MANUFACTURING THE ECONOMIC POWERHOUSE

ABSTRACT

The mountainous State of Uttarakhand is emerging as a significant hub for manufacturing, leveraging its unique strengths and strategic investments. The manufacturing sector plays a vital role in the State's economy, contributing substantially to its Gross State Value Added (GSVA) across diverse industries like pharmaceuticals, textiles, and food processing. Over the past decade, this sector has grown due to government incentives, industrial zones, and focused initiatives, despite challenges like geographical constraints. Uttarakhand's manufacturing industry continues to evolve, prioritizing productivity, innovation, and expansion to shape the State's economic future.

This chapter, brings out the facts and figures on how Uttarakhand has implemented comprehensive measures to boost its manufacturing sector, focusing on attracting investments, increasing industrial output, and creating jobs. Key initiatives include policy reforms such as the Single Window Clearance System and the 2021 Mega Industrial Policy along with many others that streamline processes and offer incentives. Infrastructure development has been prioritized through the establishment of Integrated Industrial Estates and enhanced transport connectivity. Financial incentives include subsidies, tax benefits, and special support for MSMEs. Skill development programmes and modernized ITIs ensure a skilled workforce, while green manufacturing practices and renewable energy adoption are promoted. Focus sectors include pharmaceuticals, biotechnology, automobile manufacturing, and food processing, supported by efforts to improve ease of doing business and investor facilitation. These initiatives aim to create a conducive environment for industrial growth and economic development in Uttarakhand.

Further, the chapter details how Uttarakhand's manufacturing sector aligns with the State's vision to double its GDP by 2030 through sustainable development and job creation. The sector, contributing significantly to the State's economy, is concentrated in a few industrial hubs, with high-potential industries like AYUSH and electronics gaining momentum. The "Sashakt Uttarakhand" framework outlines 150 initiatives to achieve this vision, focusing on investible projects, sectoral initiatives, and policy reforms. Key efforts include promoting green manufacturing, enhancing logistics, fostering startups, and building capacity for improved ease of doing business. These initiatives aim to attract investments, boost industrial growth, and create employment, positioning Uttarakhand as a preferred destination for investments in manufacturing.

The chapter concludes with the observation that the industrial sector in Uttarakhand has grown significantly and created considerable employment. This could be made possible through implementation and augmentation of appropriate industrial policies at various time points. The regional approach in identifying industries for their promotion in hills and plain regions, and creation of an encouraging and conducive environment by the State paid off. In the end, chapter lists some of the identified challenges that are hindering its growth trajectory and adoption of the recommendations may results in exponential growth of the sector and hence the State Economy.

Introduction

The mountainous State of Uttarakhand is not only known for its breathtaking scenery but also for its growing manufacturing sector. As of 2024, this industry is undergoing a strategic transformation, capitalizing on the State's unique strengths and fostering a welcoming environment for businesses. This chapter explores the key drivers shaping Uttarakhand's manufacturing landscape, highlighting the government's focus on priority sectors, promotion of regional development, and initiatives aimed at attracting investment and streamlining operations.

The manufacturing sector in Uttarakhand plays a pivotal role in the State's economic landscape, contributing significantly to its Gross State Value Added (GSVA). As a key component of the secondary sector, manufacturing in Uttarakhand encompasses a diverse range of industries, including pharmaceuticals, textiles, food processing, and machinery. Over the past decade, the sector has experienced notable growth, driven by strategic investments, government incentives, and the establishment of industrial zones. Despite facing challenges such as geographical constraints and competition from neighbouring States, Uttarakhand's manufacturing sector is evolving, with a focus on enhancing productivity, fostering innovation, and expanding its industrial base. This economic survey aims to provide a comprehensive overview of the manufacturing sector's performance, trends, and prospects, highlighting its role in shaping the State's economic development and growth trajectory.

Table 4.1: Provisional Estimates of GSDP by Economic Activity (₹ crores)

S. No.	Industry	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22 RE	2022-23 PE	2023-24AE
1	Manufacturing	43651	50829	54404	58743	63697	70318	75978	77870	77440	67216	81648	90270	104540
2	GDP	115328	131613	149074	161439	17716:	195125	220222	230327	239263	225846	268499	303693	346206

Source: Directorate of Economics and Statistics, Department of Planning, Government of Uttarakhand

Figure 4.1: Provisional Estimates of GSDP by Manufacturing
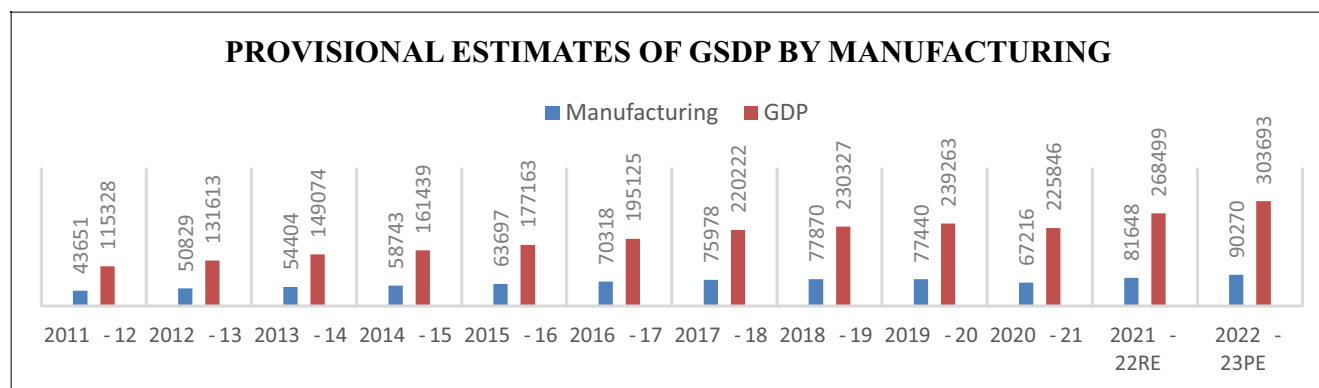

Source: Diagrammatic representation of Table 1

Figure 4.1 provides the provisional estimates of GSDP by the Manufacturing Sector exclusively. The manufacturing sector is a significant contributor to the overall GSDP, reflecting its critical role in the State's economic structure. It showed a consistent growth from ₹43,651 crores in 2011-12 to ₹77,870 crores in 2018-19. This indicates steady industrial expansion during these years marking these years as the steady Growth years for the sector. But following these years there was a minor decrease in contribution from ₹77,870 crores in 2018-19 to ₹77,440 crores in 2019-20, reflecting stagnation in the sector's growth. Whereas in 2020-21, the manufacturing sector's contribution dropped sharply to ₹67,216 crores. This likely reflects the economic disruption caused by the COVID-19 pandemic, which severely impacted manufacturing activities due to lockdowns, supply chain disruptions, and decreased demand. The sector rebounded strongly post-pandemic, with contributions rising to ₹81,648 crores in 2021-22, increasing to ₹90,270 crores in 2022-23 and further growing to ₹1,04,540 crores in 2023-24. This recovery suggests that the sector adapted to post-pandemic conditions, benefitting from increased demand, resumed operations, and possibly government support for industrial recovery. Although it experienced a decline in 2020-21, the industry's recovery indicates resilience and the sector's importance in driving economic growth, especially post-pandemic.

Table 4.2: Provisional Estimates Growth Rate of GSDP by Economic Activity (%)

(At Current Prices)

S. No.	Industry	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22RE	2022-23PE	2023-24 AE
1	Manufacturing	16.44	7.03	7.98	8.43	10.39	8.05	2.49	-0.55	-13.20	21.47	10.56	14.23
2	GDP	14.12	13.27	8.29	9.74	10.14	12.86	4.59	3.88	-5.61	18.89	13.11	13.96

Source: Directorate of Economics and Statistics, Department of Planning, Government of Uttarakhand

**Figure 4.2: Provisional Growth Rates of GSDP by Manufacturing Sector**
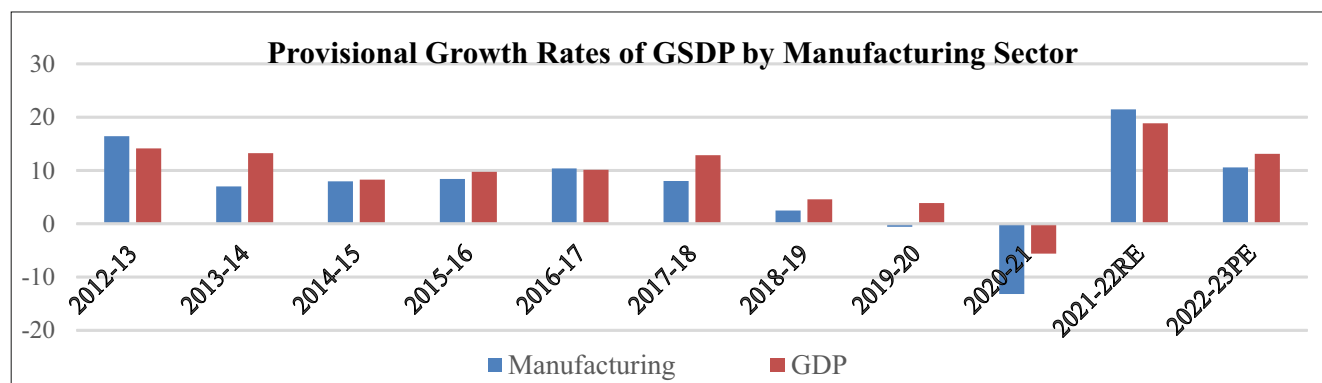
Source: Directorate of Economics and Statistics, Department of Planning, Government of Uttarakhand

