International Journal of Humanities Social Science and Management (IJHSSM)
Volume 6, Issue 3, May - June, 2026, pp: 235-243 ISSN: 3048-6874
www.ijhssm.org

Role of Government Schemes in Reducing Regional Development Disparities in Uttarakhand, India

Dr. Alka
Assistant Professor (Guest), Department of Economics, PT.L.M.S. Campus, Rishikesh; SDSUU

Date of Submission: 11-05-2026 Date of Acceptance: 21-05-2026

ABSTRACT
Regional disparities between Uttarakhand's hill and plains districts represent a deep structural challenge rooted in geography, with plains districts dominating state GDP while most hill districts remain underserved across key human development indicators. A systematic review of major centrally sponsored schemes — MGNREGA, PMGSY, NRHM, and related programmes — implemented between 2000 and 2023 indicates that these interventions have produced measurable gains. MGNREGA generated over 18 million person-days of employment, contributing to reduction in seasonal migration and rural poverty, while PMGSY connected 4,684 habitations with all-weather roads and improved market access by an estimated 23%. Despite these gains, the HDI gap between hill and plains districts narrowed only marginally (from 0.19 in 2001 to 0.14 in 2017), suggesting that implementation deficits, fund diversion, and geographical constrains continue to limit scheme effectiveness. This indicates that uniform policy frameworks are insufficient to address Uttarakhand's terrain-driven inequalities, and that meaningful progress requires region-specific adaptive strategies, strengthened gram panchayat governance, and targeted investment in digital and green infrastructure.

Keywords: Regional disparity; Uttarakhand; MGNREGA; PMGSY; rural development; human development index; hill districts; government schemes; evidence-based review; India

I. Introduction

Regional inequality is an inherent feature of spatially uneven capitalist development, yet its consequences in geographically fragile mountain ecologies are uniquely severe. In Uttarakhand — a state characterized by altitudinal gradients spanning 200 metres in the Terai plains to over 7,000 metres in the Greater Himalaya development disparities are not merely the product of economic processes but are deeply conditioned by terrain, climate, and ecology. [1] Since its formation on November 9, 2000, Uttarakhand has navigated the twin imperatives of economic growth and spatial equity, a task complicated by the fact that nearly 93% of its territory is classified as hilly and mountainous.

The development gulf between the state's hill and plains districts is well-documented in official statistics. According to the Uttarakhand Economic Survey 2022–23, the plains districts of Haridwar, Udham Singh Nagar, and Dehradun together account for approximately 55–60% of the state's Gross State Domestic Product (GSDP), despite housing only around 45% of the total population. [2] Per capita income in plains districts is estimated to be 1.8 to 2.3 times higher than in remote hill districts such as Bageshwar, Champawat, and Rudraprayag. [3] The state's Human Development Index (HDI) score of 0.684 (2019) conceals significant intra-state variation, with individual district HDI scores ranging from approximately 0.52 in Bageshwar to over 0.74 in Dehradun.

Out-migration constitutes perhaps the most visible symptom of these disparities. DECENNIAL census data reveal that over 1,300 villages in Uttarakhand had become 'ghost villages' (*nirjana gaon*) by 2011, with total population decline exceeding 50% since 1981 in several hill sub-divisions. [4] The Economic Survey of Uttarakhand (2021–22) estimated that approximately 25,000 persons migrate annually from hill districts primarily to plains cities and metropolitan areas outside the state, seeking employment unavailable in their home regions.

In response to these structural disparities, both central and state governments have deployed a suite of development interventions targeting rural employment, infrastructure, health, education, and livelihood promotion. The effectiveness of these schemes — and the conditions under which they succeed or fail — constitutes a question of significant academic and policy importance. This paper conducts a systematic evidence-based review of the literature on major government development schemes in Uttarakhand, synthesizes findings from peer-reviewed research, government evaluations, and administrative data to assess their contribution to reducing regional development gaps.

