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“KERALA VS HIMACHAL PRADESH: A COMPARATIVE STUDY ON SUSTAINABLE DEVELOPMENT THROUGH THE SDG INDIA INDEX”

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Abstract:

This study entitled “Kerala VS Himachal Pradesh: A comparative study on sustainable development through the SDG India Index”, examines the sustainable development progress of two socially advanced yet geographically distinct Indian states. Through a review of literature on state-level SDG performance, the study highlights regional variations arising from differences in geography, governance models, social development and economic structures. The research addresses key questions: How do Kerala and Himachal Pradesh compare across major Sustainable Development Goals {SDGs}? Which areas demand state-specific policy interventions?

The hypotheses propose that while both states demonstrate strong social development outcomes, their strengths and limitations are shaped by unique historical, environmental, and economic contexts. Using a comparative research design and recent SDG India Index data across all 17 SDGs, the study evaluates performance indicators related to health, poverty alleviation, education, gender equality and climate action, etc... The finding reveals that Kerala excels in human development indicators such as health, education, and gender equality, whereas Himachal Pradesh shows strong performance in environmental sustainability, clean energy adoption, and climate resilience. Despite high overall SDG scores, both states face challenges such as ageing population, fiscal sustainability and climate vulnerability.

This research contributes to the broader discourse on sub-national sustainability and offers insights for policy makers as India progresses toward achieving the 2030 Sustainable Development Agenda.

Keywords: Kerala, Himachal Pradesh, Sustainable Development Goals {SDGs}, Human development, Environmental sustainability, State – level comparison, SDG India Index.

Introduction:

This study undertakes a comparative analysis of sustainable development progress in Kerala and Himachal Pradesh using the Sustainable Development Goals {SDGs} India Index as a key evaluative framework. Both states are often regarded as models of social and environmental

development in India, yet they differ significantly in terms of geography, governance models and economic structures. Kerala is widely recognized for its achievements in human development, particularly in health, education and social welfare, while Himachal Pradesh has shown notable progress in environmental sustainability, clean energy adoption and climate resilience.

By examining recent SDG India Index data, the research evaluates state-wise performance across major SDG indicators such as poverty reduction, health, quality education, public health, clean energy, economic growth, and climate action. The comparative approach helps to identify strengths, gaps and policy challenges unique to each state. The study aims to highlight the importance of region – specific development strategies and contribute to the discourse on state- level sustainability, reinforcing the need for tailored policy interventions as India advances toward achieving the 2030 Agenda for Sustainable Development.

Aim of the Study:

The primary aim of this research is to evaluate and compare the performance of Kerala and Himachal Pradesh across key SDG indicators, identifying areas of strength and areas requiring improvement. The study seeks to provide actionable insights for policy makers to design and implement sustainable development initiatives tailored to the unique economic, social, and environmental contexts of both states.

Review of the Literature:

The SDG India Index {NITI AAYOG, 2023} highlights state – wise progress on the sustainable development goals, with Himachal Pradesh and Kerala following distinct development pathways shaped by their socio – economic and geographical contexts. Kerala places strong emphasis on human development, social welfare and inclusive growth through sustained investments in health and education, whereas Himachal Pradesh focuses on balanced development driven by agriculture, tourism and hydropower – based growth.

Data from the National Crime Records Bureau {NCRB, 2022} under SDG 16 {Peace, Justice and strong institutions} indicates higher reported crime rates in Kerala than in Himachal Pradesh, highlighting governance and urbanization – related challenges.

The Periodic Labour Force Survey {PLFS 2022} provides insights into employment trends under SDG 8, showing higher unemployment in Kerala, particularly among educated youth, compared to relatively lower unemployment in Himachal Pradesh due to better workforce absorption in agriculture and tourism.

