



HIMACHAL PRADESH HUMAN DEVELOPMENT REPORT 2025

Building the Future in a Climate-Impacted World



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Summary Report

Introduction

Himachal Pradesh is at a crossroads in its development journey. A predominantly mountainous Himalayan state with extensive forest cover and abundant water resources, Himachal Pradesh is both a critical ecological asset for India and a region in an ecological crisis. The state's development trajectory is increasingly being reshaped by climate change. Acknowledging this challenge, the Government of Himachal Pradesh (GoHP) is working towards creating a climate-sensitive development pathway for the state and its people. A step in that direction is this Himachal Pradesh State Human Development Report (HDR), prepared by the GoHP, in partnership with the United Nations Development Programme (UNDP). This HDR reviews the state's progress and vulnerabilities across five key themes - agriculture, water and forestry; construction and tourism; health; climate finance; and governance - and offers a blueprint for Himachal Pradesh's development journey in an increasingly warming world.

This report was developed through an inclusive, evidence-based process led by the GoHP. The HDR's thematic chapters were drafted by five Technical Working Groups (TWGs) comprising experts from government departments, academia, civil society, and industry. The TWGs drew on their expertise and utilised government statistics, research and policy documents to develop evidence-based chapters aligned to their respective themes. The analysis was strengthened by field visits and interviews across seventeen diverse sites to capture the lived experiences of farmers, women's groups, tribal communities, informal workers, and local governance institutions.

The final report was reviewed and approved by a state-level Steering Committee, chaired by the Chief Secretary ensuring alignment with the state's goals and priorities. This participatory approach ensured that the State HDR is not only evidence-backed and analytically rigorous, but also grounded in the realities of those most exposed and vulnerable to climate change. The findings of this report affirm that Himachal Pradesh has made important strides in mainstreaming climate

action into the state's policies and institutions. However, it remains imperative to deepen the integration of resilience, inclusivity, and sustainability into the State's development trajectory going forward.

I. Human Development and Climate Change

Himachal Pradesh has made remarkable progress in health, education, and poverty reduction. Literacy rates have reached 93.3%, well above the national average of 81%, and multidimensional poverty declined from 7.6% (2015–2016) to 4.9% (2019–2021), significantly lower than India's 14.9% in 2019–21.¹ Per capita income grew by 9.6% in 2024–2025 outpacing the national average, while life expectancy increased to 72.6 years compared to 69 years nationally.^{2,3} Yet challenges persist: over 30% of children under five are stunted or underweight and rural health centres suffer from severe staff shortages.^{4,5}

Himachal's economy is shifting away from agriculture. The sector employs 54% of the state's total workforce but it contributes only 14% Gross Value Added (GVA), making its share in state's income less than that of industry and services. Industry employs 22% of the workforce and services 24%, but their shares to the state's GVA are much higher - at 40% and 45% respectively. Manufacturing, especially pharmaceuticals, is buoyed by Micro, Small & Medium Enterprises (MSMEs) and contributes around 27% to the state's GVA, while tourism accounts for 7.8%.⁶

However, climate change threatens to forestall progress. Average annual temperatures have risen by 1.5°C since 1901, with temperatures projected to rise to between 2–3°C by mid-century.⁷ Himachal is also seeing an increase in days with extremely heavy rainfall (over 100mm) with the period between 1 June and 6 September 2025 seeing 46% excess rainfall, contributing to 366 lives lost and over ₹4000 crore in damage.⁸ Glaciers are retreating at rates exceeding 50 metres per year, and the creation of new glacial lakes has increased the risk of Glacial Lake Outburst Floods (GLOFs).^{9,10,11,12} The cumulative effects have triggered disasters that have resulted in more than