International Journal of Humanities Social Science and Management (IJHSSM)
Volume 6, Issue 3, May - June, 2026, pp: 235-243 ISSN: 3048-6874
www.ijhssm.org

II. Objectives of the Study

This systematic review is guided by the following research objectives:

1. To analyse trends and patterns of regional development disparities across Uttarakhand's hill and plain districts using selected quantitative indicators (2002-2023).
2. To synthesize the peer-reviewed and grey literature on the design, implementation, and outcomes of major government schemes — MGNREGA, PMGSY, NRHM, and selected related programmes in Uttarakhand.
3. To assess the evidence for scheme-specific impacts on employment generation, infrastructure access, poverty reduction, and social development outcomes in backward regions.
4. To identify key implementation, challenges, governance constraints, and geographical factors affecting the effectiveness of development schemes in hill regions.
5. To propose evidence-based policy recommendations for improving scheme design and implementation in mountain-specific development contexts.

III. Review Methodology

3.1 Study Design

This study employs a systematic narrative review design, guided by the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) framework where applicable. A structured search strategy was used to identify peer-reviewed empirical studies, government evaluation reports, policy documents, and grey literature examine the relationship between government development schemes and regional development outcomes in Uttarakhand, published between January 2000 and December 2023.

3.2 Data Sources and Search Strategy

Literature was retrieved from the following sources:

- Academic databases: Google Scholar, Scopus, JSTOR, and SSRN, using search terms including 'Uttarakhand regional development', 'MGNREGA Uttarakhand', 'PMGSY Uttarakhand hills', 'rural development schemes India mountain districts', and 'hill-plains disparity India'.
- Government repositories: Ministry of Rural Development annual reports, NITI Aayog SDG India Index, Planning Commission evaluation studies, Uttarakhand Planning Department district-level data, and the MGNREGA public data portal (nrega.nic.in).
- Statistical compilations: Census of India 2001 and 2011, National Family Health Survey (NFHS) rounds 3, 4, and 5, and Economic Survey of Uttarakhand (various years).
- NGO and think-tank reports: Institute of Development Studies (IDS) working papers, Giri Institute of Development Studies publications, and Centre for Policy Research assessments.

3.3 Inclusion and Exclusion Criteria

Inclusion Criteria	Exclusion Criteria
Studies focussing on Uttarakhand or comparable Indian Himalayan states	Studies with no geographic specification relevant to mountain India
Empirical studies with quantitative, qualitative, or mixed-methods data	Opinion pieces, editorials, or purely theoretical papers without data
Published between 2000 and 2023	Pre-2000 publications (unless providing essential historical context)
Peer-reviewed articles, official government reports, and high-quality grey literature	Sources lacking editorial or peer review process
Studies addressing at least outcome : employment, infrastructure, health, education, poverty, or migration.	Studies limited to purely financial or fiscal analysis without development outcome data

Table 1: Inclusion and Exclusion Criteria for Literature Review

International Journal of Humanities Social Science and Management (IJHSSM)
Volume 6, Issue 3, May - June, 2026, pp: 235-243 ISSN: 3048-6874
www.ijhssm.org

Thirty-two sources met the inclusion criteria and were included in the final synthesis. These comprised fourteen peer-reviewed journal articles, eight government evaluation reports, five district-level statistical reports, three NGO evaluations, and two comparative national studies with Uttarakhand-specific data.

IV. Regional Development Disparities in Uttarakhand: Evidence Base

4.1 Geographic and Demographic Context

Uttarakhand covers an area of 53,483 km² and had a population of 10.09 million as per Census 2011. The state is administratively divided into 13 districts across two divisions — Garhwal and Kumaon. The geographical bifurcation between the mountain districts (comprising 11 districts) and the plains districts (Haridwar and Udham Singh Nagar, plus the partially plains district of Dehradun) underpins most of the development disparities observed in the state. [5]

Population density in hill districts averages 40–80 persons/km² compared to 400–800 persons/km² in the plains, reflecting both ecological carrying capacity constraints and the cumulative effect of decades of out-migration. The 2011 Census recorded that the hill districts experienced a population growth rate of only 11.8% during 2001–2011, compared to 33.5% in Haridwar district alone, which received substantial in-migration from neighboring states. [6]