Figure 4.2 clearly reflects that the Manufacturing sector plays a critical role in the State's economy, contributing significantly to the Gross State Domestic Product (GSDP) over the years. The growth rates provided in the table show how this sector has evolved, particularly in response to economic events, policy changes, and global factors. The sector shows variability in growth rates, with strong performance in certain years and slowdowns in others. This variability reflects the sector's sensitivity to both domestic policies and global economic conditions. Government initiatives such as "Make in India" and the implementation of GST have had both positive and negative effects on the manufacturing sector. While these reforms aimed to boost industrial production and make the sector more competitive, they also introduced transitional challenges, particularly for smaller manufacturers. The pandemic had a profound negative impact on the sector, as seen in the -13.2% growth in 2020-21. However, the sector demonstrated strong resilience with a significant rebound of 21.47% in 2021-22, driven by the recovery of both supply and demand. The rapid recovery post-2020 demonstrates the manufacturing sector's crucial role in economic revival. Government stimulus, as well as renewed consumer demand, played a major part in this recovery. Over the years, the sector has undergone structural changes with increasing automation, shifts towards high-tech industries, and more integration with global supply chains. These changes have positioned the sector for future growth, though it remains exposed to global economic shifts and trade policies

4.1 Measures Taken for Manufacturing Sector in the State

Uttarakhand has implemented several measures to boost its manufacturing sector, aiming to attract investments, enhance industrial output, and create employment opportunities. These measures encompass policy reforms, infrastructure development, financial incentives, and skill development programmes. Here's an overview
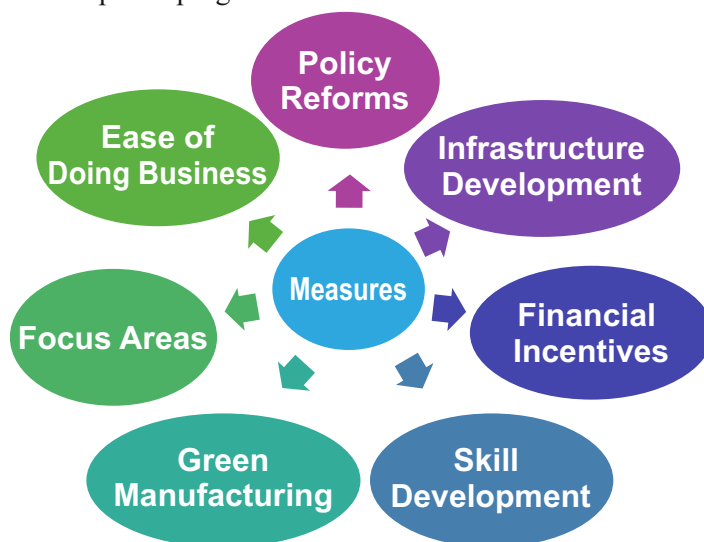
4.1.1 Policy Reforms:

1. **Single Window Clearance System**: To simplify the process of setting up new industries, Uttarakhand has established a Single Window Clearance System, reducing bureaucratic hurdles and expediting approvals and licenses.
2. **Industrial Policy**: The Uttarakhand Industrial Policy 2023 focuses on fostering a business-friendly environment. It emphasizes ease of doing business, providing various incentives and subsidies for new and existing enterprises.

4.1.2 Infrastructure Development:

1. **Integrated Industrial Estates (IIEs)**: The State has developed several Integrated Industrial Estates in locations like Haridwar, Pantnagar, and Sitarganj. These eStates are equipped with necessary infrastructure such as roads, electricity, water supply, and waste management systems.
2. **Transport Connectivity**: Efforts have been made to improve road and rail connectivity to major industrial hubs. This includes the development of expressways, highways, and logistic parks to facilitate smooth transportation of goods.

4.1.3 Financial Incentives:

1. **Subsidies and Tax Benefits**: The State offers capital subsidies, interest subsidies, and tax exemptions to encourage investment in the manufacturing sector. These incentives aim to reduce the initial investment burden on businesses.
2. **Special Packages for MSMEs**: Micro, Small, and Medium Enterprises (MSMEs) receive special attention through customized packages that include financial assistance, technology upgradation support, and market access facilitation.

4.1.4 Skill Development:

1. **Skill Development Programmes**: The State runs various skill development initiatives in collaboration with industrial bodies and educational institutions. These programmes aim to equip the local workforce with the necessary skills required by the manu-facturing industry.
2. **Industrial Training Institutes (ITIs)**: The establish-ment and modernization of ITIs across the State ensure a steady supply of skilled labour to the manufacturing sector.

4.1.5 Green Manufacturing:

1. **Sustainable Practices**: Uttarakhand promotes green manufacturing practices by encouraging industries to adopt eco-friendly technologies and processes. Incentives are provided for businesses that comply with environmental standards and reduce their carbon footprint.
2. **Renewable Energy**: The State supports the use of renewable energy sources in manufacturing units, offering subsidies for the installation of solar panels and other renewable energy systems.

4.1.6 Focus Areas:

1. **Pharmaceuticals and Biotechnology**: Uttarakhand has identified pharmaceuticals and biotechnology as key sectors for growth, providing specific incentives to attract companies in these fields.
2. **Automobile and Auto Components**: With the presence of major automobile manufacturers in the State, efforts are made to develop a robust supply chain and ecosystem for auto components.
3. **Food Processing**: Leveraging its agricultural base, Uttarakhand promotes food processing industries, providing support for setting up cold chains, processing units, and packaging facilities.

4.1.7 Ease of Doing Business:

1. **Regulatory Simplification**: The State govern-ment continuously works on reducing regulatory complexities and improving the ease of doing business ranking. This includes online portals for compliance and grievance redressal mechanisms.
2. **Investor Facilitation Cell**: A dedicated cell assists investors in navigating the regulatory environment and provides handholding support throughout the investment lifecycle.

The concerted efforts by the Uttarakhand government to enhance the manufacturing sector reflect a comprehensive approach involving policy reforms, infrastructure development, financial incentives, and skill development. These measures aim to create a conducive environment for industrial growth, attract investments, and generate employment, contributing to the overall economic development of the State.

4.1.8 Growth Centres:

Growth Centres are developed by GoUK on the lines of Cluster Development Programme (MSE-CDP) of the Ministry of Micro and Small Enterprises (MSMEs), GoI that seeks to link together common physical infrastructure

facilities for enterprises that are producing same /similar /complementary products and/or services to help them address their common challenges. The growth centres are being established in remote parts of Uttarakhand. 110 growth centres were listed in the State till 2024.

DES undertook a study recently of the growth centres and key findings are given below:
1. Several growth centres were facing lack of finance, marketing and entrepreneurial skills.
2. A large percentage of the growth centre managers/directors were lacking technical knowledge related to their activities.
3. Faced with lack of local produce, absence of processing equipment, financial constraints and dearth of adequate human resource, many growth centres have modified their economic activities.
4. A majority of growth centres are managed by large NGOs and function as their entities, resulting in stability of their functioning.
5. Certain growth centres whose managers possess managerial skills/experience and entrepreneurship traits are operating successfully while others growth centres although having access to local produce, processing and packaging tools and equipment, are unable to use them due to lack of required training and managerial capacity or entrepreneurship amongst their managerial teams.
6. Certain growth centres were functioning merely as sales outlets of products of larger entities due to inactive management personnel, their lack of technical and experience.
7. Overall, the growth centres while being capable of improving the economic well-being of their members require managerial and agreed economic activity related comprehensive training to enable them to become self-reliant and grow.

4.1.9 Start-Up Policy:

The policy aims to boost innovation and entrepreneurship in the State.

152 start-ups have been registered till 2024. DES recently conducted a study of the active start-ups in the State with 101 actively participating in the survey.

Key findings of the study are:
• 45% of start-ups are in the initial stages, and 18% are exploring new markets.
• 37% of start-ups cited favourable economic conditions as a supportive factor.
• 71% of start-up founders are male, and 24% are female, mostly under 30 years old.
• 18% of start-ups did not receive government support, and 24% faced financial issues.

• 75% of start-ups received support from family and friends, and 5% from private investors.
• 49% of start-ups have fewer than 5 employees, and 42% have 5-20 employees.

It is recommended that:
1. Task forces at the district level need to be established to support start-ups and providing timely financial assistance.
2. Seeing the lack or absence of start-up in the hilly districts of the State and in order to attract youth in the hilly districts of the State to the unlimited potential of start-up eco-system, there is a need to review and introduce thematic and comprehensive provisions in the start-up policy.

