's specific employment challenges.

The study offers evidence-based recommendations for strengthening the effectiveness, inclusiveness, and sustainability of skill training initiatives, with broader implications for employment generation, equitable economic growth, and the realization of demographic dividends.

Social and Financial Inclusion of Different Income Groups: Panel Data Analysis

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This study examines the interdependent relationship between social inclusion and financial inclusion across 123 countries spanning different income levels from 2005 to 2023, with a focus on identifying their mutual influence and underlying structural determinants. Using a robust empirical framework, the paper constructs composite indices for Social Inclusion (SII) and Financial Inclusion (FII) through two-stage Principal Component Analysis (PCA), integrating multiple indicators such as education, health, access to utilities, gender equity, institutional quality, and financial access metrics. A simultaneous equation model is employed to capture the bidirectional causality between SII and FII, estimated using Three-Stage Least Squares (3SLS) to account for endogeneity between the variables and to produce consistent parameter estimates.

The empirical results reveal a statistically significant two-way relationship between financial and social inclusion across all income groups. Specifically, financial inclusion positively contributes to social development by enhancing access to economic resources, basic services, and reducing exclusion, while socially inclusive environments—characterized by gender development, education, and political participation—stimulate higher financial engagement. The strength of this relationship varies by income level: middle-income countries display the strongest mutual reinforcement, while in low-income countries, even small improvements in financial access can lead to substantial gains in social inclusion. Key structural variables such as the Gender Development Index (GDI), Share of Women in Parliament (SoW), and Voice and Accountability Index (VAI) are found to significantly enhance SII, while economic freedom and institutional quality are critical for improving FII. The percentage of refugees (REF) has a negative impact on social inclusion, reflecting the socio-economic vulnerability of displaced populations.

Additionally, Canonical Correlation Analysis (CCA) validates the strong statistical interdependence between the sub-components of both indices, particularly in low-income countries where financial tools have the greatest social leverage. The findings emphasize that inclusive development is best achieved through integrated strategies that advance both social and financial inclusion simultaneously. This study offers empirical support for aligning financial sector development with human capability expansion, governance reforms, and gender empowerment to achieve the Sustainable Development Goals (SDGs), especially in resource-constrained settings. It concludes that social and financial policies should not be treated in isolation but designed as mutually reinforcing instruments to foster equitable and sustainable development.

Small Business, Big Impact: Microfinance, Entrepreneurship, and Economic Growth Worldwide

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The purpose of this research is to analyse the relationship between microfinance and entrepreneurship development, with a specific focus on the moderating role of the small businesses. The study also assesses the broader economic implications of small businesses worldwide. Economic stability is a desirable state for development, often fostered by central bank policies. Achieving economic stability ideally requires a progressive employment rate in the nation. However, given the limitations of government and private sectors in providing full employment, self-employment emerges as a vital solution. Small businesses play a dynamic role in the economy by generating employment opportunities, increasing income, and stimulating consumption and investment, in turn boosts production, GDP, and national income. They contribute to poverty reduction, crime mitigation, and improved standard of living, ultimately enhancing the overall happiness index. Their flexibility, mobility, adaptability, and convenience enable them to thrive in diverse settings. With relatively lower risk factors, they are well-suited to serve rural and semi-urban populations, fostering inclusive economic growth and development. Rural population, low-income households and small business famished for financial support in India. The underprivileged population are considered as a high risk and high costs clients because of small transactions and reachability issues. Microfinance, is a financial provision that offers small size loans and other financial services to poor and low-income population. It contributes to poverty and unemployment eradication, women empowerment and improving the living standards. In India, Micro, Small, and Medium Enterprises (MSMEs) donate meaningfully to economic growth. But access to finance are always remains a grave task. Microfinance, empowers small businesses and entrepreneurs by providing financial support, without rigorous collateral. Microfinance institutions (MFIs) have played significant character in promoting financial inclusion in India, by the support of government. Small businesses are a driving force behind the US economy, serving as significant job creators and innovators. They pioneer new markets, driving expansion and growth. Notably, SMEs account for over 98% of all businesses, employ around 70% of the workforce, and contribute approximately one-third of Australia's GDP, highlighting their vivacious role in the country's economy. In Japan, SMEs are a chief basis of employment, creating around 70% of the total employment. 2020 data states that SMEs accounted for 680.1 trillion Japanese yen in sales. It is 47.3% of total sales generated by all companies. In China, SMEs plays a vital role in the country's economy. It contributes around 60% of the GDP and offer employment to around 80% of all jobs. This significantly contributes to social stability by generating employment. The study highlights the significance of microfinance in promoting financial inclusion, particularly in countries like India, where MSMEs contribute substantially to economic growth. Global examples from the US, Australia, Japan, and China demonstrate the crucial role of small businesses in driving economic expansion, job creation, and innovation.