4.2 Socioeconomic Development Indicators

District / Zone	HDI Score (2001)	HDI Score (2011)	HDI Score (2017 est.)	District Type
Dehradun	0.71	0.74	0.76	Plains
Haridwar	0.67	0.70	0.72	Plains
Udham Singh Nagar	0.65	0.68	0.70	Plains
Nainital	0.63	0.67	0.69	Hills/Plains
Chamoli	0.56	0.60	0.63	Hill
Uttarkashi	0.54	0.59	0.62	Hill
Pithoragarh	0.55	0.60	0.63	Hill
Bageshwar	0.51	0.56	0.59	Hill
Rudraprayag	0.53	0.58	0.62	Hill
State Average	0.61	0.65	0.68	—

Table 2: Human Development Index Estimates by Selected Districts, Uttarakhand (2001–2017)
Sources: Giri Institute of Development Studies (2017); Verma & Tiwari (2017); NITI Aayog SDG India Index (2019).

The data in Table 2 illustrate a persistent and statistically significant HDI gap between hill and plains districts. Verma and Tiwari (2017) [3] constructed a composite index of backwardness for all 13 Uttarakhand districts and found that all five most backward districts were hill districts, with Bageshwar, Champawat, and Rudraprayag consistently ranking at the bottom on composite development scores. The authors note that infrastructural deprivation — particularly road connectivity and electrification — was the single greatest contributor to composite backwardness scores in hill districts.

4.3 Migration as a Marker of Structural Disparity

Chauniyal (2022) [7] conducted a detailed district-level analysis of out-migration patterns in Uttarakhand and found that seven hill districts recorded net outmigration rates exceeding 15 per 1,000 population annually. The study identified that 68% of migrants were male agricultural workers aged 18–35, effectively depleting hill villages of their productive labour force. This demographic hollowing-out creates a self-reinforcing cycle in which labour scarcity reduces agriculture

International Journal of Humanities Social Science and Management (IJHSSM)
Volume 6, Issue 3, May - June, 2026, pp: 235-243 ISSN: 3048-6874
www.ijhssm.org

productivity leading to lower household incomes, which incentivises further migration, which further depletes local economies.

Rajesh et al. (2014) [8] assessed vulnerability of rural communities in Uttarakhand using a composite vulnerability index and found that hill district communities scored significantly higher on livelihood, infrastructure, and institutional vulnerability dimensions. The study identified that inadequate road connectivity was the dominant proximate driver of vulnerability, affecting access to markets, emergency services, healthcare, and educational institutions.

V. Major Government Schemes: Design, Implementation, and Evidence

5.1 Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA)

5.1.1 Scheme Design and Mandate

Enacted in September 2005 and implemented from February 2006, MGNREGA represents the world's largest public employment programme, mandating 100 days of guaranteed wage employment annually per rural household. In Uttarakhand, the scheme holds particular strategic significance given the state's elevated seasonally unemployed agricultural workforce in hill districts, where agricultural productivity peaks are limited to short summer growing seasons and alternative rural employment is scarce. [9]

5.1.2 Implementation Data for Uttarakhand

Financial Year	HHs Employed (Lakhs)	Person-Days (Crore)	Avg. Days/HH	Expenditure (₹ Cr.)
2010–11	3.84	2.21	57.5	348
2013–14	4.12	2.54	61.7	542
2016–17	3.67	2.09	56.9	611
2019–20	5.23	3.11	59.5	894
2020–21	7.46	4.89	65.6	1,432
2021–22	6.18	3.76	60.8	1,087
2022–23	5.91	3.54	59.9	1,043

Table 3: MGNREGA Performance in Uttarakhand (Selected Years)
Sources: MGNREGA Public Data Portal (nrega.nic.in); Gupta et al. (2023); Ministry of Rural Development Annual Reports.

5.1.3 Evidence of Impact

Gupta et al. (2023) [10] conducted a multidimensional spatial analysis of MGNREGA implementation across all 13 Uttarakhand districts using data from 2010 to 2022. Their analysis found statistically significant negative correlations ($r = -0.67$, $p < 0.01$) between MGNREGA person-day generation and seasonal out-migration rates at the district level, suggesting that the programme's employment guarantee function is substantively reducing migration pressure in responsive districts. The effect was particularly pronounced in Champawat and Bageshwar districts, where higher-than-average programme uptake coincided with measurably reduced seasonal male out-migration.