4.2. Alignment of Manufacturing Sector's Performance with the VISION of the State

The vision for the State has been set as below:

"Doubling the real GDP of the State by 2030 by harnessing untapped opportunities, while preserving the unique environmental heritage, fostering equitable development and creating job opportunities"

Uttarakhand's manufacturing sector, anchored by the State's natural resources such as abundant water and agricultural produce, plays a crucial role in its economy. In FY23, the sector contributed approximately ₹ 1 lakh crore to the Gross State Domestic Product (GSDP).
• Currently, the State's manufacturing revenue is primarily driven by industries like automotive, metals and minerals, paper, and consumer goods. Emerging sectors with significant potential, such as AYUSH and electricals/electronics, account for a smaller share.
• Industrial activity is concentrated in key hubs such as Haridwar, Rudrapur, Dehradun, Haldwani, Roorkee, and Pantnagar, leaving much of the hill regions largely untapped for manufacturing.

This indicates a significant growth opportunity in the sector, with the potential to attract industries in priority sectors where Uttarakhand has a unique competitive advantage. Growth is expected to be driven by utilizing existing underused land, unlocking new land parcels, and developing the necessary infrastructure to support further industrial expansion

"To make Uttarakhand a preferred destination for manufacturing investments in the country, across selected sectors where Uttarakhand has competitive strengths"

4.2.1 Initiatives under Sashakt Uttarakhand:

The concept of "Shasakt Uttarakhand" (Empowered Uttarakhand) envisions comprehensive development and empowerment of the State of Uttarakhand. Various interventions could be introduced to achieve holistic development, enhance governance, and improve the socio-economic conditions in the region. The Framework, Strategic Roadmap and Outreach Plan Report outlined ~150 implementable initiatives in the roadmap towards achievement of Vision 2030 and towards doubling State's GDP.

The presented implementable initiatives could be segmented into 5 broad heads:

A. High - Potential Investment Opportunities

B. Strategic Sector Initiatives

C. Policy Framework & Support

D. Institutional Strengthening & Skill Development

E. Investor Engagement & Promotion

4.2.1.A. High-Potential Investment Opportunities:

Investing in projects in Uttarakhand offers numerous advantages, making it an attractive destination for both domestic and international investors. Uttarakhand presents a range of promising investment opportunities across various sectors, reflecting its strategic economic development goals and resource advantages. By capitalizing on sector-specific opportunities and benefiting from a supportive business environment, investors can achieve significant returns and contribute to the region's economic development. Hence Investible Projects are physical capital-intensive projects which could potentially be implemented through private sector participation.

Listed below are some of the Investible Projects in the Manufacturing sector taken up under the Sashakt Uttarakhand project

S. No.	Particulars	Description	Status	Type	Next Steps
1	Electronics Manufacturing at EMC, Kashipur	The Electronics Manufacturing Cluster in Kashipur represents a significant investment opportunity, offering a well-equipped and supportive environment for electronics manufacturers. With its strategic location, government incentives, and focus on infrastructure and innovation, the EMC is poised to drive growth in the electronics sector and contribute to the economic development of Uttarakhand.	<u>Under Process</u> • Investor Outreach Ongoing • Land allotted to 6 players	Investible Project	**Establishment of vital, essential, and desirable services as per MeitY implementation plan**
2	Priority Sector Industry Development at Parag Farms, Udham Singh Nagar,	The priority sector industry development at Parag Farms represents a significant opportunity for economic growth in Udham Singh Nagar. By focusing on agro-processing, dairy, and food production, the initiative leverages the region's agricultural strengths and aims to foster sustainable development, create jobs, and boost the local economy.	<u>Project Already submitted</u> • Investor Outreach Ongoing	Investible Project	**Approval of inception report, market demand analysis report, and tentative master plan**

S. No.	Particulars	Description	Status	Type	Next Steps
3	AYUSH and Herbal Products Manufacturing at Aroma Park, Kashipur	Aroma Park in Kashipur represents a significant opportunity for advancing AYUSH and herbal product manufacturing. By leveraging the region's natural resources, providing State-of-the-art infrastructure, and benefiting from government support, the park aims to establish itself as a prominent player in the natural health and wellness industry, driving economic growth and sustainable development in Uttarakhand.	70-80% allotted Awaiting approval to set up dedicated AYUSH park (Medicines and Equipment) at land parcel in US Nagar	Project	**Identification of land parcel for AYUSH**
4	Plastics Manufacturing at Integrated Industrial Estate Sitarganj, Phase II, Udham Singh Nagar,	The plastics manufacturing initiative at Integrated Industrial Estate Sitarganj, Phase II, presents a significant opportunity for industrial growth in Uttarakhand. With its strategic location, modern infrastructure, and supportive government policies, the estate is well-positioned to become a major hub for plastics manufacturing, driving economic development and creating substantial employment opportunities in the region.	Under Process with 30-35% allotment done - Investor Outreach Ongoing - Land allotted to 4 players	Investible Project	**Investor application through single window portal**
5	Wood-based Industries at Nepa Farms, Kashipur	Nepa Farms, located in Kashipur, is a prominent site for wood-based industries, focusing on the processing of timber and wood products. The industries at Nepa Farms mainly engage in the production of wood-based products such as plywood, veneer, and various types of furniture. These industries make use of local timber resources, contributing significantly to the regional economy by providing employment and supporting local forestry management. Nepa Farms' wood-based industries also emphasize sustainable practices, with a focus on responsible sourcing and processing of wood materials.	Under Process - Investor outreach ongoing – earmarked for ITC Paper and Pulp Mill Project - Multiple discussions held on customised package - Meetings held with Hon'ble CM, Principal Secretary and Secretary, Finance	Investible Project	**Finalization of package for ITC Paper and Pulp and issue of LoA for site.**

S. No.	Particulars	Description	Status	Type	Next Steps
6	Development of Food Park at Sitarganj	The development of the Food Park at Sitarganj is a significant initiative aimed at boosting the food processing industry in the region. Located in the Udham Singh Nagar district of Uttarakhand, the food park is designed to support the processing and value addition of agricultural products. It provides a hub for food processing companies, offering modern infrastructure, facilities, and a conducive environment for businesses involved in the food sector. The park is expected to enhance local agricultural production, promote investment, create jobs, and foster economic growth by attracting both domestic and international food processing industries.	<u>Under Process</u> • Identification of dedicated land parcels is to be done	Investible Project	**Identification of land parcel for Food Park focused on Millets, Horticulture etc.**
7	**Feasibility analysis for establishing data centers in hilly regions**	**The feasibility analysis for establishing data centers in hilly regions of Uttarakhand is a new initiative aimed at harnessing the region's potential for tech infrastructure development. This initiative explores the viability of setting up data centers in Uttarakhand's hilly areas, focusing on leveraging the region's natural advantages, such as stable power supply, cooler climate, and less susceptibility to natural disasters like earthquakes. The analysis includes factors such as connectivity, infrastructure availability, land suitability, and energy resources, aiming to create an eco-friendly, cost-effective, and secure environment for data storage and processing. The project is expected to boost the State's digital economy, attract investment, generate employment, and improve the overall tech ecosystem in Uttarakhand.**	**<u>Completed</u>** • **Discussed with the department on 10th October**	**Sectoral Initiative**	

Along with the Investible Projects under the Manufacturing sector which are taken up by the Uttarakhand Economy to meet its Vision, in context of regional development the State economy also engaged in investor outreach initiatives. These typically includes organizing roadshows, seminars, and one-on-one meetings, as well as creating marketing materials and providing detailed information about the investment potential, incentives and business environment. Effective investor outreach helps in securing capital, creating jobs, and stimulating economic growth. The details of the investor outreach are listed below:

Description	Completed/ On track Milestones	Next Steps
	- EoI from Adani Cement of 1700 Cr - ITC Paper and Pulp Mill Project: Negotiations ongoing between ITC and Dept; last meeting held on 14th Oct with Principal Secretary and Secretary, Finance - Investment intent by Aion OS, to set up AI Campus in Dehradun (5 -6 acres of land parcel in central location of Dehradun) - Identification of investors for development of wood industries - Identification of investors for mini food parks in hilly regions - Monetisation strategy for 4 land parcels in Dehradun, to derive maximum outcome to State in terms of revenue - Identification of land parcels, suitable for development of IT industry	- Adani Cement - Identification of suitable land parcels - ITC - Finalization of customized package and issue of LoA for site - Aion OS- Investment interest declined, due to other business priorities

4.2.1.B. Strategic Sector and other Initiatives:

4.2.1.B.1 These are soft initiatives that could be implemented by the State government, either itself or through support from private sector, for improvement in ease of doing business and efficiency of the system. Listed below are few to mention

Scheme	Description	Benefits
Business to Government (B2G) Manufacturers Scheme in Uttarakhand	The Business to Government (B2G) Manufacturers Scheme is designed to streamline and encourage the participation of manufacturers in supplying goods and services to government departments and agencies in Uttarakhand. This scheme aims to enhance efficiency, promote local manufacturing, and ensure that government procurement processes are transparent and beneficial for both the public sector and private manufacturers.	**For Manufacturers** **Increased Market Access**: Opportunity to access a significant market segment through government contracts, which can provide stable revenue streams and business growth. **Improved Competitiveness**: Enhanced competitiveness by participating in government tenders and receiving support to meet industry standards. **Enhanced Visibility**: Increased visibility and credibility as a trusted supplier to government agencies. **For the Government** **Local Economic Development**: Support for local economic development by promoting and leveraging local manufacturing capabilities. **Efficient Procurement**: More efficient and transparent procurement processes, leading to better value for public funds and improved service delivery. **Strengthened Supply Chains**: Strengthened and more resilient supply chains through the engagement of reliable local suppliers.