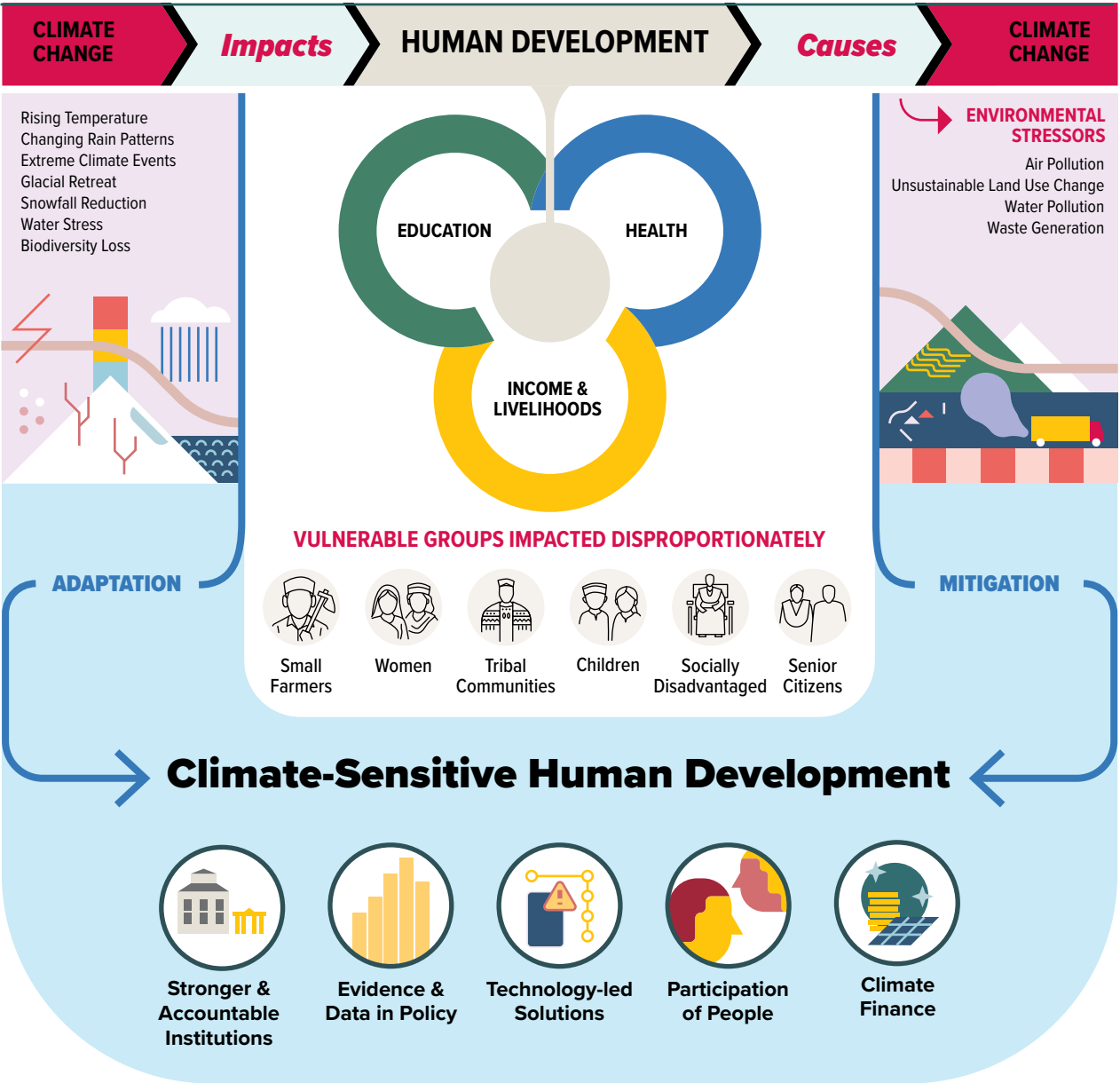
1,700 deaths during recent monsoon seasons and caused losses to the tune of ₹46,000 crore in just the last four years. Water stress is intensifying, with two-thirds of traditional springs drying up, forcing some villages to depopulate. Forest fires are also surging, with 2,580 incidents reported in 2024–2025 compared to 856 in 2022–2023.¹³

Climate impacts act as risk multipliers by exacerbating existing inequalities and threatening sectors that are key to the state’s economy now and in the future. Charting a path toward climate-consonant development is an imperative for the state as it continues growing its economy while protecting what makes it unique - its ecology, biodiversity, culture, and people.

II. Linking Development and Climate Action Across Sectors

This HDR underlines that Himachal Pradesh’s development path is inseparable from its climate resilience, and hinges on coordinated action across sectors (Figure 1). Agriculture, forestry, and water systems are deeply interdependent, with forests sustaining hydrological flows and agriculture relying on both forests and water. At the same time, even as agriculture provides employment for roughly half the state’s population, its expansion into forests reduces the latter’s ability to provide ecosystem services. Similarly, construction and

FIGURE 1: Framework of the climate-sensitive Himachal Pradesh HDR



tourism, although important sources of livelihoods for roughly a quarter of Himachal Pradesh's population, also strain ecological systems. Health outcomes are increasingly tied to climate variability; disease burdens and access to care are influenced by it. These linkages require policy-level regulation to align growth with environmental protection.