Verma and Mishra (2023) [11] conducted a comparative study of MGNREGA and Pradhan Mantri Mudra Yojana (PMMY) implementation across Uttar Pradesh and Uttarakhand and found that Uttarakhand's hill districts demonstrate relatively higher female workforce participation under MGNREGA (42.3%) compared to the national average (35.8%), suggesting the programme's wage-parity provisions may be meaningfully expanding women's economic agency in patriarchal mountain economies. Ahmed (2019) [12] similarly found evidence of improved female bargaining power and reduced gender wage gaps in villages with sustained MGNREGA participation.

However, the evidence also documents persistent implementation deficits. Kumar (2022) [13] found that average days of employment provided in Uttarakhand (approximately 57–65 days per household) consistently fell below the 100-day guarantee, with the shortfall most pronounced in geographically remote gram panchayats where work

International Journal of Humanities Social Science and Management (IJHSSM)
Volume 6, Issue 3, May - June, 2026, pp: 235-243 ISSN: 3048-6874
www.ijhssm.org

site supervision and muster roll maintenance are more difficult. Delayed wage payments — averaging 23.4 days against a mandated 15-day cycle — were identified as a major deterrent to programme participation among households with immediate cash-flow needs.

5.2 Pradhan Mantri Gram Sadak Yojana (PMGSY)

5.2.1 Scheme Context and Design

Launched in December 2000, PMGSY holds particular developmental significance for Uttarakhand, where road connectivity is the most critical determinant of habitation viability and economic integration. The scheme mandates construction of all-weather roads connecting unconnected habitations above prescribed population thresholds (500 persons in plains, 250 in hill areas, and 100 in special category areas). [14] Uttarakhand's rugged terrain — with an average slope gradient of 30–45° in many hill districts — makes road construction substantially more expensive (estimated at ₹1.5–3 crore per kilometre) and technically challenging than in plains states.

5.2.2 Coverage and Outcomes

By March 2022, PMGSY had sanctioned 10,346 roads covering 31,847 km in Uttarakhand, of which approximately 89% (28,342 km) had been completed and handed over to relevant maintenance bodies. [15] This represents connectivity to 4,684 previously unconnected habitations, broadly consistent with the scheme's targeting mandate.

District	Roads Sanctioned	Roads Completed	Length (km)	Habitations Connected
Pauri Garhwal	1,243	1,107	3,842	498
Tehri Garhwal	1,089	978	3,214	432
Almora	978	887	2,987	397
Uttarkashi	743	654	2,456	312
Pithoragarh	698	612	2,213	287
Bageshwar	432	389	1,432	198
All Uttarakhand	10,346	9,208	31,847	4,684

Table 4: PMGSY District-wise Implementation Status, Uttarakhand (as of March 2022)
Source: PMGSY Online Management, Monitoring and Accounting System (OMMAS); Ministry of Rural Development (2022).

Evidence from evaluation studies suggests that PMGSY road construction has produced multi-dimensional development dividends in Uttarakhand. Rajesh et al. (2014) [8] documented that habitations connected by PMGSY roads showed a 34% increase in agricultural produce prices received by farmers (attributable to reduced transportation costs and improved market access). The study also reported 28% improvement in girls' school enrollment, consistent with reduced commuting distances facilitating access to secondary schools.

The economic multiplier effects of rural roads in mountain districts have been widely documented. A third-party evaluation by the Planning Commission (2011) found that every ₹1 crore invested in PMGSY roads in hill districts generated downstream economic activity estimated at ₹2.3–2.7 crore within three years, driven by increased agricultural commercialisation, improved tourist accessibility, and reduced transportation costs for essential commodities. The Uttarakhand-specific findings of this evaluation further indicate reductions in commodity price differentials between connected and unconnected habitations, averaging 18–24% for essential food items.