Scheme	Description	Benefits
One District, Two Products (ODOP) scheme in Uttarakhand	The primary objective of the ODOP scheme in Uttarakhand is to enhance the production and marketing of locally significant products, thereby boosting employment, encouraging entrepreneurship, and fostering sustainable economic development in the region.	**For Manufacturers** • **Financial Assistance:** Access to funding and subsidies to help establish or expand production facilities. • **Market Access:** Opportunities to showcase products in exhibitions and trade fairs, leading to increased visibility and sales. • **Skill Development:** Training programmes to enhance skills in production techniques, quality control, and marketing. • **Branding Support:** Assistance in creating a unique brand identity, which can improve marketability and customer recognition. • **Networking Opportunities:** Connections with other businesses, suppliers, and potential buyers, fostering collaboration and growth. • **Technology Transfer:** Access to modern technologies and best practices to improve productivity and product quality. • **Sustainable Practices:** Guidance on adopting eco-friendly production methods, appealing to conscious consumers and enhancing sustainability. **For the Government** • **Cultural Preservation:** Supporting traditional crafts and local products helps preserve cultural heritage and identity. • **Increased Revenue:** Boosting local production can lead to increased tax revenues and economic activity. • **Rural Development:** Fostering economic development in rural areas, which can help reduce urban migration. • **Enhanced Competitiveness:** Strengthening the local manufacturing sector makes it more competitive both nationally and globally. • **Improved Infrastructure:** Encouraging investments in infrastructure, logistics, and supply chains to support product distribution. • **Sustainable Development Goals:** Aligning with broader sustainable development objectives by promoting local resources and reducing carbon footprints.

4.2.1.B.2 Uttarakhand has launched several forward-looking initiatives to drive industrial development, enhance investor confidence, and promote sustainable growth. These initiatives aim to create a robust ecosystem for businesses, improve infrastructure, and foster inclusive economic development across the State. Some of the initiatives are listed below:

A Plug-and-Play Factory refers to pre-built industrial infrastructure that manufacturers can quickly move into and begin operations with minimal setup. These factories are fully equipped with essential utilities like electricity, water, waste management, and internet connectivity. Designed to reduce lead time and startup costs, these facilities allow businesses to focus on production rather than infrastructure development. Uttarakhand's Plug-and-Play Factory model aims to attract both domestic and international investors, particularly in sectors like automotive, electronics, pharmaceuticals, food processing, and AYUSH.

Key Features of the model includes ready-to-use infrastructure, strategic locations, customizable spaces, regulatory support and sustainability focus. This is beneficial to Manufacturers on many fronts like reduced setup time and cost, boostogn operational efficiency, access to developed industrial ecosystem, flexibility and scalability, compliance ease etc. Along with manufacturers, government benefits can also be separately noted like increased investment attraction, faster job creation, balanced regional development, revenue generation, sustainable economic growth etc.

As the State focuses on attracting more industries, particularly in sectors like automotive, electronics, pharmaceuticals, and consumer goods, providing

affordable rented accommodations for workers and executives is crucial to support industrial growth. Uttarakhand's unique geography, with its mix of hilly and plain regions, poses challenges for workforce settlement, particularly in areas where new industrial activity is developing. Ensuring access to quality, affordable rented accommodation is an essential enabler for creating a sustainable ecosystem for manufacturing operations across the State. This initiative provides many benefits like supporting workforce participation, reducing workforce turnover, attracting skilled talent, enabling industrial expansion in hill region etc.

For a strategically located State like Uttarakhand, PM Gati Shakti has the potential to significantly boost economic growth, particularly by strengthening the manufacturing, tourism, agriculture, and logistics sectors. The boost it provides to Manufacturing Sector by way of improved connectivity for industrial hubs, facilitating industrial expansion, unlocking hill regions for industrial growth can not go unlisted. By bridging the gap between the hilly and plain regions of the State, Gati Shakti can help Uttarakhand achieve balanced, inclusive, and sustainable economic growth, ensuring long-term prosperity for its residents.

4.2.1.C. Policy Framework & Support:

Uttarakhand's sectoral policies are designed to address the diverse needs of its economic landscape, fostering growth across MSMEs, large-scale industries, logistics, and startups. By providing targeted incentives, infrastructure, and support mechanisms, these policies aim to create a dynamic and competitive business environment, enhance economic development, and position the State as a key player in various sectors. These are policies and schemes of the State government are to further enable private sector participation or general reforms in various focus sectors.

Policy	Objective	Key Features	Target Sector
MSME Policy 2023	The MSME (Micro, Small, and Medium Enterprises) Policy in Uttarakhand aims to promote the growth and development of MSMEs by providing a conducive environment for their establishment and expansion. It seeks to enhance competitiveness, support innovation, and create employment opportunities.	1. **Financial Support** : MSMEs are provided with financial incentives such as subsidies on interest rates, capital investment subsidies, and support for procurement of machinery and technology. 2. **Infrastructure Development**: Development of dedicated industrial eStates and parks specifically for MSMEs, including facilities for common infrastructure, utilities, and services. 3. **Skill Development** : Training programmes and skill development initiatives to enhance the capabilities of the workforce employed in MSMEs. 4. **Ease of Doing Business** : Simplification of regulatory procedures and reduction of bureaucratic hurdles to facilitate easier setup and operation of MSMEs. 5. **Market Support** : Assistance in accessing domestic and international markets through marketing support, trade fairs, and exhibitions	The policy supports various sectors including manufacturing, agro-processing, textiles, and service-based industries that fall under the MSME category.
Mega Industrial Policy 2021	The Mega Industrial Policy aims to attract large-scale investments and promote the development of major industrial projects in the State. It focuses on creating a robust industrial ecosystem and driving significant economic growth.	6. **Incentives:** Substantial financial incentives, including capital investment subsidies, tax benefits, and exemptions on certain levies and duties for large industrial projects. 7. **Infrastructure Support:** Development of dedicated industrial zones and infrastructure to support mega projects, including improved connectivity, utilities, and facilities.	The policy focuses on sectors with high investment potential and economic impact, including heavy industry, manufacturing, electronics, and advanced technology sectors

Policy	Objective	Key Features	Target Sector
		8. **Single Window Clearance:** Streamlined processes for project approvals and clearances to reduce delays and facilitate faster implementation of large-scale projects. 9. **Employment Generation**: Emphasis on creating significant employment opportunities and promoting skill development among the local workforces. 10. **Sustainability:** Encouragement of environmentally sustainable practices and technology adoption in mega industrial projects.	
Logistic Policy 2023	The Logistic Policy aims to improve the efficiency of the logistics and supply chain infrastructure in Uttarakhand, enhancing connectivity, reducing logistics costs, and supporting industrial growth.	11. **Infrastructure Development:** Investment in logistics infrastructure such as warehousing facilities, transportation networks (roads, railways), and logistics parks to enhance connectivity and efficiency. 12. **Technology Integration:** Promotion of technology and digital solutions to streamline logistics operations, including tracking systems, automated warehousing, and logistics management software. 13. **Public-Private Partnerships (PPPs):** Encouragement of partnerships between the government and private sector to develop and operate logistics infrastructure and services. 14. **Regulatory Reforms:** Simplification of regulations related to transportation, warehousing, and customs to reduce bottlenecks and improve operational efficiency. 15. **Training and Skill Development:** Programmes to train professionals and workers in logistics management and operations.	Focus on improving logistics in key industrial and economic zones, including areas with high potential for trade and manufacturing.
Startup Policy 2023	The Startup Policy aims to foster innovation, support entrepreneurial ventures, and create a vibrant startup ecosystem in Uttarakhand. It seeks to provide a supportive environment for new and innovative business ideas.	16. **Financial Assistance:** Grants, seed funding, and subsidies to support the initial stages of startup development, including technology development and market entry. 17. **Incubation and Mentorship:** Establishment of startup incubators and accelerators that provide mentoring, technical support, and business development services. 18. **Ease of Startup:** Simplified procedures for company registration, compliance, and regulatory approvals to facilitate the establishment of new ventures.	The policy supports startups across various sectors, including technology, health care, agriculture, and renewable energy, with a focus on innovative and high-impact business models.

Policy	Objective	Key Features	Target Sector
		19. Networking Opportunities: Platforms for startups to connect with investors, industry experts, and potential partners through events, workshops, and networking sessions. **20. Infrastructure Support:** Access to co-working spaces, labs, and other facilities that support startup operations and growth.	