Research Methodology:

This comparative analysis draws on the latest SDG India Index scores as quantitative data to assess the states progress on each of the 17 SDGs. The study focuses on key development indicators for Kerala and Himachal Pradesh, such as poverty reduction, education, clean water, affordable and

clean energy, economic growth and climate action. By using statistical analysis and graphical comparisons the paper highlights differences in performance between the two states supplemented by a qualitative review of state policies influencing these outcomes. To provide a quantitative comparison of Kerala and Himachal Pradesh performance on the 17 sustainable Development Goals {SDGs}, let's focus on the data from credible government sources like the NITI AAYOG, RBI report, NFHS {National Family Health Survey} These indicators give a data – driven view of each states progress on key SDGs.

Key SDGs and Qualitative Analysis with Overview:

To assess trends over time, this research analyses Kerala's and Himachal Pradesh's SDG performance across multiple years, comparing their scores for selected goals.

❖ SDG 1: No Poverty

Both Kerala and Himachal Pradesh have made notable progress in reducing poverty. Kerala's strong social welfare programs, Public Distribution System {PDS} and Kudumbashree Mission have helped lower poverty, while Himachal Pradesh has focused on rural livelihood schemes and employment programs. Kerala faces urban poverty pressures due to high living costs in cities, whereas Himachal Pradesh contends with access challenges in remote mountainous areas.

❖ SDG 2: Zero Hunger

Kerala performs well in child nutrition and food security, with lower rates of underweight children due to ICDS and state nutrition initiatives. Himachal Pradesh has improved malnutrition in rural and tribal areas, but some regions still face challenges like stunting and underweight children. Both states require targeted, integrated interventions for equitable improvements.

❖ SDG 3: Good Health and well – being

Kerala leads in health indicators with low infant and maternal mortality rates and strong healthcare infrastructure. Himachal Pradesh shows steady progress, but difficult terrain limits access to healthcare in rural regions.

❖ SDG 4: Quality Education

Kerala consistently demonstrates higher literacy, school retention, and gender parity supported by investments in educational infrastructure and teacher training. Himachal Pradesh has improved school enrolment, but higher education and skill development lag slightly behind Kerala

❖ SDG 5: Gender Equality

Kerala shows strong female literacy and health outcomes but moderate female workforce participation. Himachal Pradesh performs well in women's participation in local governance and education but faces limited employment opportunities. Both states need inclusive policies to address urban – rural gender gaps and expand women's access to economic opportunities.

❖ SDG 6: Clean Water and Sanitation

Both states have high access to safe drinking water and sanitation. Kerala emphasizes decentralized water management and sanitation programs, while Himachal Pradesh focuses on rural water supply project and hydropower-linked initiatives.

❖ **SDG 7: Affordable and Clean Energy**

Kerala has increased renewable energy share through solar and small hydro projects, while Himachal Pradesh leads in hydropower generation. Both states are actively pursuing clean energy transitions

❖ **SDG 8: Decent work & Economic Growth**

Kerala's service – oriented economy shows moderate employment growth but faces urban unemployment challenges. Himachal Pradesh achieves strong employment growth through agriculture, tourism and small – scale industries.

❖ **SDG 9: Industry, Innovation & Infrastructure**

Kerala demonstrates steady growth in MSMEs and technology – based initiatives. Himachal Pradesh promotes industrial development through small industrial hubs and technology – driven industries.

❖ **SDG 10: Reduced Inequalities**

Kerala has moderate income inequality and implements inclusive social programs. Himachal Pradesh maintains low inequality overall but faces challenges in providing resources to remote communities.

❖ **SDG 11: Sustainable Cities & Communities**

Kerala leads in urban planning and smart city initiatives. Himachal Pradesh's smaller towns and hill settlements require more focused urban planning. Both states have made progress in waste management and basic infrastructure development.

❖ **SDG 12: Responsible Consumption & Production**

Kerala has improved waste management through citizen participation and state programs, while Himachal Pradesh emphasizes industrial waste treatment and community awareness. Both states aim to reduce plastic and industrial waste effectively.