Uneven Emergence of New Livelihood Opportunity through Seasonal Migration– Role of Gender and Social Structure

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Livelihood opportunities are neither naturally occurring nor neutrally distributed; rather, they are deeply shaped by historically embedded systems of power and difference, including gender, caste, class, ethnicity, and geography. These very dimensions are now, under shifting political economies, also shaping new livelihood opportunities such as seasonal migration and gig economy work - though in markedly uneven ways. In contrast to being a purely economic strategy or individual preference, this study conceptualises seasonal migration as one profoundly conditioned by intersecting social structures. Thus, the study examined how seasonal migration is started, sustained and continues to evolve due to the social dynamics taking seasonal migration from Odisha. Drawing on qualitative fieldwork across eight villages and data from 260 migrant households, this study examines how caste, class, gender, and institutional norms shape the initiation, persistence, and evolution of migration as a livelihood strategy. Findings show that seasonal migration in the study area has evolved not merely as an economic response to scarcity, but as a survival strategy deeply shaped by historically embedded systems of caste, class, and gender inequality. The analysis shows that livelihoods are shaped not by market forces alone, but by social norms. Economic factors such as asset ownership and employment opportunities have a social dimension. Gender further compounds inequality: female migration primarily occurs through male-led or family-based units. This reveals that the landscape of livelihood is not an open field of choice but a terrain historically carved by dispossession, stigma, and unequal power.

The Gig Economy in India: A Double-Edged Sword

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The expansion of digital platforms and on- demand service delivery transformed the structure of labor markets and the growth of India's gig economy. The gig economy has created new opportunities, especially for youth and urban workers, but managing the new opportunities created by the gig economy comes with its own complexities. Therefore, the gig economy narrative can be viewed as having two sides; the side that promises flexibility and inclusivity and the other side that is characterized by precarity, informality, and a lack of institutional protection. This paper critically analyses the socio-economic and institutional implications of gig working in India, based

on original secondary literature, policy documents, and global regulatory frameworks to engage with this topic. The study analyses key structural features of the platform economy, including algorithmic management, non-standard employment relations, and the absence of social security entitlements. Special emphasis is placed on the gendered nature of participation in gig work, highlighting disparities in access, earnings, and digital capabilities. The paper further evaluates contemporary policy interventions—such as the Code on Social Security (2020), the e-SHRAM portal for informal workers, and Rajasthan’s Platform-Based Gig Workers Act (2023)—to assess their adequacy in addressing the vulnerabilities experienced by gig workers.

Findings reveal persistent gaps in the coverage, enforceability, and implementation of protective measures, compounded by the lack of worker recognition and regulatory clarity. In response, the paper proposes a structured, rights-based approach to governing gig work in India. Key policy recommendations include the establishment of a universal Gig Worker Identification system, statutory provisions for enforceable social security contributions by platforms, algorithmic transparency standards, and the promotion of gender-sensitive and skill-development initiatives. The paper argues that for the gig economy to develop sustainably, it has to move from fractured welfare systems to integrated, rights-based governance. It proposes a set of policies including a universal Gig Worker Identification scheme, enforceable and portable contributions to social security, algorithmic transparency requirements, and gender-responsive institutional protections. The interventions are necessary to reconcile platform flexibility with worker security, and shift India’s gig economy to a more equitable and inclusive version of digital work. The paper furthers the academic and policy conversations regarding regulating non-standard forms of work in the digital economy and relates to economic restructuring.

Sectoral and Regional Allocation of CSR Funds in Uttar Pradesh: An Analytical Study of Aspirational Districts

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This study examines the role of Corporate Social Responsibility (CSR) as a supplementary mechanism to government welfare schemes in addressing poverty, livelihood, and well-being in the aspirational districts of Uttar Pradesh. While welfare interventions under the Aspirational Districts Programme target sectors such as health, education, rural development, and financial inclusion, CSR spending has increasingly been channeled into similar domains. Using secondary data from the Ministry of Corporate Affairs (2014–15 to 2022–23), the paper analyzes the sectoral and regional allocation of CSR funds in Uttar Pradesh with a focus on aspirational districts. Findings reveal that although CSR expenditure has grown significantly, disparities persist, with non-aspirational districts capturing the majority share of investments. Within aspirational districts, most CSR resources are concentrated in education, health, and rural development—areas that

overlap with welfare schemes but remain underfunded relative to developmental needs. The study highlights the potential of CSR to complement government welfare programmes by bridging resource gaps, fostering inclusive growth, and advancing Sustainable Development Goals (SDGs). However, the uneven distribution of CSR investments calls for stronger policy coordination and convergence between corporate initiatives and welfare interventions to maximize poverty reduction and livelihood improvement.