4.2.1.D. Institutional Strengthening & Skill Development

These are various initiatives towards improvement in institutional capacity and capability of government officials / employees to support implementation of Sashakt Uttarakhand programme. As part of the Ease of Doing Business (EoDB) improvement plan, capacity building initiatives aim to strengthen the skills, knowledge, and capabilities of key stakeholders, including government officials, business owners, and entrepreneurs. This approach helps create a more efficient, transparent, and supportive business environment, ultimately driving economic growth and development.

Benefits of Capacity Building for EoDB
1. **Improved Efficiency**: Enhanced skills and knowledge among government officials and business owners lead to more efficient and effective regulatory processes and business operations.
2. **Increased Transparency**: Better-trained officials and streamlined procedures contribute to greater transparency in business regulation and governance.
3. **Enhanced Competitiveness**: Empowered entrepreneurs and businesses are better equipped to compete in the market, driving economic growth and innovation.
4. **Greater Investor Confidence**: A well-supported business environment increases investor confidence, attracting both domestic and foreign investment.

4.2.1.E. Investor Engagement & Promotion:

It is a strategic initiative aimed at attracting and engaging potential investors, promoting the investment climate of a region, and facilitating the growth of various industries. In Uttarakhand, investor outreach efforts are designed to highlight the State's economic potential, showcase investment opportunities, and build strong relationships with both domestic and international investors. By effectively promoting investment opportunities, building strong relationships with investors, and providing comprehensive support, the State can attract and retain high-quality investments. This, in turn, contributes to economic growth, job creation, and overall prosperity, making Uttarakhand a key destination for investment in India.

4.3 Progress Made by Uttarakhand Economy for Manufacturing Sector in the State

The progress made by Uttarakhand's economy in the manufacturing sector has been noteworthy, driven by targeted initiatives and strategic investments. Here's an overview of the key achievements and developments
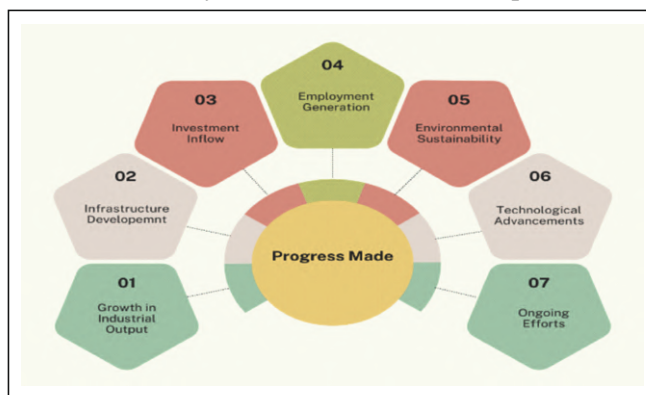
4.3.1 Growth in Industrial Output:
1. **Industrial Estates**: The establishment and operational success of Integrated Industrial Estates (IIEs) in Haridwar, Pantnagar, Sitarganj, and other locations have significantly boosted industrial output. These eStates host numerous manufacturing units across various sectors.

2. **Sectoral Growth**:

1 **Automobile Industry**: Companies like Tata Motors, Bajaj Auto, and Ashok Leyland have set up major manufacturing units in the State, making Uttarakhand a significant player in the automobile sector.
2 **Pharmaceuticals and Biotechnology**: The pharmaceutical sector has seen substantial growth with the presence of companies like Cipla, Zydus Cadila, and Sun Pharma, contributing to the State's economic development.

3   Food Processing: Leveraging its rich agricultural base, Uttarakhand has made considerable progress in food processing, with many companies establishing processing and packaging units.

4.3.2 Infrastructure Development:
1. **Transport and Logistics**: Improved Road and rail connectivity have facilitated better movement of goods. The construction of highways and logistic parks has reduced transportation time and costs, enhancing the overall efficiency of the manufacturing sector.
2. **Power Supply**: Enhanced power infrastructure ensures uninterrupted power supply to industrial units, which is critical for manufacturing operations. Renewable energy initiatives have also been integrated into the power supply system.

4.3.3 Investment Inflows:
1. **Domestic and Foreign Investments**: The State has attracted significant investments from both domestic and foreign companies. The ease of doing business and attractive incentive packages have made Uttarakhand an appealing destination for investors.
2. **Government Initiatives**: Schemes like the "Make in India" and State-specific policies have encouraged investments in the manufacturing sector. The creation of a conducive business environment has been pivotal in this progress.

4.3.4 Employment Generation:
1. **Job Creation**: The establishment of new manufacturing units has led to substantial job creation in the State. The presence of large-scale industries has provided direct and indirect employment opportunities to thousands of people.
2. **Skill Development**: Various skill development programmes and Industrial Training Institutes (ITIs) have ensured a steady supply of skilled labour, aligning workforce capabilities with industry requirements.

4.3.5 Environmental Sustainability:
1. **Green Manufacturing**: Efforts to promote sustainable manufacturing practices have seen success, with many industries adopting eco-friendly technologies and processes. The focus on renewable energy sources has furthered the State's commitment to environmental sustainability.
2. **Regulatory Compliance**: Industries are increasingly complying with environmental regulations, contributing to a reduction in pollution levels and promoting cleaner production methods.

4.3.6 Technological Advancements:
1. **Adoption of Modern Technologies**: Manufacturing units in Uttarakhand are increasingly adopting modern technologies and automation to enhance productivity and efficiency. This includes the use of robotics, IoT, and advanced manufacturing systems.
2. **Innovation Hubs**: The development of innovation hubs and research centres in collaboration with academic institutions has spurred innovation and technological advancements in the manufacturing sector.

4.3.7 Overcoming Challenges and Ongoing Efforts:
1. **Overcoming Geographic Constraints**: Despite progress, the State's hilly terrain poses logistical challenges. Ongoing efforts aim to further improve connectivity and transportation infrastructure.
2. **Enhancing Competitiveness**: Continuous efforts are being made to enhance the competitiveness of the manufacturing sector through policy reforms, infrastructure improvements, and capacity building.

The manufacturing sector in Uttarakhand has made significant strides, driven by strategic initiatives, robust infrastructure, and a favourable business environment. The progress is evident in the growth of industrial output, increased investments, job creation, and sustainable practices. While challenges remain, the State's ongoing efforts promise a bright future for its manufacturing sector, contributing to the overall economic development of Uttarakhand.

4.4   Challenges and Recommendations

4.4.1 Challenges:
Implementing the proposed strategy for the growth of Uttarakhand's manufacturing sector could encounter several hurdles. These challenges span across infrastructure, regulatory frameworks, financial constraints, and technological adoption. Here's an overview of potential hurdles for each of the key pillars:

4.4.1.A Growth of Specific Priority Sectors: AYUSH, Defence, Consumer Goods, Electrical/ Electro-nics, and Wood Sectors
1. **Infrastructure and Logistics**:
- **Geographic Constraints**: Uttarakhand's hilly terrain poses significant logistical challenges, making transportation and supply chain management difficult and costly.
- **Limited Industrial Hubs**: The concentration of industrial eStates in specific areas could limit the

expansion of these sectors across the State, especially in remote regions.

2. Regulatory and Policy Issues:
▪ **Compliance and Bureaucracy**: Complex regulatory frameworks and bureaucratic delays can hinder the establishment and operation of new enterprises in these sectors.
▪ **Sector-Specific Regulations**: Navigating the regulatory requirements unique to sectors like defence and AYUSH can be challenging, especially for new entrants.

3. Skill Gaps:
▪ **Specialized Workforce**: The sectors identified require a specialized workforce, which might be in short supply. Training and development programmes may not be able to keep pace with industry needs.

4. Market Access and Competition:
▪ **Market Penetration**: Achieving significant market penetration, especially in competitive sectors like consumer goods and electronics, requires robust marketing and distribution networks.
▪ **Competition**: Established players in these sectors can pose stiff competition to new entrants, making it difficult for them to gain a foothold.

4.4.1.B Set-up and Growth of MSMEs:
1. Financial Constraints:
▪ **Access to Capital**: MSMEs often face difficulties in securing adequate funding due to stringent lending norms and lack of collateral.
▪ **Financial Management**: Limited financial literacy and management skills can hinder the growth and sustainability of MSMEs.
2. Infrastructure Deficiencies:
▪ **Lack of Facilities**: Inadequate industrial infrastructure, especially in hilly areas, can impede the growth of MSMEs. Basic amenities like roads, electricity, and water supply might be lacking.
▪ **Connectivity**: Poor connectivity with major markets and industrial hubs can isolate MSMEs in hilly regions, affecting their growth prospects.

3. Capacity Building and Support:
▪ **Limited Support Services**: Insufficient support in terms of mentoring, technical assistance, and market linkages can hinder the growth of MSMEs.
▪ **Policy Implementation**: Effective implementation of policies aimed at supporting MSMEs can be challenging due to bureaucratic inefficiencies and lack of coordination among various government agencies.

4.4.1.C Promote Cutting-Edge Technologies and Sunrise Industries:

Drones and Electric Vehicles
1. Technological Challenges:
▪ **R&D and Innovation**: High initial costs and the need for continuous R&D can be prohibitive. Establishing innovation hubs and research centers requires significant investment.
▪ **Technical Expertise**: The adoption of cutting-edge technologies requires technical expertise, which may be in short supply.