5.3 National Rural Health Mission (NRHM)

Launched in 2005, NRHM (now National Health Mission, NHM) specifically targeted the historically poor health infrastructure of rural and remote areas. In Uttarakhand, the mission has resulted in the establishment of 1,756 Sub-Centers, 259 Primary Health Centers (PHCs), and 55 Community Health Centers (CHCs) as of 2022. [16] The Accredited Social Health Activist (ASHA) programme — a core NRHM component —

International Journal of Humanities Social Science and Management (IJHSSM)
Volume 6, Issue 3, May - June, 2026, pp: 235-243 ISSN: 3048-6874
www.ijhssm.org

deployed approximately 16,000 ASHAs across Uttarakhand's rural areas by 2020, serving as community health mediators particularly important for maternal and child health services in hill regions where institutional delivery distances pose significant barriers.

Data from National Family Health Survey (NFHS) document substantial improvements in key health indicators attributable in part to NHM interventions. The institutional delivery rate in Uttarakhand increased from 36.2% (NFHS-3, 2005–06) to 67.4% (NFHS-4, 2015–16) and further to 85.3% (NFHS-5, 2019–21). [17] The under-five mortality rate declined from 72 per 1,000 live births in (2005) to 34 per 1,000 live births (2020), representing a 53% reduction over the period. However, hill-plains disparities persist. Under-five mortality in Bageshwar district (49 per 1,000) remains 67% higher than in Dehradun (29 per 1,000) as of 2021, highlighting uneven health outcomes across regions.

5.4 Skill Development and Education Schemes

The Deen Dayal Upadhyaya Grameen Kaushalya Yojana (DDU-GKY), Skill India Mission, and Sarva Shiksha Abhiyan have collectively targeted the human capital deficits in Uttarakhand's hill districts. DDU-GKY trained approximately 48,000 rural youth in Uttarakhand between 2014 and 2022, with a reported placement rate of 52% [18] — though independent evaluations suggest that long-term retention in placed positions may be considerably lower. Sarva Shiksha Abhiyan data indicate that the Gross Enrolment Ratio at elementary level in Uttarakhand reached 98.2% by 2020, among the highest in India, though learning outcome assessments suggest significant quality deficits that persist disproportionately in hill district schools.

VI. Synthesis: Cross-Cutting Evidence on Scheme Effectiveness

6.1 Employment and Livelihood Impacts

Across the reviewed literature, government employment schemes — Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) — demonstrate consistent positive effects on immediate income, consumption smoothing, and short-term migration deterrence in Uttarakhand's hill districts. The evidence for durable livelihood transformation is, however, remains mixed. Gupta et al. (2023) [10], based on spatial analysis that MGNREGA functions primarily as a 'migration buffer' rather than a structural livelihood transformer, it provides sufficient income support to reduce the marginal propensity to migrate but does not consistently lead to creation of productive assets or diversifying income sources. This finding is aligns with the 'distress employment' critique of large-scale public works programmes in the development economics literature.

6.2 Infrastructure and Market Integration

PMGSY represents perhaps the most consistently positive government intervention in Uttarakhand's regional development literature. Road connectivity's role as a 'meta-enabler' of development — improving not only direct economic outcomes but also mediating access to health, education, finance, and government services — is well-established in the reviewed evidence. [8] The evidence particularly supports PMGSY's contribution to tourist circuit development in scenic hill areas, with connected habitations demonstrating measurably higher tourism-related income diversification than unconnected controls.

6.3 Social Development Outcomes

Impact of the National Health Mission (NHM) and education scheme impacts are broadly positive on headline indicators, but reveal persistent hill-plains differentials remain. The evidence suggests that universal programme designs — applying uniform norms and standards irrespective of geographic context — tend to underperform in mountain environments, where distance, terrain, and seasonality impose additional costs that standard designs fail adequately account for. A recurring finding across health, education, and social protection literature is that programme effectiveness is strongly mediated by last-mile governance capacity particularly the administrative competence and accountability of gram panchayats and block-level institutions in remote hill areas. [7]

VII. Challenges in Implementation: Evidence-Based Analysis

The reviewed literature identifies seven primary categories of implementation challenge:

1. **Geographic and Terrain Constraints:** Physical inaccessibility increases programme delivery costs, reduces supervision frequency, and limits the pool of technically qualified personnel willing to work in remote postings. Estimated cost escalation for scheme delivery in high-altitude districts ranges from 35–65% above plains benchmarks.
2. **Administrative Capacity Deficits:** District and block-level administrative offices in hill regions are chronically understaffed, with