Climate finance and governance are critical pillars of this ecosystem – addressing these linkages by ensuring adequate resources and institutional mechanisms. While mobilising finance through green budgeting and innovative instruments simultaneously can unlock resources for agriculture, forestry, tourism, health, and infrastructure, foregrounding gender and social inclusion can transform vulnerable groups into active agents of adaptation. Already in some panchayats, like the Dhamun panchayat in Shimla, women farmers, with the support of the GoHP, have combined revival of traditional knowledge in farming, water conservation with modern technologies to create context-specific resilience strategies ranging from crop diversification to value addition of agricultural commodities. The adaptive capacity of these communities can be strengthened with further improvements in climate data systems and early warning mechanisms through disaster risk reduction. These data systems can also support agricultural planning, public health responses, and tourism preparedness.

This HDR calls for a holistic approach in which climate action is not treated as an isolated domain. By aligning resilience with equity, and ecological protection with economic opportunity, Himachal Pradesh can sustain its human development achievements and serve as a model for other mountain states and regions across India.

III. Agriculture, Water, and Forestry

Agriculture directly employs more than half the state's workforce, yet nearly 80% of cultivated land is rainfed. This renders farmers acutely vulnerable to climate impacts including erratic rainfall patterns and glacial melt.¹⁴ Forests cover 28% of the state's geographic area and provide essential ecosystem services like groundwater recharge, slope stabilisation, biodiversity conservation, and micro-climatic regulation. These services underpin water security and agricultural productivity. Their annual

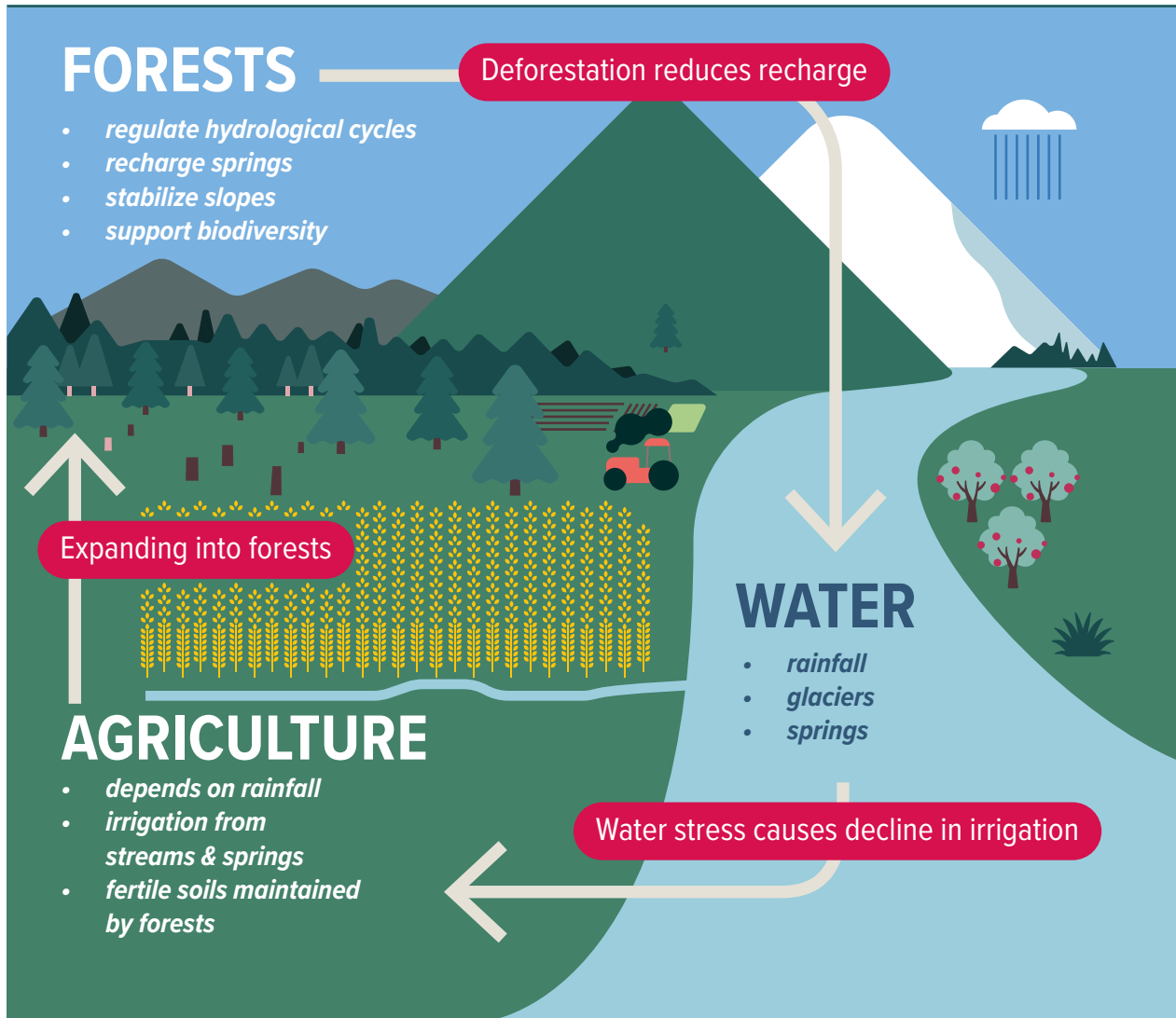
contribution to the state's economy is quantified at ₹15,132 crore, ₹468 crore and ₹317 crore through water provisioning, soil erosion control, and pollination services respectively. However, climate change, forest degradation, and land-use shifts are eroding these linkages (Figure 2). While forests still cover over 28% of Himachal Pradesh, between 2001 and 2023, more than 10,900 hectares were diverted for development projects. Nearly 70% of traditional sources of water, like springs and *khuls*, are now at risk due to deforestation and erratic rainfall. Forest fires, invasive species, and shifting vegetation zones further undermine resilience. Apple cultivation, once a mainstay of rural income, is migrating to higher altitudes seeking cooler temperatures. In Kullu, apple flowering and fruiting now occur seven to ten days earlier, resulting in shorter growing seasons and reduced yields. Overall, the drop in yields in the state has prompted a shift toward pomegranate and vegetable farming.