2. Regulatory and Standards:
▪ **Regulatory Framework**: Emerging industries like drones and electric vehicles need clear regulatory frameworks. Uncertainties in regulations can deter investment and innovation.
▪ **Standardization**: Lack of standardization in technologies can pose challenges for manufacturers and consumers alike.

3. Market Development:
▪ **Consumer Awareness and Acceptance**: Low consumer awareness and acceptance of new technologies can slow down market adoption.
▪ **Infrastructure**: Supporting infrastructure, such as charging stations for electric vehicles and airspace management for drones, needs to be developed.
4. Financial Incentives and Support:
▪ **High Initial Costs**: The high cost of adopting new technologies can be a barrier. Adequate financial incentives and subsidies are required to encourage investment.
▪ **Access to Funding**: Securing funding for innovative projects can be challenging, particularly for start-ups and smaller companies.

While the proposed strategy for the growth of Uttarakhand's manufacturing sector holds significant promise, several hurdles could impede its implementation. Addressing these challenges requires coordinated efforts from the

government, private sector, and other stakeholders to create a conducive environment for industrial growth. This involves improving infrastructure, streamlining regulatory processes, enhancing financial support, and fostering a skilled workforce capable of driving innovation and growth in the identified priority sectors.

4.4.2 Recommendations

4.4.2.A Backward and Forward Linkages:
There is a need to develop backward and forward linkages in the State so that the products produced in the State can be used not only as the final products by the consumers but also serves as the raw materials in the State economy. This would help generating the more output within the economy and hence generating growth drivers for it to grow double in capacity and numbers and also helps in generating the employment opportunities within the State and hence restricting the migration out of the State.

4.4.2.B Initiatives for Overcoming Power Problems:
The State Government may examine possibility to install Solar Water Pumps at various Hilly regions as to overcome power problems and encourage and be inviting as a destination for setting up of new industrial units. By adopting Solar resources, the cost effectiveness can also be bought in for energy use and hence it can play as an inviting factor to encourage setting up of industrial units in the State and hence being able to generate more employment and double the State Economy in the years to come.

4.4.2.C Promoting Research Institutes:
Opening of research institutes in the State Economy, not only helps in promoting the effective & cost-effective production but also helps in creating the employment opportunities in diverse fields of operations. Research Institutions brings in the timely introduction of effective

techniques and the new methods of production and technological advancements coming. This helps the producers, manufacturers and the research scientists to work more effectively and optimally in their respective fields.

4.4.2.D Ensuring Warehousing Facilities:
At National level there are number of schemes for establishing small godown, warehouses, pre- cooling chambers, etc. but these are either absent, very rare or not planned in a targeted manner at State level. Thus, State government should promote these facilities/schemes in the region. This will not only bring the more efficient functioning of the established units and their products but will also promote the expansion benefits of these units. Further by bringing in these facilities in pace at the State level, can act as an invitation that a State can ensure to attract more ventures, units and start-ups in its economy.

4.4.2.E Workers' Medical Insurance:
The State Government may consider providing medical insurances to the workers involved in the industries set up in the hilly regions. This can boost the local workers to seek employment within the State and reduce the migration out situation in the State. This can also promote the setting up of new units in the State with an ensuring condition of medical insurance been provided by the State. Hence by doing this the State can picture itself growing at a velocity needed to make the economy go double within few years of its operations following the recommendations.

4.4.2.F Proper Implementation and Monitoring:
The State government needs to ensure the proper implementation and monitoring is all the schemes and policies that have been made to achieve some specific targets and programme outcomes. This can also be instrumental in achieving the targets within the stipulated time limit and hence be effective and efficient in all the ways possible.

4.4.2.G Effcient Utilization of Available Land:
Owing to the peculiar topography of the State, the available land should be used efficiently, and the potential of the unidentified land should be identified to be bought to use. Further the idea of vertical usage should be implemented i.e. the land should be used vertically rather than horizontally to make it more space-saving and efficiently utilized. Hence the culture of establishing storeys should be adopted in the hilly regions to make optimal usage of the available resources which otherwise could have remained unutilized.

4.4.2.H Development Programmes to Address Migration:
Even though the Government has launched a few policies and schemes benefitting the MSMEs based in the hilly areas, such as the MSME Policy, the Startup Policy, etc., there is a need to put more thrust by the Government on providing appropriate infrastructure, educational facilities, and health care services to the inhabitants in the hilly areas.

4.4.2.I Secure Working Conditions:
The government needs to ensure the protection of labour rights and promotion of a safe and secure working environment for all workers through proper monitoring and implementation of the existing norms.

4.4.3 Summing up the Recommendations :
To enhance the State's economy, it is essential to develop both backward and forward linkages, allowing local products to serve as raw materials and final goods. This integration can boost output, stimulate growth, and create employment opportunities, thereby reducing migration. Addressing power challenges, the government should consider installing solar water pumps in hilly regions, making the State more attractive for new industrial units while promoting cost-effective energy solutions. Establishing research institutes will foster effective production techniques and generate diverse job opportunities, facilitating technological advancements. Additionally, the State must prioritize warehousing facilities to improve operational efficiency for local businesses, attracting further investment. Providing medical insurance for workers in hilly industries can encourage local employment and support new ventures. Effective implementation and monitoring of government schemes are crucial to achieving targeted outcomes within designated timeframes. Given the State's unique topography, land should be utilized efficiently, promoting vertical development to maximize resources. Furthermore, despite existing policies for MSMEs, greater focus on infrastructure, education, and healthcare is necessary to address migration issues. Lastly, ensuring secure working conditions and protecting labor rights through diligent monitoring will create a safer work environment for all.

5. Way Forward

To successfully implement the proposed strategy for growing Uttarakhand's manufacturing sector, a collaborative approach is essential to navigate potential challenges.

5.1 Growth of Specific Priority Sectors:
For sectors such as AYUSH, Defence, Consumer Goods, Electrical/Electronics, and Wood, addressing geographic constraints is critical. Enhancing transportation and logistics infrastructure will facilitate supply chain management, particularly in remote areas. Expanding industrial hubs beyond concentrated areas will ensure broader sectoral growth. Simplifying regulatory frameworks and reducing bureaucratic delays will ease the establishment of new enterprises, particularly in specialized sectors like defence and AYUSH. Furthermore, developing targeted training programmes will help bridge skill gaps, ensuring a specialized workforce is available to meet industry demands. To enhance market access, robust marketing and distribution networks must be established, helping new entrants compete against established players.

5.2 Set-up and Growth of MSMEs:
To bolster MSMEs, improving access to capital through relaxed lending norms and increased financial literacy is essential. Infrastructure development, particularly in hilly areas, must prioritize basic amenities and connectivity to major markets. Strengthening support services such as mentoring and technical assistance will empower MSMEs, while efficient policy implementation can enhance coordination among government agencies.

5.3 Promoting Cutting-Edge Technologies and Sunrise Industries:
In advancing industries like drones and electric vehicles, establishing innovation hubs and research centers will support R&D efforts. A clear regulatory framework and standardization will foster investment and innovation, while raising consumer awareness about new technologies will encourage market acceptance. Developing supporting infrastructure, such as charging stations and airspace management, is crucial for facilitating adoption. Finally, offering financial incentives and improving access to funding for innovative projects will help overcome initial cost barriers.

Overall, overcoming the observed challenges, requires a unified effort from the government, private sector, and stakeholders to create a supportive environment for industrial growth. By focusing on infrastructure improvements, streamlined regulations, enhanced financial support, and a skilled workforce, Uttarakhand can realize its potential for significant economic development.

TOURISM THE ECONOMIC GROWTH DRIVER

Introduction: The Vision for Uttarakhand
Uttarakhand's economic growth strategy underscores its commitment to sustainable development, enhanced infrastructure, and the promotion of tourism as a key economic driver. Through a combination of strategic projects, policy reforms, and capacity-building initiatives, the State is poised to attract investment, create jobs, and improve the quality of life for its residents.

In 2023-24, Uttarakhand embarked on a transformative journey to solidify its position as a premier destination for tourism and investment in India. The State's economic growth strategy has been fueled by sectoral initiatives, investible projects, policy measures, and capacity-building activities that aim to enhance infrastructure, attract private investment, and promote sustainable tourism.

Trends in Tourist Footfall (2022-2024)
From 2022 to 2024, the overall tourist footfall in Uttarakhand displayed steady growth, with minor fluctuations. Domestic tourism dominated the total footfall, contributing over 99% of visitors annually, though a slight decline is observed from 59,488,189 in 2023 to 59,373,869 in 2024. In contrast, foreign tourists consistently increased, from 64,489 in 2022 to 148,412 in 2023 and 176,408 in 2024. Prominent destinations like Rudraprayag, Haridwar, and Tehri Garhwal experienced significant growth in domestic and international arrivals, reflecting their sustained popularity. However, some destinations, including Dehradun, Gangotri, and Joshimath, recorded a decline in footfall by 2024, likely due to accessibility challenges or environmental concerns. Notably, Tehri Garhwal emerged as a key growth destination, with a remarkable increase in total tourists from 3.76 million in 2023 to over 5 million in 2024, driven by domestic and international interest.