❖ **SDG 13: Climate Action**

Kerala shows steady progress in climate resilience, including flood management and coastal protection programs. Himachal Pradesh emphasizes mountain ecosystem conservation and renewable energy investments, showing strong upward trends in climate action.

❖ **SDG 14: Life Below Water**

Kerala implements coastal conservation and marine biodiversity protection programs. Himachal Pradesh, being landlocked, has no direct marine conservation initiatives.

❖ **SDG 15: Life on Land**

Kerala focuses on forest conservation in the Western Ghats and biodiversity protection. Himachal Pradesh excels in forest coverage and the Himalayan ecosystem conservation. Both states highlight the need for adaptive environmental management.

❖ SDG 16: Peace, Justice & Strong Institutions

Kerala maintains strong governance and citizen services, although urban crime rates create local challenges. Himachal Pradesh benefits from stable law and order, transparency, and e-governance initiatives. Both demonstrate strong governance frameworks.

❖ SDG 17: Partnerships for the Goals:

Both states engage effectively with central government schemes, public – private partnerships and international collaborations. Kerala attracts foreign investment through urban hubs, while Himachal Pradesh leverages investment summits and development partnerships to boost social and economic growth.

Category	Index Score Range	Kerala	Himachal Pradesh
Achiever	100	-	-
Front Runner	65-99	YES	YES
Performer	50-64	NO	NO
Aspirant	<50	NO	NO

According to recent trends, Kerala and Himachal Pradesh are among the Indian states recognized as the “Front Runners”.

Comparative Progress Table for Kerala and Himachal Pradesh Based on the SDG India Index 2023-24

SDG GOAL	Indicator	Kerala	Initiatives	Himachal Pradesh	Initiatives
SDG 1: No Poverty	Poverty Rate	0.7%	Public Distribution System {PDS}, Kudumbashree Mission	0.6%	Mukhya Mantri Swavalamban Yojana, Rural Employment & Livelihood Schemes
	Rural – Urban disparity in Poverty	Moderate		Low	
SDG 2: Zero Hunger	Underweight Children under 5	19.7%	ICDS, Mid – day meal scheme	21.2%	ICDS, Poshan Abhiyan, Annapurna Scheme
	Starting in Children under 5	23.4%		30.8%	
SDG 3: Good Health	Infant Mortality Rate per 1,000	6	Aardram Mission, Universal Health Coverage, Strong Public Health System	19	National Health Mission {NHM}, Strengthening of Primary Health Centres

	Maternal Mortality Ratio Per {100,000}	19	Free Maternal Care Services, Institutional delivery programs	67	Janani Suraksha Yojana, e-Mamta / Digital Health Tracking
SDG 4: Quality Education	Literacy Rate	94.0%	General Education Reforms, Public school strengthening	86.6%	Samagra Shiksha Abhiyan, Gunotsav Programme
	Gender Rarity Index Higher Education	1.1%		1.0%	Beti Bachao Beti Padhao Girl's Scholarship schemes
SDG 5: Gender Equality	Female labour force participation	19.84%	Kudumbashree Mission, State skill development programmes	32.0% - 35.0%	Beti Bachao Beti Padhao, Self – Help Groups
	Sex ratio females per 1,000 males	1084		972	
SDG 6: Clean water & Sanitation	Access to Safe Drinking Water	98%	Jal Jeevan Mission, State Water Authority Programs	95%	Jal Jeevan Mission, Rural water supply schemes
	Households with Toilet Facility	99%		92%	
SDG 7: Clean Energy	Electricity Coverage	99%	Kerala State Solar Mission, ANERT	100%	State Hydropower Policy, HIMURJA
	Renewable Energy Production {MW}	5,500MW		10,700 MW	
SDG 8: Economic Growth	Unemployment Rate	8.5 % - 9.0%	Kerala Academy for Skills Excellence, Employment Exchange Modernisation	3.9% - 4.1 %	Kaushal Vikas Yojana, Tourism Employment programs
SDG 9: Industry & Infrastructure	Per Capita {GSDP}	2,00,000 Rs	Make in Kerala, MSME Support	2,10,000 Rs	Rural industrial development, Small & Medium enterprises
	Industrial Growth Rate	6%		5%	
	Road Length per 1000 sq.km	1200 Km		900 Km	
SDG 10: Reduced Inequality	Gini coefficient	0.32	Kudumbashree mission, Tribal Sub – Plan, MAVIM	0.30	Vanbandhu Kalyan Yojana