Vulnerable groups — especially women, smallholders, and marginal communities — face disproportionate impact. Much of the household agricultural and water-related labour is performed by women.

Promising initiatives exist, such as the *Prakritik Kheti Khushhal Kisan Yojana*, watershed management projects, afforestation drives, and community-led innovations like intercropping, polyhouse cultivation, and ecosystem service payments.¹⁵ These initiatives can be supplemented by efforts towards improving climate adaptation and building resilience in these sectors. Interventions to expand cold-chain capacity will minimise post-harvest losses from climate impacts. Adaptive capacity of forestry and agricultural systems can be improved by adopting digital monitoring tools like GIS and mobile apps. Water stress can be mitigated by employing water reuse and circular water economy practices. Given Himachal Pradesh's forest wealth, building a Non-timber Forest Produce (NTFP) based circular economy will create green jobs and diversify livelihoods for forest dependent communities. Enhancing institutional capacity across levels for convergence of schemes will help address implementation related coordination challenges.

While these sectors face the brunt of climate impacts, they also contribute to climate change through emissions from fertiliser use, residue burning, energy-intensive irrigation, and deforestation. Bolstering Himachal Pradesh's existing efforts towards addressing climate impacts by

FIGURE 2: Interrelationships between the agriculture, water, and forestry sectors



strengthening cross-sectoral coordination, investing in circular-economy and nature-based solutions, and empowering local communities with inclusive institutions will be key to sustaining rural livelihoods and ecological stability.

IV. Construction and Tourism

Construction and tourism are among the fastest-growing sectors in Himachal Pradesh's economy. In 2023–2024, construction accounted for 11.5% of employment, while tourism contributed 7.8% to the GSDP and supported over 14% of total jobs. The year 2024 saw a 13% increase in the number of tourist arrivals compared to 2023.¹⁶ Importantly, both sectors generate livelihoods for women, migrants, and informal workers. However, they have a complex

relationship with climate change — they are highly susceptible to and sometimes exacerbate climate risks, and contribute to climate change through emissions.

Tourism faces growing risks from declining snowfall and extreme weather events, which reduce visitor inflows and threaten hospitality-dependent livelihoods.¹⁷ Unregulated tourism infrastructure contributes to pollution, waste accumulation, and deforestation. Construction, meanwhile, is increasingly exposed to climate hazards, which cause project delays, cost overruns, and safety risks for workers.¹⁸ The sector is also highly polluting and emissions-intensive. In the 2025 monsoon season, the cumulative loss of public and private property has cost the state over ₹4,800 crore.¹⁹ Environmental degradation is compounded by hydropower expansion, sub-optimally managed construction waste, and inadequate urban planning. Together, these factors

accelerate glacial melt, disrupt water cycles, and threaten fragile mountain ecosystems.