Homestay Registration Status (FYs 2018-2019 to 2023-2024)
The trends in homestay registrations in Uttarakhand from F.Y. 2018-19 to F.Y. 2023-24 show significant fluctuations, with an initial rise from 965 in F.Y. 2018-19 to a peak of

Table 1: Tourism Statistics of Major Tourist Destinations in Uttarakhand for FYs 2022, 2023 and 2024Tourism Statistics of Major Tourist Destinations for FYs 2022 to 2024

Tourism Statistics of Major Tourist Destinations for FYs 2022 to 2024								
Name of Tourist Destination	**Year 2022**			**Year 2023**			**Year 2024**		
	Domestic	Foreign	Total	Domestic	Foreign	Total	Domestic	Foreign	Total
Rudraprayag	5816212	13447	5829659	6113424	26262	6139686	6461583	30457	6492040
Phool Chatti	756264	1817	758081	1038891	3993	1042884	964036	4857	968893
Haridwar	1171786	1275	1173061	1469663	2250	1471913	2131543	3083	2134626
Pauri	12443	25	12468	13735	29	13764	16074	15	16089
Srinagar	456368	56	456424	599598	111	599709	632931	111	633042
Kotdwar (Sokhrajpur including Peeka)	270907	4445	275352	342156	21817	363973	395619	21149	416768
Rudraprayag (excluding Deokund)	343423	130	343553	401618	351	401969	491127	361	491488
Deoria Tal	1563280	968	1564248	1957609	1254	1958863	1652076	1505	1653581

Name of Tourist Destination	Year 2022			Year 2023			Year 2024		
	Domestic	Foreign	Total	Domestic	Foreign	Total	Domestic	Foreign	Total
Guptkashi (Including Ukhimath, Kedarnath, Triyuginarayan)	121985	65	122050	173833	2306	176139	174268	192	174460
Joshimath (Govindghat and Ghangaria included)	704011	118	704129	514340	1033	515373	154700	725	155425
Badrinath	1763384	194	1763578	1779930	499	1780429	1772571	1693	1774264
Auli	412674	78	412752	181353	328	181681	141674	553	142227
Gairsain	190198	86	190284	164501	45	164546	185797	175	185972
Valley of Flowers	20550	280	20830	12831	401	13232	19106	330	19436
Tehri Garhwal	2723603	22709	2746312	3713970	47177	3761147	5007953	58855	5066808
Uttarkashi (including Vishwanath temple)	153009	980	153989	362106	1333	363439	293487	1103	294590
Gangotri	781903	58	781961	712749	0	712749	540190	0	540190
Yamunotri	621504	34	621538	560918	0	560918	515067	0	515067
Dehradun	34252800	6607	34259407	37050845	20657	37071502	34912520	24204	34936724
Almora	147195	1606	148801	235571	3040	238611	419510	2782	422292
Ranikhet	80074	52	80126	125167	0	125167	125620	625	126245
Kausani Bageshwar	81952	154	82106	81935	628	82563	108670	579	109249
Pithoragarh district	116997	217	117214	126989	408	127397	192422	584	193006
Champawat district	36334	208	36542	227129	223	227352	258807	452	259259
Nainital	525656	4020	529676	776526	7971	784497	1014602	9537	1024139
Kosi Valley	215076	467	215543	172741	355	173096	160387	962	161349
Corbett National Park	349746	3537	353283	328372	4721	333093	351771	10120	361891
Mussoorie	227515	856	228371	249689	1220	250909	279758	1399	281157
Total	53916849	64489	53981338	59488189	148412	59636601	59373869	176408	59550277

Source: Tourism Department of Uttarakhand

1262 in F.Y. 2019-20, followed by a sharp decline to 437 in F.Y. 2020-21 due to the COVID-19 pandemic. Post-pandemic recovery is evident with increases in F.Y. 2021-22 and F.Y. 2022-23, reaching 1008, though registrations dipped again to 776 in F.Y. 2023-24. District-level trends reveal variability, with Nainital and Haridwar showing consistent growth in recent years, while others like Chamoli and Rudraprayag exhibit fluctuating patterns. Dehradun and Tehri also experienced notable peaks and troughs. The overall trajectory reflects the impact of the pandemic and ongoing challenges in sustaining growth in the homestay sector across the state.

Table 2: Homestay Registration Status

Sl. No.	District	F.Y. 2018 -19	F.Y. 2019 -20	F.Y. 2020 -21	F.Y. 2021 -22	F.Y. 2022 -23	F.Y. 2023 -24
1	Dehradun	211	220	77	58	200	137
2	Haridwar	13	05	03	7	15	32
3	Tehri	95	51	33	45	84	102
4	Uttarkashi	60	195	57	88	86	88
5	Rudraprayag	57	69	25	42	46	23
6	Pauri	19	76	14	60	51	30
7	Chamoli	125	195	61	42	110	55
8	Nainital	149	127	64	105	235	175
9	Almora	59	85	30	36	33	41
10	Pithoragarh	141	177	85	70	105	61
11	Champawat	05	29	51	44	4	17
12	USN	02	06	00	0	1	1
13	Bageshwar	29	27	37	16	38	14
	Total	**965**	**1262**	**437**	**613**	**1008**	**776**

Source: Tourism Department of Uttarakhand

A. ENHANCING TOURISM INFRASTRUCTURE AND INVESTMENT

A significant focus for Uttarakhand this year has been the development of tourism infrastructure and attracting private investment. The State has identified several key projects and initiatives to drive this agenda:

A.1 Development of Greenfield Premium Hospitality Establishments

Identifying greenfield sites in Uttarakhand has been completed, and significant progress has been made in attracting major investors. Notable achievements include signing Memorandums of Understanding (MoUs) with key players such as Club Mahindra, Karamchand Thapar Group, Radisson Hotels, and DS Group, totalling an investment of ₹ 2,500 crore. The State's revised service sector policy has also been approved, strengthening the investment framework. Guidelines for the development of greenfield hospitality have been approved by the Uttarakhand Investment and Infrastructure Development Board (UIIDB), and Letters of Award (LoA) will be issued for 5+ sites by FY25.

Investor meetings and site visits have been conducted with stakeholders, including Club Mahindra, Thapar, Khyber, Oberoi Resorts, DS Group, and ITC Hotels. Specific actions include resolving forest clearance issues and securing master plan approval for Thapar Group's land parcel in Narendra Nagar. Despite the delays, the signed MoUs demonstrate continued investor interest and future investment potential.

The Government of Uttarakhand's efforts to develop greenfield premium hospitality establishments remain on track, with land parcels set to be allotted under the Service Sector Policy. MoUs include a significant investment of ₹ 1,000 crore with Club Mahindra to establish multiple five-star properties, an agreement with Karamchand Thapar Group to develop an Integrated Hospitality District in Narendra Nagar, an ₹ 1,000 crore investment from Radisson Hotels, an ₹ 250 crore commitment from DS Group for a premium resort in Khanijnagar, Mussoorie and ₹ 300 crore investment from Oberoi group. These initiatives highlight the State's commitment to boosting tourism and hospitality sectors.

A.2 On-boarding Private Partners for Refurbishment and O&M of GMVN/KMVN Guesthouses

The clustering of GMVN (Garhwal Mandal Vikas Nigam) and KMVN (Kumaon Mandal Vikas Nigam) properties has been completed, marking a key milestone in optimising the management of these assets.

At least 75% of Cluster 1 sites received letters of award (LoA) by October 2023, and LoAs would be issued for at least 75% of Cluster 2 sites by FY25.

A.3 Development of Tourism Products at Identified Circuit Locations

Tourism development in Uttarakhand is making good progress, with a comprehensive list of potential products already identified. A significant achiev-ment is the successful formulation and awarding of a heli tourism package for Adi Kailash, which enhances high-altitude tourism in the region. Aero Sports Festival was held at Tehri in April 2024 and a list of 20+ tourism products created for Champawat district in June, 2024.

A.4 Operation and Maintenance of the Institute of Hotel Management (IHM) in PPP Mode

The selection of institutes for Public-Private Partnerships

(PPPs) has been completed, marking significant progress in this initiative. The Request for Proposals (RFP) for the Food Craft Institute (FCI) Almora is being finalised. The Uttarakhand Tourism Development Board (UTDB) will determine further details regarding additional institutes of hotel management (IHMs).

A.5 Strengthening Policy and Institutional Frameworks

To ensure the successful implementation of its tourism and investment initiatives, Uttarakhand has also focused on strengthening its policy and institutional frameworks:

B. UTTARAKHAND TOURISM POLICY 2023

The Uttarakhand Tourism Policy 2023 and its guidelines have been officially notified, and the Single Window Clearance Portal has been updated to align with the new framework.

The Uttarakhand Tourism Policy 2023 aims to establish the state as a world-class tourism destination by enhancing infrastructure, promoting sustainable tourism, and leveraging digital technology. The policy focuses on improving connectivity through road, rail, and air networks, including heli-services, while developing tourism hubs and way-side amenities. It emphasises branding and marketing strategies to position Uttarakhand as "Simply Heaven," targeting various religious, adventure, wellness, and heritage tourism segments. A digital-first approach is central to the policy, incorporating online travel platforms, mobile apps, and data-driven tourism management to enhance visitor experiences. The government seeks to create a balanced regional development model by promoting rural tourism, supporting local artisans, and implementing eco-friendly initiatives to preserve the state's natural and cultural heritage.