SDG 11: Sustainable cities	Urbanization Rate	47.7%	AMRUT Program, Smart Cities Mission	10.0%	RURBAN Mission, Smart city projects
	Waste collection coverage in Urban Areas	90%	Swachh Bharat Abhiyan, Solid waste management programs	85%	Urban waste management initiatives, Community – based sanitation projects
SDG 12: Consumption & Production	Plastic waste {per capita}	9 kg	Plastic Ban Enforcement, EPR	8 kg	Plastic Waste management
	Industrial waste treatment facilities	High		High	
SDG 13: Climate Action	Carbon Emissions {CO2 per capita}	1.5 tonnes	Green Kerala Mission, Kerala Climate Change Action Plan	1.8 tonnes	SAPCC, Mountain Ecosystem Conservation Programs
	Renewable Energy Share	20%		28%	
SDG 14: Life Below Water	Marines protected areas sq.km	150 sq.km	Mangrove cell, Coastal Zone management	NA	
SDG 15: Life on Land	Forest Area Coverage	30%	Western ghats biodiversity conservation	35%	Himalayan biodiversity conservation
	Biodiversity Hotspots	Western Ghats		Himalayas	
SDG 16: Peace & Justice	Crime Rate {per 100,000 people}	230	Lok Shahi Din Programs, State policy reforms	180	Jan Dhan Yojana, E-governance initiatives
	Governance Index	High		High	
SDG 17: Partnerships	FDI Inflow {USD Billion}	\$4.5 billion	CSR, PPP	\$1.2 billion	PPP, global investment summits
	International Partnerships	Strong		Strong	

From official reports and websites of government of India

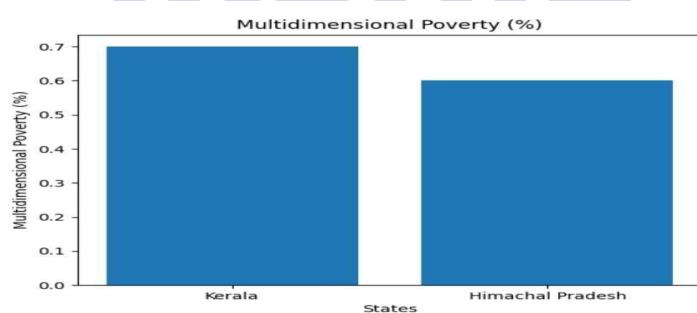


Figure 2: Multidimensional Poverty (%) (Source: NITI Aayog, MPI 2023)

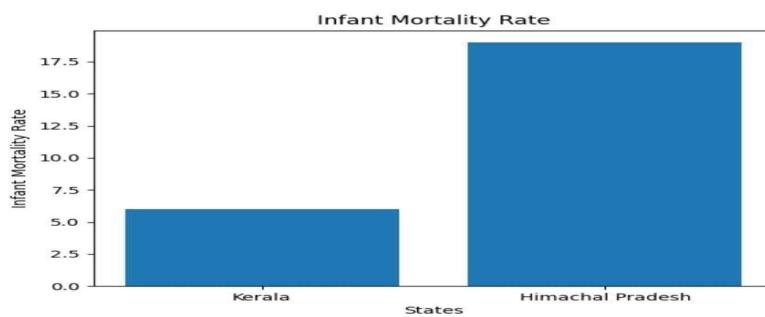


Figure 3: Infant Mortality Rate (Source: SRS 2021)