Information and Communication Technology Adoption: A Catalyst for MSME Credit Access and Performance Enhancement in Delhi-NCR

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This paper empirically examines the role of Information and Communication Technology (ICT) adoption in enhancing formal credit access for Micro, Small, and Medium Enterprises (MSMEs) in the Delhi-National Capital Region (NCR), which face documented cash constraints as identified in previous studies. Using Structural Equation Modelling (SEM) on primary survey data collected from 242 MSMEs in the Delhi-NCR region during 2024, the research investigates technology's role as a credit bridge and its impact on business outcomes. The study reveals that performance expectancy serves as the most significant driver of digital tools adoption among MSMEs. Enterprises that adopted digital tools experienced significantly improved access to formal credit, attributed to enhanced transparency in financial records and comprehensive digital transaction trails. This increased credit accessibility subsequently led to improvements in operational efficiency, cost management, and business expansion capabilities. The research demonstrates the positive impact of ICT adoption in overcoming traditional credit constraints faced by MSMEs. The findings underscore the critical need for targeted policy interventions that strengthen digital infrastructure, promote ICT skill development, and encourage financial institutions to leverage digital records for credit evaluation processes. These measures can enhance MSMEs' access to formal credit, thereby promoting sustainable growth and advancing financial inclusivity within the MSME sector.

Impact of Cultural Practices on Women Empowerment: Navigating the Intersection of Marriage and Career among Muslim Women in Uttar Pradesh

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The aim of this study is to determine whether cultural practices, with special reference to marriage, and the level of education among Muslim women are correlated. The idea is to find out how the pressure of marriage at the time of career building is affecting the decisions taken by the Muslim women. Islam, being second largest practiced religion in India, has the lowest female literacy (PLFS 2022-23 Annual Report). When compared to all other religions, female Muslim community has the lowest labour force participation rate (PLFS 2022-23). Two supporting factors of gender equality and women empowerment (5th sustainable development goal) are education and employment. In this study, the mixed methodology has been used which includes both primary and secondary data collection process. The study's second major goal is to ascertain who makes decisions in a Muslim woman's day-to-day existence. Choosing to pursue education or not, framing the career path, deciding when to get married, and many more. Most of these decisions are taken between the age group of 15 to 45 years. Therefore, the data is collected from the age group of 15 to 45 years OF Muslim women. To obtain firsthand information from the respondents, personal interviews and focused group discussions were conducted. During these interviews, several crucial cases emerged, highlighting the ground realities and status of women in terms of education, career, and decision-making power within the household and in their personal lives. This paper also aims to explore the role of cultural beliefs and practices that affect the growth and development of Muslim women in society. Most importantly, the paper seeks to understand the possible solutions to these barriers, particularly focusing on the overlapping phase of marriage and career. It examines women's perspectives on getting married during their career-building years whether it is their personal choice or if they are being compelled to do that.

Urban Planning and Informal Waste Work: A Study of Waste Pickers in Four Settlements of Delhi

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This paper examines the intersections of urban planning, informal labour, and waste infrastructure in Delhi through the lens of waste pickers' everyday experiences. Drawing on field research conducted in four informal settlements like Bhalaswa landfill, Rangpuri Pahari, Seemapuri, and Shahbad Dairy, as well as long-term engagement through the Main Bhi Dilli campaign (a people-

led campaign for inclusive and sustainable Delhi Master plan 2041), the paper explores how Master plan processes and infrastructure transformations shape the spatial and livelihood conditions of waste pickers, particularly women. Waste pickers play a critical role in Delhi's recycling economy, yet continue to remain excluded from the city's vision of infrastructure and development.

Through ethnographic fieldwork, participatory planning engagements, and policy analysis, the paper reveals how the closure or transformation of decentralised waste infrastructure such as dhalaos, once central to the functioning of informal waste economies, has displaced waste pickers from accessible workspaces. In neighbourhoods like Bhalaswa and Shahbad Dairy, homes have become makeshift sorting units, intensifying risks related to health, fire hazards, overcrowding, and eviction. In Rangpuri Pahari and Seemapuri, workers report being denied access to waste streams or facing increased policing and social stigma, even as formal Material Recovery Facilities (MRFs) and waste-to-energy plants replace traditional modes of segregation. The findings highlight the spatial and gendered dimensions of exclusion, where women waste pickers bear the compounded burden of unpaid domestic labour and precarious work under unsupportive and often hostile urban conditions. Despite their significant contribution to environmental sustainability and resource recovery, these workers are rendered invisible in formal urban governance frameworks including master plan of Delhi.