Existing policy frameworks such as the Eco-Tourism Policy, in addition to regulations like the building bye-laws, Town and Country Planning (TCP) regulations and disaster preparedness plans are aimed at addressing important vulnerabilities.²⁰ However, their success is dependent on effective enforcement and deep sectoral integration. Promising pathways include mandating climate-resilient building codes, enforcing carrying capacity limits in tourist destinations, promoting renewable energy in tourism hubs, and incentivising the use of eco-friendly construction materials. Safeguarding the livelihoods of informal workers, encouraging community participation, and strengthening waste management regulation are equally critical. By aligning construction and tourism growth with ecological limits, Himachal Pradesh can secure sustainable economic benefits without compromising its environmental foundations.

V. Health

Climate change is reshaping Himachal Pradesh's health landscape. It is driving new patterns of vector-borne and waterborne diseases, including dengue, diarrhoea, and typhoid. Forest fires, water insecurity, and wildlife displacement add further risks, including zoonotic diseases. Vulnerable populations — women, children, tribal communities, elderly citizens, and informal workers — face disproportionate exposure. The state's large population of children under the age of 5 (5.5 lakh) and older adults (10 lakh) are particularly susceptible to climate-sensitive diseases.²¹

Health infrastructure is weakest in remote districts like Lahaul-Spiti and Kinnaur, where limited facilities, erratic electricity supply, and poor connectivity hinder access to care.²² Moreover, only a third of households in the state have health insurance, leaving many exposed to financial shocks.²³ The health sector itself also contributes to climate change, with over 2,800 facilities generating significant emissions and more than four tonnes of biomedical waste daily, much of which needs more effective management.

The state has responded through the State Action Plan on Climate Change and Human Health (SAPCCHH), emphasising disease surveillance,

early warning systems, and the adoption of green infrastructure in health centres. Initiatives include solarisation, improved waste management, and community engagement. Yet funding gaps, weak district-level integration, and insufficient biomedical waste facilities constrain progress. The SAPCCHH 2022-27 notes that improper segregation at 172 CHCs leads to the burning of plastic waste, releasing dioxins and furans into the air and contributing to air pollution and climate warming.²⁴

Strengthening health infrastructure resilience, scaling renewable energy adoption, improving surveillance systems, integrating climate-health planning across sectors, and enhancing waste management are crucial. Establishing a State One Health Commission could coordinate responses to interlinked human, animal, and environmental health challenges. By embedding climate resilience into health planning, Himachal Pradesh can safeguard development gains and protect vulnerable populations.