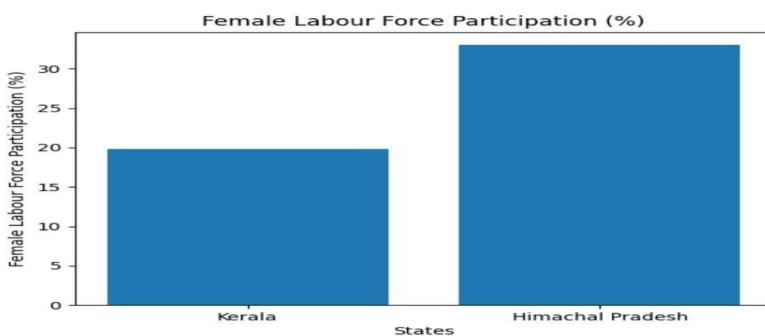


Figure 4: Female LFPR (%) (Source: PLFS 2022-23)

Comparative Graphs: Kerala vs Himachal Pradesh (SDGs)

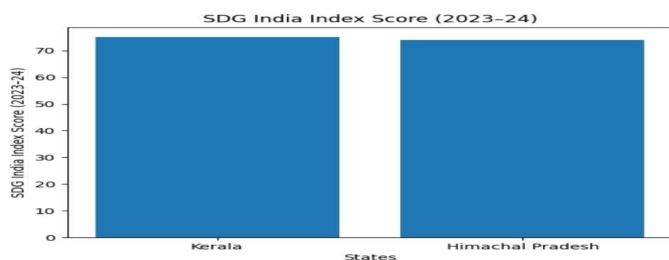


Figure 1: SDG India Index Score (Source: NITI Aayog, 2023-24)

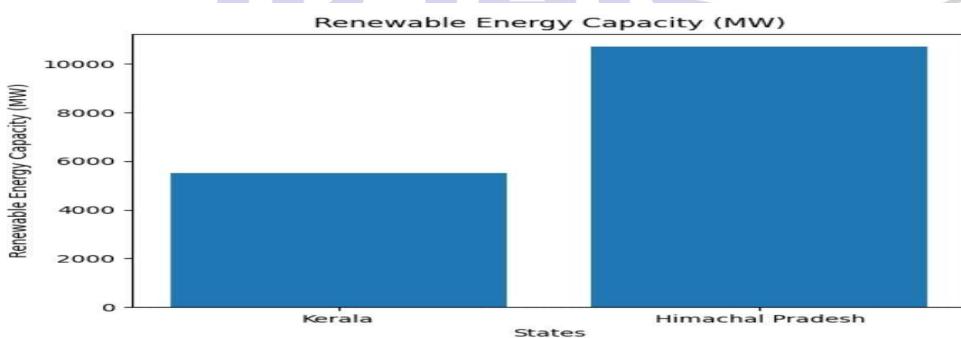


Figure 5: Renewable Energy Capacity (Source: Ministry of Power, 2023)

Key Observations:

1. Strengths

- Kerala has a high literacy rate, well – developed public health care system, effective social welfare and many more.
- Himachal Pradesh has high sanitation and clean drinking water, strong performance in hydropower, good forest cover.

2. Areas for improvement

- Kerala has limited industrial growth, high dependence on the service sector, and environmental stress.
- Himachal Pradesh has limited access to education and healthcare and infrastructure challenges.

3. Common Achievements

- High access to electricity and basic public services
- Strong governance and focus on human development
- Significant progress in sanitation and drinking water access

Conclusion:

Kerala excels in human development, health and education, while Himachal Pradesh demonstrates strength in environmental sustainability and clean energy. Their contrasting development highlights the importance of region – specific strategies for achieving the SDGs by 2030

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