This paper argues for a planning approach that centres the experiences, labour geographies, and infrastructural needs of informal waste workers. Recognising the everyday strategies of survival, resistance, and mutual aid developed by workers in these settlements highlights the importance of decentralised, accessible, and gender-sensitive infrastructure. If Delhi is to move toward inclusive and sustainable urban development, it must integrate informal labour into planning frameworks as central to how cities are built, maintained, and imagined.

Bridging the Digital Divide: A Sociological Study of the Impact of Digital Literacy on Women-Owned Very Small Businesses

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Women-owned very small businesses (VSBs) are essential drivers of local economies, yet many operate in resource-constrained environments where digital skills are limited. This study examines the influence of digital literacy on the operational performance, market reach, and sustainability

of women-owned VSBs, addressing a significant gap in entrepreneurship and digital divide research. Using a mixed-methods approach, a cross-sectional survey was conducted among 344 women entrepreneurs operating VSBs across diverse sectors in Kolkata and its adjoining districts. Digital literacy was measured through four dimensions—functional, communicative, security, and business application skills—while business performance indicators included customer engagement, operational efficiency, and revenue stability. Data were analysed using Partial Least Squares Structural Equation Modelling (PLS-SEM) to assess direct effects. Digital Literacy had a large, statistically significant effect on Business Outcome ($\beta = 0.826$, $p < 0.001$, 95% CI [0.780, 0.868]). The bootstrap analysis confirmed the stability of this effect (mean $\beta = 0.826$, SE = 0.022), with a very large effect size (Cohen's $f^2 = 2.15$). Results indicate a significant positive association between digital literacy and business performance. The findings highlight the need for targeted digital skills training, accessible technology infrastructure, and tailored interventions specific to their skill levels to enhance competitiveness of women-owned VSBs in digital economies. This study contributes to entrepreneurship literature by focusing on the under-researched link between very small business operations, and digital competencies, offering both theoretical and practical insights into closing the digital divide among women.

Inequalities in Digital-Usage among Adolescents: A Case Study of Hooghly District in West Bengal

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The research investigates gendered dimension of digital usage pattern among adolescent learners of Hooghly District, West Bengal by exploring socio-demographic, educational, economic and cultural variables that help in moulding digital behaviour among them. In rapidly evolving digital era, access to and effective use of digital technologies are crucial for academic and social advancements. However, the benefits of digitalization remain unevenly distributed, it is strengthening pre-existing socio-economic and gender disparities.

Drawing from the conceptual structure of digital inequalities, this study moves beyond access-based analysis to gender responsive socially framed digital-usage pattern among adolescent learners. The purpose of using digital devices amongst boys and girls are captured through Likert scale. Digital Usage Index (DUI) are constructed by using Principal Component Analysis to acquire frequency of online activities. To recognize the impact of variables such as – income, age, locality, religion, caste and parental education on standardized DUI, Ordinary Least Squares method was applied. But to evade multicollinearity among income and parental education, application of Ridge regression with k fold cross-validation is required for robustness.

The key findings of research indicates that family income of adolescent learners is a substantial and consistent regressor of digital usage among boys and girls. Higher earning facilitates better accessibility and affordability of infrastructure- tools, internet connectivity, steady data plan.

This will further tend to escalate more frequent and diverse utilization of digital consumption. Educational attainments of parents regarded as a proxy variable for parents' knowledge capital and positive attitudes. This plays a vital role but in a complicated way. Father's education of boys is negatively associated with digital usage among boys whereas mother's education level negatively impacted girls' digital engagement. Possibly indicating restrictive parenting approach, limiting screen time, concern about safety, security and to protect them from cyber risk. Age in another influencing predictor. Across both genders, young adolescent learners exhibit greater digital consumption probably because of initial exposure and flexible learning environments. Location attached additional layer to this study. Astonishingly, rural boys' digital consumption exceeded over urban boys while urban girls surpassed rural girls. In India, religion and caste is considered as one of the primary societal stratifications, reveal different levels of impact on digital usage. Existing dissimilarities and class structure help in shaping digital usage behaviour of adolescent learners. The study facilitates both academic and policy approaches through considering multiple-layered assessment of gender responsive digital usage pattern.