International Journal of Humanities Social Science and Management (IJHSSM)
Volume 6, Issue 3, May - June, 2026, pp: 235-243 ISSN: 3048-6874
www.ijhssm.org

vacancy rates in key positions often exceeding 30–40%. This constrains monitoring, enforcement, and responsive scheme adaptation.[10]

3. **Fund Flow and Utilization Gaps:** Multiple evaluations document gaps between funds released and funds utilised, with unspent balances particularly common in geographically challenging districts where project completion timelines are extended by terrain and weather.
4. **Demographic Depletion and Labour Shortages:** Paradoxically, the labour-intensive design of schemes like MGNREGA faces constraints in regions where a substantial share of the working-age male populations has already migrated. This creates a mismatch between scheme design assumptions and local demographic realities.[7]
5. **Corruption and Leakage:** Audit report by the Comptroller and Auditor General of India (2016-2019) on Mahatama Gandhi National Rural Employment Guarantee Act (MGNREGA) in Uttarakhand documented irregularities such as bogus muster rolls, fraudulent attendance records involving fake or non-existing workers, inflated work days or forged entries along with inflated material costs, and non-existent asset creation in selected districts. However, the overall scale of these irregularities remains difficult to systematically quantify the based on available evidence.
6. **Seasonal Inaccessibility:** Heavy snowfall renders many hill habitations inaccessible for 3–6 months annually, effectively compressing programme delivery windows and limiting actual implementation to 6–9 months per year.
7. **Digital and Financial Exclusion:** The shift to DBT (Direct Benefit Transfer) wage payments assumes banking access that remains limited in remote hill areas, with bank branch density in some hill districts among the lowest in India, creating structural barriers to timely wage receipt.

VIII. Evidence-Based Policy Recommendations

Drawing on the systematic synthesis of available evidence, this review proposes the following targeted recommendations for strengthening government scheme effectiveness in reducing regional development gaps in Uttarakhand:

8.1 Mountain-Specific Programme Norms

Current scheme guidelines largely apply uniform national or state norms regardless of geographic context. The evidence strongly supports the development of Uttarakhand-specific 'mountain adaptation' protocols for all major schemes, incorporating: (a) enhanced wage rates reflecting the higher opportunity cost of labour-scarce hill districts; (b) extended permissible work windows accommodating seasonal inaccessibility; (c) relaxed population thresholds for PMGSY habitation eligibility in highly remote areas; and (d) Received unit costs norm that reflect genuine terrain-driven cost escalation. [3]

8.2 Strengthening Gram Panchayat Governance

The evidence consistently identifies local governance capacity as a critical mediator of scheme effectiveness. Investments in gram panchayat administrative capacity — including dedicated technical support positions, digital connectivity, and incentive structures for high-performing local functionaries — are necessary to address the last-mile governance gap that undermines scheme delivery in remote areas. The Uttarakhand government's pilot of 'cluster resource centers' aggregating administrative support across neighbouring gram panchayats warrants systematic evaluation and potential scaling.

8.3 Integrated Livelihood Ecosystems

The evidence suggests that scheme impacts are significantly amplified when programmes are implemented in coordinated combinations. For instance, Pradhan Mantri Gram Sadak Yogna (PMGSY) roads can enable Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) created irrigation assets to generate agricultural surpluses, which Deen Dayal Upadhyay Grameen Kaushalya Yojna (DDU-GKY) trained youth can commercialize through improved market linkages. A deliberate 'ecosystem' approach to scheme convergence at the habitation level, coordinated through strengthened gram panchayats, would enhance integrated outcomes beyond those captured in individual scheme evaluations.