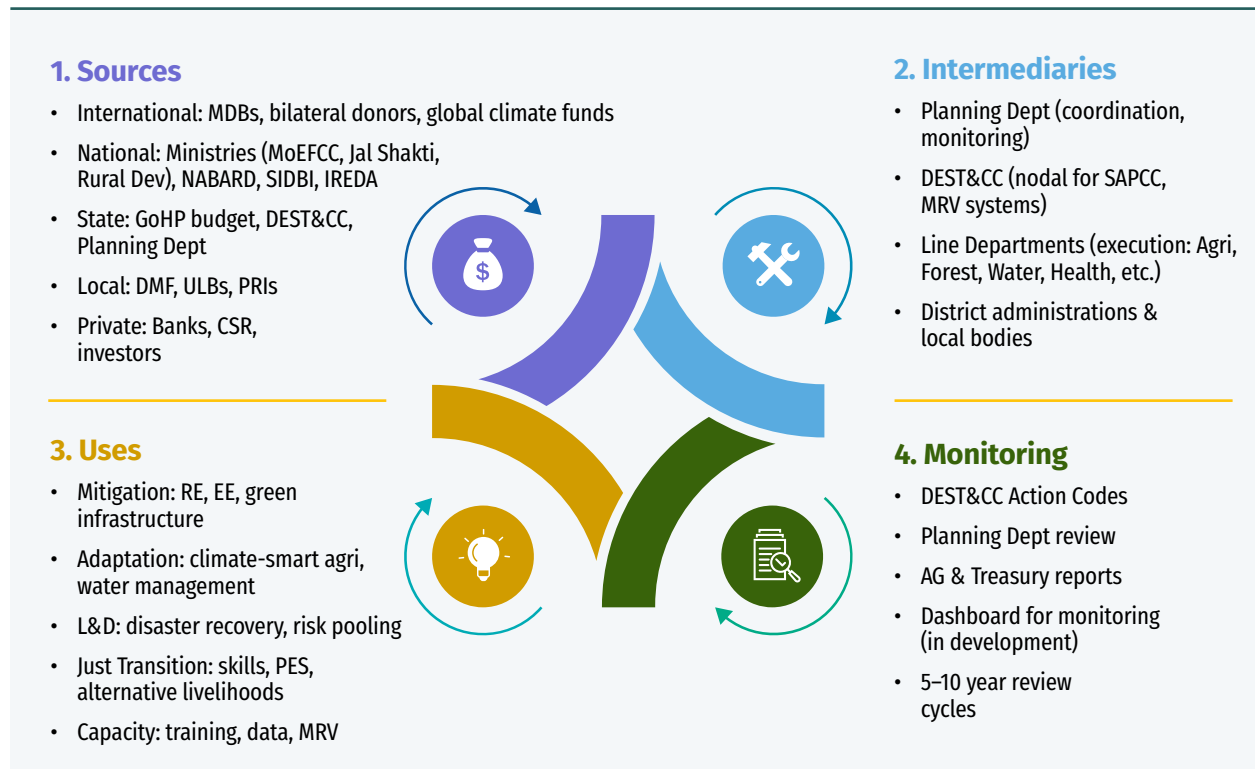
VI. Climate Finance

Financing climate action remains one of Himachal Pradesh's greatest challenges. The state currently draws from a mix of sources: its own budget, central devolutions, Centrally Sponsored Schemes, national financial institutions such as National Bank for Agriculture and Rural Development (NABARD), multilateral and bilateral aid, private sector investments, and Corporate Social Responsibility (CSR) contributions (Figure 3). However, existing flows are insufficient to meet rising adaptation, mitigation, and loss and damage needs.²⁵

Emerging priorities include financing just transitions for workers in high-emitting sectors, building resilience to disasters, and scaling nature-based solutions. Yet accessing and deploying climate finance is hampered by limited institutional capacity, fragmented coordination, and bureaucratic complexity. Misalignments between donor priorities and local needs further constrain effectiveness.

The report calls for expanded roles for the Department of Environment, Science and Technology, and Climate Change (DEST&CC), and a stronger coordination role for the Executive Council, supported by a dedicated State Climate Finance Cell. Climate budget tagging, improved risk disclosure, and project pipelines for bankable proposals can attract international finance.

FIGURE 3: Climate finance architecture in Himachal Pradesh



Instruments such as green bonds, resilience bonds, carbon credits, and fintech solutions can be complemented by dedicated disaster funds capitalised through fiscal instruments such as pollution levies and/or luxury taxes.

At the same time, phasing out subsidies for polluting sectors and embedding climate priorities in state budgeting is essential for aligning financial flows with low-carbon, climate-resilient development. By strengthening institutional frameworks and mobilising diverse financing instruments, Himachal Pradesh can secure the resources necessary to protect developmental gains in a warming world.

VII. Governance

Himachal Pradesh's governance architecture offers both opportunities and challenges for climate action. With its deeply decentralised system, the state has empowered Panchayati Raj Institutions, Urban Local Bodies, and Gram Sabhas to integrate climate concerns into local development planning through instruments like Gram Panchayat Development Plans and Eco-Village initiatives.

Accountability mechanisms such as Geographic Information System (GIS) dashboards, Gram Sabha

oversight, and social audits under Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) reinforce transparency.²⁶ Inclusion efforts include expanding women's leadership, recognising tribal institutions under the Forest Rights Act, and involving Self-Help Groups in adaptation strategies. Increasing use of data-driven planning, including vulnerability mapping and the use of GIS tools, further strengthens local responses.

Persistent challenges remain with an urgent need to enhance digital inclusion, address entrenched inequalities, promote greater inter-departmental coordination, and strengthen local data systems. The introduction of an enabling climate law and associated knowledge institutions and coordination mechanisms could bring the institutional coherence necessary to drive transformative climate action. Strengthening legal frameworks, institutionalising climate risk assessments, and integrating climate considerations into all planning and budgeting processes are urgent priorities to strengthen climate governance (Figure 4).

Himachal Pradesh's decentralised and participatory governance provides a strong foundation for building resilience. However, scaling up requires legal, institutional, and financial reforms to match the magnitude of climate risks.