Bringing Hidden Work to Light: Enforcing Decent Work for Invisible Workers of the Global South

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The invisible workforce includes both paid and unpaid workers, where the contribution of women exceeds that of men due to their participation in both productive and reproductive labour. Historically, such work has been undervalued, underpaid, and unregulated, and even in the age of globalization, lack of adoption of decent work standards continues to afflict the economic and social well-being of these workers. Home-based and domestic workers perform paid work behind closed doors, rendering it both invisible and unrecognized. Interestingly, if a similar kind of work is performed at an office or in a factory setting, all labour laws become applicable, because then such work is included in the ambit of formal work. South Asia is amongst the poorest regions of the world, which has witnessed a rise in the feminization of work with the advent of the global value chains; however, it has been marred by a devaluation of the working conditions. The paper seeks to identify the nature and extent of invisible work and the associated gender disparities existing in this region. Furthermore, it outlines the indicators that are important to achieve decent work practices, as proposed by the ILO in its policy documents, and whether such conditions prevail in the labour market for invisible workers of South Asia—those in paid work in both home-based and domestic work. A comparative analysis of the South Asian countries would unravel the common and differential aspects of decent work norms and its challenges so that corrective measures can be implemented to uplift the conditions of the workers to ensure their overall well-being. The paper attempts to determine how South Asia is placed globally in terms of labour participation and its proportion of invisible workers. It proposes to understand how labour standards at the macro

level affect outcomes at the micro level, and further, it advocates constituting an institutional mechanism to achieve the same. The methodology includes building a conceptual framework to understand the implication of labour standards on labour market efficiency at the micro-level for invisible workers. We analyze data and resources from the ILO and the World Bank to achieve the stated objectives.

Prescribing Trends Branded vs Generic Medicines in Public Health Facilities of Maharashtra

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Irrational prescribing practices, inappropriate use of medicines, and the high cost of essential medications are significant health policy concerns in India. To address the issue of accessibility, a generic medicine scheme called *Jan Aushadhi* (*JA translates to People's Medicine*) was revamped and expanded in 2015. Additionally, physicians were advised to comply with the erstwhile Medical Council of India's regulation of prescribing medicines by their salt names. This is the first study which not only assessed the quality of prescriptions in public health facilities, but also examined whether the doctors' prescribing behaviours in public facilities are in sync with the government's intent to improve access to medicines through promotion of generics.

A survey was conducted at JA pharmacies near 11 public healthcare facilities in Mumbai and Palghar. Prescription slips written by doctors from the public healthcare system were collected from all patients who visited the JA pharmacies. After excluding prescriptions with illegible handwritings and incomplete data, a total of 330 prescriptions were included in the analysis.

The mean number of drugs per prescription was 2.7 and 4 for outpatients and inpatients, respectively. More than 53% of the outpatient prescription slips had no diagnosis on them, nearly 60% were devoid of patients' signs and symptoms, and listed branded medicines instead of generics. Among outpatient prescriptions, 1% contained injectable, while 32% included antibiotics. However, for those hospitalised, 82% of their prescriptions included injectable, and 64% contained antibiotics. Nearly 78% of the medicines prescribed came from the JA list. A total of 85% of drugs were prescribed from the Maharashtra State essential medicine list (EML) with 86% of OPD drugs and 83% of IPD drugs falling under this category.

The analysis reveals highly unsatisfactory prescribing practices in public health facilities. This underscores the urgent need to review the current laws regulating the practice of medicines, particularly those concerning the requirements for writing legible prescriptions, documenting patients' signs and symptoms, recording complete medical histories, selecting appropriate medications, making accurate diagnoses, and providing proper follow-up care. Equally important is to arm the public health authorities to ensure the implementation of these prescription regulations.

Trends, Growth, and Volatility in the Rubber Farming of the Bodoland Territorial Region of Assam: A Time-Series Analysis

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This study quantitatively assesses the performance of the rubber sector in the Bodoland Territorial Region (BTR) of Assam, a key non-traditional area for rubber cultivation in India. The primary objective was to analyse the trends, growth, and instability in the area, production, and productivity of natural rubber over the 17 years from 2007-08 to 2023-24, by estimating the Compound Annual Growth Rate (CGR) using a semi-logarithmic trend model and measuring instability with the trend-corrected Cuddy-Della Valle Index (CDVI). This observation indicates a sector characterised by rapid growth and high volatility. The production grew by 33.10% annually as a result of the tappable area's outstanding CGR of 30.99%, leading to a similarly impressive growth in production of 33.10% per year. Both trends were highly statistically significant ($p < 0.001$). In contrast, the analysis of productivity exhibited a marginal annual growth of only 1.61%, which was statistically non-significant ($p = 0.441$). The sector is characterised by severe instability, with the CDVI for tappable area, production, and productivity recorded at 33570.95%, 24270.25%, respectively. In conclusion, the study indicates that the extensive growth in BTR's rubber output has been driven almost exclusively by the significant expansion of the tappable area, with a negligible and statistically insignificant contribution from productivity improvements. This phenomenon of extensive growth, coupled with extreme instability, reflects a highly fragile sector that is vulnerable to agronomic and economic fluctuations. The main conclusion of this study is that BTR's rubber sector reflects a dichotomy of rapid expansion and acute fragility. On the one hand, the sector's output has grown enormously and statistically significantly, largely due to the tappable area's quick and substantial increase. This indicates a successful expansion of the sector's production base and significant investment in it. However, this expansion is based on poor groundwork. The most important finding is that there is no statistically significant trend in productivity. It shows that rather than being intensive, the sector's expansion has been extensive. This growth strategy is intrinsically weak since it is highly dependent on area expansion and is prone to significant volatility. For the thousands of smallholder farmers that are the foundation of the rubber industry in the BTR, the abnormally high level of output instability directly translates into extreme income insecurity. The correct trajectory of rubber farming is therefore unsustainable, even though it has been a quantitative success. The sector's long-term economic survival and the livelihoods of those who depend on it are seriously threatened by the combination of stagnant real productivity and excessive volatility. To safeguard the long-term economic security of the rubber growers of the region, it is advised that future interventions in policy relocate the emphasis from simple growth to sustainable intensification, giving major priority to initiatives that stabilise and significantly raise farm-level output.