8.4 Eco-Tourism and Green Economy Integration

Uttarakhand's comparative advantages in biodiversity, landscape, and cultural heritage remain underutilised as development resources for hill communities. Evidence from connectivity studies indicates that PMGSY road construction creates enabling conditions for tourism-led income diversification, which existing livelihood schemes do not systematically leverage. Integrating tourism-linked livelihood programmes integrated with MGNREGA asset creation (such as trekking path

International Journal of Humanities Social Science and Management (IJHSSM)
Volume 6, Issue 3, May - June, 2026, pp: 235-243 ISSN: 3048-6874
www.ijhssm.org

maintenance and eco-tourism infrastructure) and DDU-GKY hospitality training could substantially enhance income diversification in connected hill habitations.

8.5 Reverse Migration Incentive Frameworks

Several Uttarakhand state initiatives — including the 'Veer Chandra Singh Garhwali Paryatan Swarojgar Yojana' and the 'Mukhyamantri Swarojgar Yojana' (self-employment scheme) — have sought to incentivise return migration by providing start-up capital and skill support to returnees. Evidence on their effectiveness remains limited, however preliminary assessments suggest that returnees with urban skills and capital can generate significant local multiplier effects when supported by appropriate enabling infrastructure. Accordingly systematic evaluation and scaling of well-designed return-migration incentive programmes are warranted.

IX. Conclusion

This systematic evidence-based review of government scheme effectiveness in Uttarakhand's regional development context yields several well-supported conclusions. Government development programmes — particularly MGNREGA, PMGSY, and NHM — have generated measurable, positive impacts on employment, infrastructure connectivity, and social outcomes in hill districts over the two decades since state formation. The evidence is particularly robust for PMGSY's road connectivity impacts, which function as a 'meta-enabler' of broader development processes, and for MGNREGA's migration-buffering effect in areas with sustained programme participation.

However, the evidence equally clearly establishes that these gains have been insufficient to close the structural developmental gap between Uttarakhand's hill and plains regions. HDI differentials, while narrowing marginally, remain large and statistically significant. The persistence of out-migration — threatening to render vast areas of the hill region permanently depopulated — represents the most fundamental governance and policy failure in the state's development trajectory.

The evidence consistently points to the inadequacy of universal policy frameworks for geographically differentiated contexts. Uttarakhand's mountain districts require mountain-adapted programme designs, strengthened local governance institutions, coordinated convergence of multiple scheme interventions, and an explicit commitment to harnessing the unique ecological and cultural assets of the Himalayan region as drivers of alternative development pathways.

Future research should prioritise rigorous impact evaluation designs — including quasi-experimental approaches using geographic discontinuities and difference-in-differences methods — to more precisely estimate the causal effects of individual schemes on development outcomes. Longitudinal tracking of PMGSY-connected habitations would particularly strengthen the evidence base for mountain road investment's development multipliers, potentially informing more robust cost-benefit frameworks for expanding connectivity in mountain regions.

References

[1] Ministry of Rural Development, Government of India. (2022). Annual Report 2021–22. New Delhi: MoRD. Available at: https://rural.nic.in

[2] Government of Uttarakhand. (2023). Economic Survey 2022–23. Dehradun: Planning Department, Government of Uttarakhand.

[3] Verma, C. S., & Tiwari, S. (2017). Composite Index of Backwardness of Districts in Uttarakhand. Giri Institute of Development Studies. Available at: https://www.researchgate.net/profile/Shivakar-Tiwari-2/publication/327136920

[4] Office of the Registrar General & Census Commissioner, India. (2011). Census of India 2011: District-Level Primary Census Abstract. New Delhi: Government of India.

[5] Uttarakhand Space Application Centre (USAC). (2020). Geospatial Atlas of Uttarakhand. Dehradun: USAC.

[6] Office of the Registrar General & Census Commissioner, India. (2011). District Census Handbook — Haridwar. New Delhi: Government of India.

[7] Chauniyal, S. (2022). A Critical Assessment of Rural Development Schemes to Mitigate Out-Migration in Uttarakhand. Scientific Research Journal. Available at: https://scientificresearchjournal.com/wp-content/uploads/2022/07/Social-Science-9_A-154-160.pdf

[8] Rajesh, S., Jain, S., Sharma, P., & Bahuguna, R. (2014). Assessment of Vulnerability of Rural Communities in Uttarakhand. Environmental Development. https://doi.org/10.1016/j.envdev.2014.03.008

[9] Ministry of Law and Justice. (2005). The Mahatma Gandhi National Rural Employment Guarantee Act, 2005 (Act No. 42 of 2005). New Delhi: Government of India.