FIGURE 4: Pillars for strengthening climate governance in Himachal Pradesh



VIII. Way Forward

Drawing from sectoral analyses and the conclusion of the report, four broad priorities emerge.

First, de-risking climate-sensitive sectors and aligning growth with climate risks must be a top policy priority. Himachal Pradesh's rapid progress has capitalised on its diverse geography, rich biodiversity, and vibrant local communities for broad-based development. However, the state's economy and livelihoods depend heavily on climate-sensitive sectors like agriculture, horticulture, tourism, and construction that face rising climate risks. Investments in insurance and financial innovation will sustain growth momentum while protecting vulnerable livelihoods. In the long run, identifying co-benefits between climate and development priorities can enable the formulation of low-carbon development pathways.

Second, stronger institutional coordination is needed to ensure climate considerations are integrated across sectors. This includes building governance platforms that foster both vertical and horizontal collaboration. For example, efforts include linking agriculture, water, and forestry policies, and creating mechanisms to access and

channel climate finance to local needs such as resilient seeds, water harvesting, and solarised health facilities.

Third, inclusive and participatory planning must place people at the centre of transformation. Himachal's tradition of community-led natural resource management can be the key for communities to unlock climate action today. Such initiatives, currently present in pockets of the state, can be scaled up to empower climate vulnerable groups, such as forest-dependent and indigenous communities. This approach enables the dual objectives of safeguarding livelihoods and formulating effective climate policy action that are embraced by communities. Ensuring social safety nets, responsive disaster plans, and equitable tourism management will be critical to protecting climate-vulnerable groups.

Fourth, data, foresight, and technology will play a decisive role in accelerating progress. Early warning systems for floods, cloudbursts, and landslides, surveillance of climate-linked health risks, and visitor flow monitoring in tourism can help anticipate risks and prevent ecological stress. Digital tools, emissions monitoring, and renewable energy integration can further advance low-carbon development while strengthening resilience.





Human Development Indices

This Human Development Report presents a district-wise the Human Development Index for the State in line with the globally recognised HDR methodology. The human development approach for advancing human wellbeing was first introduced in the 1990 HDR, published by the UNDP. The first HDR introduced the Human Development Index (HDI) as a measure of achievement in the basic dimensions of human development - longevity, education and income - across countries. These dimensions are combined to form the composite HDI, or simply called the HDI.

In line with the global human development framework and methodology, and adapted to sub-national data availability, the HDI for Himachal Pradesh has been estimated at both the state and district levels using the indicators in Figure 5.

Taken together, these priorities show that Himachal Pradesh can protect its developmental gains and become a frontrunner in climate action in the country if it pursues a coordinated, inclusive, and data-driven climate-sensitive development pathway.

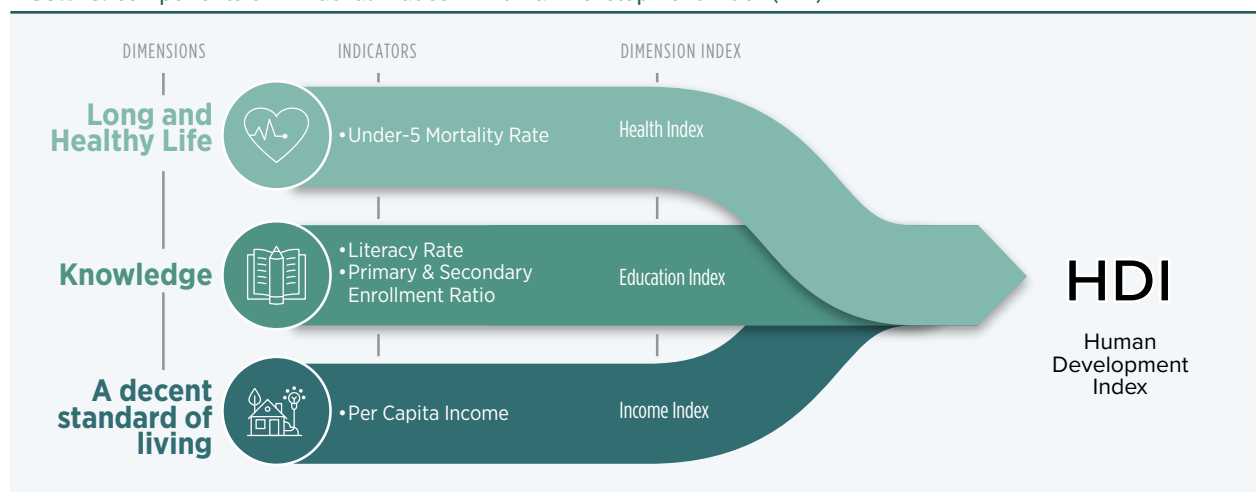
Despite its acute vulnerabilities, Himachal Pradesh is poised to lead India's climate-sensitive development. Its forests, which form 2.5% of India's carbon sink, and rivers that sustain 200 million people downstream, give the state national and global significance. By embedding sustainability and resilience into its growth model, Himachal can safeguard livelihoods, ecosystems, and infrastructure while setting an example for other mountain states