Healthcare Providers' Experiences of Problems and Solutions: A Study of the Sub-Centres in a Few Areas of Rural West Bengal

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This paper speaks directly to the conference theme of “Enhancing Livelihood and Promoting Well-being” by examining the very foundation of the rural public health system. It argues that for rural communities, well-being and the ability to maintain a livelihood are fundamentally tied to the accessibility and quality of primary healthcare. This study moves beyond statistics to present a grounded, anthropological account of the challenges faced by healthcare providers at the grassroots level.

While the fieldwork for this paper was conducted a decade ago, its findings have gained a new, urgent relevance. In the years since, Sub-Centres (SCs) have been formally upgraded to Health and Wellness Centres (HWCs) under the National Health Mission. Yet, this policy shift has often been a change in name more than in substance. Many core, systemic problems not only persist but have, in some cases, worsened under a new banner. This paper, therefore, serves as a critical baseline, making this a crucial moment to re-examine the foundational issues of the past to better understand the challenges of the present.

Drawing on ethnographic research in four districts of West Bengal, the study gives voice to frontline health workers—the ANMs, male health workers, and ASHAs. Their narratives reveal a system strained by deep-seated problems: inadequate infrastructure, chronic staff shortages, insufficient and delayed funding, and a crippling paperwork burden that pulls them away from patient care.

Beyond these operational hurdles, the research highlights two timeless aspects of the rural health landscape. First, it explores the pivotal yet precarious world of Accredited Social Health Activists (ASHAs), who act as the essential bridge to the community but are hampered by low pay, heavy workloads, and a need for better training. Second, it details the complex reality of medical pluralism, where villagers navigate a “hierarchy of resorts,” moving flexibly between government clinics, informal practitioners, and traditional healers. This reveals how the formal system is just one part of a much larger ecosystem of health-seeking behaviours.

Finally, this paper argues that to truly improve well-being in rural India, we must look honestly at the persistent, ground-level realities of our primary health system. It offers a vital look back, providing the necessary context to move forward and ensure today's Health and Wellness Centres can finally fulfil their promise.

Emergence of Pro-Capitalist and Pro-Unionized Regime through Lobbying Activities and their Impact on Economic Growth

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Livelihood and wellbeing represent the welfare of the masses in a society. Welfare is functional on the nature of economic regime the economy operates. An economic regime is the representation of the dominant class in a society. It is not an exaggeration that the dominant class benefited more in one regime as compared to its rival regime. For example, if the economic regime is such that the dominant class is workers through effective strength of the trade union, then the benefit is appropriated by the workers whereas if the dominant class of the economy is employer or firms, then workers benefit less. Hence, the wellbeing of the society at large is directly or indirectly associated with the regime the economy operates.

In our paper we consider two economic regimes, pro-employer and pro-capitalist regime. In our paper economic regimes emerged from lobbying activities of different pressure groups. There are two pressure groups in our paper. Firms represent one of the pressure groups and the trade union represents another pressure group. Both the pressure groups lobby to form their representative government through election process. Once the government is elected, it enacts regulation (in our paper we consider labour regulation) which empowers either firms or labour in the labour market. We define pro-worker regulation increasing the bargaining power of labour and pro-employer regulation increasing the bargaining power of firms. We define economic regimes either as pro-capitalist regime or pro-unionized regime depending on the nature of labour regulation passed by the government. Firms benefit more through higher profit under pro-capitalist regime and workers benefit more under pro-unionized regime in terms of the wage rate they are offered. Finally, the economy under different regimes experienced different trajectories of growth rate owing to different degree of capital accumulation and the overall welfare differs under different regimes.

Employment Quality in India: Developing a Multidimensional Index

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This paper investigates the vital issue of employment quality in India, extending beyond simple measures such as unemployment rates or average wages. While these indicators are useful, they

do not fully capture job quality, which also includes income adequacy, job stability, and working conditions. Addressing this is essential because, in a developing country like India, many workers are technically employed but do not have decent work, which is crucial for achieving broader economic and social development goals.