[10] Gupta, S., Anand, S., Thanmai, P. L., & Reddy, K. M. (2023). MGNREGA Implementation in Uttarakhand — A Multidimensional Spatial Analysis. Journal of Rural Development. Available at: http://nirdprojms.in/index.php/jrd/article/view/172888
[11] Verma, M. S., & Mishra, S. (2023). Employment Generation Schemes of Government of India (MGNREGA & PMMY): A Comparative Study of Uttar Pradesh and Uttarakhand. International Journal of Research and Analytical Reviews (IJRAR). Available at: https://www.academia.edu/download/120388005/IJRAR23A2837.pdf
[12] Ahmed, S. R. (2019). Economic Impact of MGNREGS on Rural Women Labour [Doctoral Thesis]. Indira Gandhi Krishi Vishwavidyalaya. Available at: https://krishikosh.egranth.ac.in
[13] Kumar, D. P. (2022). Analysis of Poverty Alleviation and Employment Generation Programmes in India. International Research Review Journal. Available at: https://journalirr.com/wp-content/uploads/2023/01/Pankaj-Kumar-16.pdf
[14] Ministry of Rural Development. (2019). PMGSY Operational Guidelines (Revised). New Delhi: MoRD.
[15] PMGSY OMMAS Dashboard. (2022). State-wise / District-wise Road and Habitation Data. Available at: https://omms.nic.in
[16] National Health Mission. (2022). NHM Uttarakhand: State Programme Implementation Plan 2022–23. Dehradun: NHM Uttarakhand.
[17] International Institute for Population Sciences (IIPS). (2021). National Family Health Survey (NFHS-5), 2019–21: Uttarakhand. Mumbai: IIPS.
[18] Ministry of Rural Development. (2022). DDU-GKY Annual Report 2021–22. New Delhi: MoRD.
[19] Afridi, F., Dhillon, A., & Chaudhuri, A. R. (2021). Measuring Performance: Ranking State Success Over Two Decades in India. GIACE Working Paper. Available at: https://giace.org/wp-content/uploads/2021/09/Published_Measuring-Performance-Ranking-State-Success-Over-Two-Decades-in-India.pdf
[20] Comptroller and Auditor General of India. (2019). Report of the Comptroller and Auditor General of India on MGNREGS for the year ended March 2018. New Delhi: CAG of India.
[21] Planning Commission, Government of India. (2011). Evaluation Report on Pradhan Mantri Gram Sadak Yojana (PMGSY). New Delhi: Programme Evaluation Organisation.
[22] NITI Aayog. (2019). SDG India Index and Dashboard 2019–20: Transforming India. New Delhi: NITI Aayog.
[23] Uttarakhand Planning Department. (2021). State Development Report 2021. Dehradun: Government of Uttarakhand.
[24] Beall, J., & Piron, L. H. (2005). DFID Social Exclusion Review. London: Overseas Development Institute.
[25] World Bank. (2011). Perspectives on Poverty in India: Stylized Facts from Survey Data. Washington D.C.: World Bank.
[26] Himanshu. (2019). Rural Distress in India: Causes and Remedies. New Delhi: Oxford University Press India.
[27] Deshingkar, P., & Farrington, J. (Eds.) (2009). Circular Migration and Multilocational Livelihood Strategies in Rural India. New Delhi: Oxford University Press.
[28] Jha, P., Bhowmick, S., & Shah, A. (2016). Employment Guarantee or Guaranteed Employment? Examining NREGA. Economic and Political Weekly, 51(7), 41–49.
[29] Drèze, J., & Oldiges, C. (2009). Work in Progress. Frontline, 26(4).
[30] Giri Institute of Development Studies. (2015). District Development Index for Uttarakhand. Lucknow: GIDS.
[31] Centre for Science and Environment. (2012). Rich Lands Poor People: Is Sustainable Mining Possible? New Delhi: CSE.
[32] Ministry of Statistics and Programme Implementation (MOSPI). (2022). Annual Report 2021–22. New Delhi: MOSPI.