Table 1 presents indicator-wise data for calculating HDI and Table 2 presents district-level Human Development Index (HDI) values^{27, 28, 29}.

The HDR also computes the Climate-Adjusted HDI to illustrate the impact of climate hazards on human development in the state. This is calculated by discounting the human development index of a district by the district's Hazard Index that quantifies its exposure to climate-related hazards.

$$\text{Climate-Adjusted HDI} = \text{HDI} * (1 - \text{Hazard Index})$$

FIGURE 5: Components of Himachal Pradesh – Human Development Index (HDI)



Districts with a high risk of hazards are ranked lower in terms of overall climate-adjusted development, regardless of their original HDI score. The Climate-adjusted HDI discounts a region's human

development progress with its climate vulnerability, providing a more cautious measure of long-term development (Table 3).

TABLE 1: Indicator-wise Data for Calculating HDI

Districts	Data				
	Under-5 Mortality Rate (per thousand)	Literacy rate	Net Enrolment Rate		Per capita income (INR)
			Primary	Secondary	
Source	National Health Systems Resource Centre NHRSC	Census	UDISE +		Department of Economics & Statistics, Government of Himachal Pradesh
Year	2011	2011	2023-24	2023-24	2022-23
Bilaspur	66	84.6%	99.60%	95.04%	158,356
Chamba	61	72.2%	99.70%	96.89%	146,183
Hamirpur	61	88.2%	99.50%	95.15%	138,323
Kangra	78	85.7%	99.60%	95.03%	118,649
Kinnaur	63	80.0%	99.80%	95.16%	268,904
Kullu	61	79.4%	99.60%	95.07%	175,629
Lahaul & Spiti	56	76.8%	99.50%	91.91%	318,523
Mandi	50	81.5%	99.30%	94.03%	139,057
Shimla	59	83.6%	99.80%	92.52%	233,364
Sirmaur	79	78.8%	99.70%	93.92%	269,529
Solan	61	83.7%	99.80%	87.59%	787,775
Una	81	86.5%	99.30%	93.18%	162,916
Himachal Pradesh	68	82.8%	99.60%	93.72%	218,787

TABLE 2 Himachal Pradesh Human Development Index (HDI) values

Districts	Health Index	Education Index	Income Index	HDI value	Rank
Solan	0.769	0.887	1.000	0.880	1
Lahaul-Spiti	0.804	0.863	0.851	0.839	2
Kinnaur	0.755	0.887	0.801	0.813	3
Shimla	0.783	0.899	0.760	0.812	4
Kullu	0.769	0.884	0.678	0.772	5
Mandi	0.846	0.891	0.610	0.772	6
Sirmaur	0.643	0.878	0.802	0.768	7
Hamirpur	0.769	0.927	0.609	0.757	8
Bilaspur	0.734	0.91	0.648	0.756	9
Chamba	0.769	0.852	0.625	0.743	10
Una	0.629	0.914	0.656	0.723	11
Kangra	0.65	0.915	0.564	0.695	12
Himachal Pradesh	0.72	0.897	0.742	0.783	



TABLE 3: Himachal Pradesh Climate-Adjusted HDI Values

Districts	Hazard Index value	HDI value	Climate-Adjusted HDI value	Climate-Adjusted HDI Rank
Kinnaur	0.179	0.813	0.667	1
Lahaul-Spiti	0.222	0.839	0.653	2
Chamba	0.184	0.743	0.606	3
Kangra	0.404	0.695	0.414	4
Sirmaur	0.583	0.768	0.32	5
Mandi	0.639	0.772	0.279	6
Kullu	0.723	0.772	0.214	7
Shimla	0.801	0.812	0.162	8
Hamirpur	0.813	0.757	0.142	9
Una	0.811	0.723	0.137	10
Solan	0.868	0.88	0.116	11
Bilaspur	0.913	0.756	0.066	12

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