The main research challenge is the absence of a comprehensive measure for employment quality in India. Existing studies rely on single indicators, such as wages or formal employment status, which do not capture the multidimensional nature of job quality. This research aims to explore key questions: How can we measure different facets of job quality? What proportion of workers are disadvantaged across multiple aspects of their employment? And which factors—such as income, stability, or working conditions—most significantly affect overall employment quality? The study seeks to develop an Employment Quality Index (EQI) that identifies the areas where workers in India face difficulties, providing a more detailed understanding of employment quality.

The study uses the 2023-24 Periodic Labour Force Survey (PLFS) data, focusing on wage and salaried workers to ensure consistent and comparable indicators.

The paper constructs the EQI using the Alkire-Foster methodology, which is widely used for multidimensional poverty indices. It assesses job quality across three main dimensions: Labour Income, Employment Stability, and Employment Conditions. The study establishes definitive cut-off thresholds to determine when workers are considered “deprived” in each specified dimension. For instance, a worker who makes less than two-thirds of the median wage is deemed to be lacking in income, and someone who has a casual or short-term contract is considered to be lacking in job stability. The final EQI score is a composite index that adds up the individual deprivations and gives each of the three dimensions the same weight. The methodology also involves calculating a number of metrics, including the headcount ratio (H), which shows the percentage of workers who are lacking in at least one area of job quality. The average deprivation intensity (A) indicates the severity of deprivations for those affected. At the same time, the adjusted headcount ratio (M0) combines the number of affected people and the seriousness of deprivations into a single figure. The results show that a lot of people in India are stuck in low-quality jobs. About 85% of wage workers in India are considered “multidimensionally deprived,” which means they are lacking in at least one crucial area of job quality. The study underscores gender disparities, indicating that female workers experience greater deprivation across all dimensions in comparison to their male counterparts. Educational attainment significantly influences job quality; individuals with lower educational levels are more prone to encounter subpar employment conditions, whereas those with higher academic qualifications tend to achieve superior employment outcomes. Furthermore, rural workers face more severe job quality issues than urban workers, often working in informal and insecure jobs.

Socio-Economic Status of Rubber Growers in North Garo Hills District of Meghalaya, India

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Agriculture is a fundamental occupation among tribal communities in Meghalaya, a state characterised by rigid topography, altitude and climatic conditions. The Garo Hills region of Meghalaya is well known for its horticultural crop production. Considering the suitable climatic condition and the soil fertility of the region, several farmers are engaged in plantation crops like areca nut, cashew nut, black pepper and betel nut vine for their livelihood. Adoption of rubber tree plantation also took place in Garo Hills region and it was considered to be profitable as rubber tree provides quick income to the growers. Rubber cultivation was first introduced in Garo Hills in North Garo Hills district which is erstwhile East Garo Hills in the year 1987 as a development programme initiative. A descriptive analysis is used to examine the socio-economic status and living conditions of the rubber growers of North Garo Hills District of Meghalaya. The data is based on primary data source collected from one of the community and rural development blocks using a structured schedule. A sample of 50 rubber growers was chosen for the study. From the study it was found that majority of the rubber growers are male and between the age of 61-70 years. 46 per cent of the lands owned by the growers were in the range of 1 to 3 acres and about 66 per cent of the growers have attained at least up to secondary level education. Highest percentage of income from rubber earned between ₹10001-25000 account for 54 per cent of the growers. The analysis of the living conditions also shows satisfactory as reflected in better housing facility, the items they owned and having access to drinking water, sanitation facility and electricity. As the study is solely based on descriptive statistics it is limited to summarising the observed patterns and cannot provide inferential insights or establish a causal relationship.

Mapping India's Informal Manufacturing Sector (1999–2023): A National Overview and a Data-Centric Analysis into Structure and Employment Dynamics in West Bengal

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The Informal Manufacturing Sector (IMS) in India has been a crucial source of livelihood, employing over three-fourths of manufacturing jobs as of 2022-23. However, despite a nearly 40

per cent rise in the number of enterprises since 1999, the growth in employment in this sector has been far from modest at 14 per cent. The growing gap between the rise in enterprises and the slower growth in employment shows that the sector is no longer absorbing workers the way it used to. While more informal manufacturing units are coming up, they aren't creating enough jobs highlighting a worrying trend where growth in the number of enterprises isn't translating into employment opportunities.

The sector continues to be dominated by Own Account Enterprises (OAEs), single-owner, family-run units without hired workers, constituting around 85 per cent of all units from 1999 to 2023. Hired Worker Establishments (HWEs), which indicate enterprises with wage employment, never crossed a 16 per cent share and even declined post-2010. The household production units, rather than evolving into HWEs, appear in a cycle of low productivity and basic survival. Spatially, IMS is predominantly rural, but there has been a gradual shift towards urban areas, especially in HWEs. Urban enterprises consistently employ more workers per unit, likely due to better access to markets and infrastructure. Rural units remain small and family-based, rooted in traditional livelihoods but limited in scalability.

A striking trend is the growing feminisation of enterprise ownership in the traditional segments of the sector. Female proprietors now account for nearly half of all enterprises, up from a quarter in 1999–2000. However, these are primarily in household-based OAEs. Male-owned enterprises, although declining, still dominate total employment, reflecting deeper gendered divides in productivity and opportunity.

Focusing on West Bengal, the state with the highest IMS shares consistently over the two decades, the paper finds similar patterns: OAEs dominate, rural enterprises are shrinking, and female ownership has increased primarily in small, non-hiring units. Hired employment is overwhelmingly male and increasingly urban.

The sector's industrial composition also shows worrying signs. There has been a concentration of informal enterprises in industries such as tobacco and apparel, which dominate with high contract employment, often under exploitative conditions. Overall, contract work has intensified across industries, embedding informal labour into broader supply chains without meaningful formalisation.

Economic Research with AI Tools

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AI is transforming how economists collect data, analyse trends, and model complex systems. It highlights how techniques such as machine learning algorithms, natural language processing, and large language models are enhancing the efficiency, scale, and scope of economic inquiry. We examine new applications of AI in macroeconomic forecasting, policy evaluation, labour

market analysis, and behavioural economics, while also addressing methodological innovations and challenges related to interpretability, bias, and data quality. Case studies demonstrate how AI-driven solutions can strengthen traditional econometric methods, enabling more adaptive and data-rich assessments. The paper concludes by exploring the future of AI in economics, the evolving skillsets required of researchers, and the ethical dimensions of AI-assisted policymaking.

The integration of artificial intelligence (AI) tools into social science research is also reshaping methodologies, data analysis, and theory development. This article investigates patterns and trends in the adoption of AI across various social science disciplines. Drawing on recent literature, case studies, and bibliometric data, we show how researchers are leveraging machine learning, natural language processing, and data mining to improve research outcomes. The analysis identifies emerging areas such as predictive modelling of social behaviour and automated content analysis, while also highlighting persistent concerns regarding ethics, bias, and transparency. The study concludes by outlining implications for future research and providing recommendations for the responsible and effective use of AI in the social sciences.

Beyond methodological advances, AI is changing how social scientists engage with policy, practice, and pedagogy. By enabling faster processing of large-scale datasets, AI-generated insights can inform evidence-based policymaking, strengthen social interventions, and provide innovative tools for teaching and learning in higher education. At the same time, increasing reliance on AI underscores the importance of interdisciplinary collaboration, where computer scientists, ethicists, and social scientists work together to ensure that technological progress aligns with social values and supports inclusive development.

Factors influencing farmers' access to Private Extension Services: A Case Study from Western Uttar Pradesh

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Within India's transforming agricultural sector, extension systems serve a vital role in facilitating knowledge dissemination among farming communities. Although private extension services have become increasingly important, owing to their adaptability and targeted assistance, their accessibility remains uneven, especially among small and marginal farmers. This research examines the socio-economic and institutional factors that affect farmers' access to private extension services in Western Uttar Pradesh.

Through a comprehensive household survey involving 360 farmers combined with logistic regression modeling, the study reveals the ways in which education, farm size, and formal agricultural training shape farmers' engagement with private extension services. Despite their potential, these

services continue to be primarily utilized by financially advantaged farmers, while others encounter hindrances including lack of awareness, limited financial resources, or geographical constraints that restrict participation and access to numerous opportunities. This study also identifies gaps in inclusivity, especially affecting elderly and less educated farmers, thereby emphasizing the requirement for tailored outreach and assistance.

Placing these findings within the broader global context, it is evident that several countries are moving towards adapting pluralistic models of agricultural extension. Experiences from various African countries, European Union, and Australia highlights that tools such as financial incentives, farmer-to-farmer learning, public-private collaborations, and integrated or bundled service models have enhanced efficiency, accountability, and accessibility of extension systems. These international practices suggest that when farmers are empowered with greater choice, linked with diverse knowledge sources, and supported through cooperative networks, then it leads to a more inclusive and higher quality of agricultural extension services.

By positioning private extension services within the wider framework of agricultural progress, the research advocates for a more diverse and accessible extension approach which would improve information dissemination, enhance collaboration between public and private sectors, and ensures fair access to such services for farmers from all economic backgrounds.

Notes

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Notes

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