The policy encourages private sector participation through Public-Private Partnership (PPP) models, investment incentives, and a single-window clearance system for tourism-related projects. It sets ambitious goals, including contributing USD 10 billion to the state's economy, creating 2 million jobs, and increasing the average tourist stay to 4-5 days by 2030. Sustainability is strongly emphasised, ensuring that tourism growth does not harm the state's fragile ecosystem. Additionally, measures for tourist facilitation, such as improved safety, universal accessibility, and better grievance redressal mechanisms, have been outlined. By integrating technology, community development, and sustainable practices, the policy envisions a future where Uttarakhand emerges as a premier global tourism hub while preserving its unique heritage and environment.

This ensures streamlined processes for tourism-related approvals in the State. The complete policy document can be accessed on the official website:

[Tourism Policy 2023: https://uttarakhandtourism.gov.in/sites/default/files/2023-06/Tourism-policy-2023.pdf]

B.1 Operational Guidelines

The Uttarakhand Tourism Policy 2023 is a strategic initiative to promote tourism-led development, attract investments, and generate employment opportunities in the state. The policy, operational until March 2030, provides clear guidelines for project approvals, subsidy disbursements, and eligibility criteria for tourism enterprises. Various institutional mechanisms oversee the policy's implementation and monitoring, including the State Level Empowered Committee (SLEC), Integrated Tourism Committee (ITC), and District Level Committees. Eligible tourism units span hospitality, adventure, wellness, and cultural tourism, with specific requirements for investment levels, infrastructure, and compliance with National Industrial Classification (NIC) codes. The policy also supports expansion projects that meet additional operational and financial benchmarks.

A wide range of incentives is available under the policy. These include capital investment subsidies of up to 50%, region-based support for tourism products, and additional incentives for marketing, training, and skilling activities. State Goods and Service Tax (SGST) reimbursements, interest subvention, and operational subsidies for electricity and stamp duty are also offered to eligible units achieving their Commercial Operations Date (COD) during the policy period. Turnover-linked incentives are available for high-value projects, foreign tourist engagement, and organising significant events. Applications are processed through the Single Window Clearance System, and the District Level Committee for Tourism (DLCT) and Integrated Tourism Committee (ITC) review claims before SLEC approval. Funds are disbursed within 270 days, ensuring timely support for projects.

Tourism units must provide accurate documentation and adhere to policy requirements to maintain accountability. Misrepresentation or irregularities can result in benefit withdrawal, penalties, and legal action. The Uttarakhand Tourism Development Board (UTDB) reserves the right to modify guidelines, address ambiguities, and ensure smooth implementation. Focusing on transparency, sustainability, and inclusive growth, the policy aims to position Uttarakhand as a premier tourism destination while fostering balanced regional development and economic growth.

C. INSTITUTIONAL RESTRUCTURING OF UTDB

The institutional restructuring of the Uttarakhand Tourism Development Board (UTDB) is a strategic initiative designed to enhance the board's capacity and effectiveness in implementing tourism-related projects. This restructuring focuses on creating a more agile and efficient organisation capable of better managing and promoting tourism development across Uttarakhand.

C.1 Forming a Dedicated Cell: A key element of this restructuring is the proposal to establish a dedicated "Sashakt Uttarakhand Cell" within the UTDB. This cell would be staffed with a full-time programme director and 1-2 implementation managers, overseeing day-to-day project implementation, investor outreach, and ensuring all initiatives align with the State's tourism goals.

C.2 Enhancing Coordination and Expertise: The restructuring aims to improve coordination across various departments and develop sector-specific expertise within the UTDB. The UTDB can effectively address the challenges and opportunities within the tourism sector by streamlining project management and fostering a more responsive and proactive organisation.

C.3 Aligning with State Goals: This restructuring aligns with the broader objectives of the Sashakt Uttarakhand @25 initiative, which seeks to double the State's GDP by 2030, with tourism identified as a key high-value sector. A restructured UTDB will be better equipped to attract investments, manage partnerships, and oversee the efficient execution of tourism projects, contributing significantly to the State's economic growth.

C.4 Ensuring Future Continuity: Another important aspect of the restructuring is building institutional capacity that ensures sustainable growth beyond current initiatives. The UTDB aims to adapt to changing market demands, investor interests, and policy environments by maintaining a flexible and dynamic organisational structure, securing Uttarakhand's position as a premier tourism destination in the coming years.

D. TOURISM DEVELOPMENT INITIATIVES

D.1. Incentives for Increasing Private Investment in the Tourism Sector

Uttarakhand government is committed to facilitating investment in its tourism sector by streamlining processes and offering a comprehensive range of incentives. As part of this initiative, a Tourism Investment Facilitation Centre will be established, serving as a one-stop solution for investors, ensuring their projects are handled efficiently and transparently. Additionally, a High-Powered Committee on Tourism will be constituted to oversee large-scale projects and manage the disbursement of incentives, further enhancing the investment climate.

The State's policy outlines various attractive incentives for investors, including subsidies, tax rebates, and other financial benefits designed to encourage substantial investment in tourism. Uttarakhand has set ambitious targets to attract at least 100 Public-Private Partnership (PPP) projects and ₹ 40,000 crore in investments by 2030, with interim goals of ₹ 30,000 crore in investments and 70 PPP projects by 2027.

To further attract investment, Uttarakhand offers up to a 25% capital subsidy through the allotment of land from the Government Land Bank. Alternatively, for projects where land is privately acquired, the State provides a capital subsidy of up to 25% of the Capital Expenditure (CAPEX). These incentives and a streamlined approval process make Uttarakhand a compelling destination for tourism investment, positioning the State as a leader in sustainable and high-value tourism development. Up to September 2024, 126 applications received (₹ 900+ Cr investments) and 94 applications have been approved (₹ 720 Cr investments).

D.2. Selection of Implementation Agency for the OTA Platform

The selection of the implementation agency for the design, development, operations, and maintenance of the Online Travel Agency (OTA) for Uttarakhand Tourism is currently in the concept stage. A concept note outlining the vision for a State-led OTA platform has been formulated, laying the groundwork for this significant initiative. Once approved, this initiative will be crucial, as a successful OTA that can effectively promote Uttarakhand as a premier tourist destination will be a game-changer for multiple stakeholders in the Uttarakhand tourism sector, accelerating their growth.

D.3. Capacity Building and Marketing Outreach

Uttarakhand has also placed a strong emphasis on capacity building and marketing to elevate its global presence and attract high-value tourists:

D.4. Appointment of State-led Homestay Aggregator

The tourism department has launched the "Uttarastay" Portal for the facilitation, promotion, and marketing support of homestay operators in place of an aggregator.

Through this portal, efforts are being made to ensure economic, social, and other benefits to homestay operators. The portal aims to enhance the visibility and outreach of homestay projects in the State, promoting increased engagement. Based on a definitive process, homestay operators will receive various types of support and discussions with local and other public agencies are being held to establish a comprehensive governance framework.

The Deen Dayal Upadhyay Homestay Development Scheme has significantly progressed in the last FY.

D.4.1 Listed Homestays:
As of June 30, 2024, there are a total of 5,518 homestays registered across various districts in Uttarakhand. The distribution of homestays is as follows: Almora has 444, Bageshwar 178, Chamoli 622, Champawat 154, Dehradun 738, Haridwar 82, Nainital 895, Pauri 252, Pithoragarh 742, Rudraprayag 274, Tehri 449, U.S. Nagar 6, and Uttarkashi 682. These numbers highlight the extensive availability of homestay accommodations throughout the State, catering to a diverse range of tourists and promoting local hospitality.

D.4.2 Results of Study of Homestay Operations
Uttarakhand Department of Economics and Statistics (DES) conducted a study covering 608 homestays in all 13 districts of the State. The scheme has created accommodation capacity for 4254 people and is expected to increase to 5879. The scheme has reportedly contributed to an economic value increase of ₹344.54 lakhs. Key suggestions for strengthening the scheme as per the study report are:
1. Promotion and room reservation through a government-developed web portal will facilitate tourists' discovery and use of homestay accommodation, and the payment system will also be transparent.
2. The homestay booking website may provide GPS locations of the homestays and nearby places of interest, such as religious places, scenic spots and ancient monuments in the surrounding areas of respective homestays, for tourists to enjoy and plan their visits.
3. Government departments/agencies may provide comprehensive training to homestay owners to manage their businesses and provide hospitality services for tourists.
4. The scheme needs to be promoted amongst economically weaker sections and BPL families. The government may consider increasing the subsidy to such families in order to promote homestay facilities in the state's border villages.
5. The government may install a hoarding in front of each homestay displaying the scheme's name, the financial

year when financial support was provided, the project's financial outlay, the amount invested by the homestay owner, the sanctioned loan amount, the subsidy provided, the name of the bankers, and other relevant information pertaining to the homestay.
6. Homestay owners may be encouraged to showcase local products and food preparations in their facilities for tourists to enjoy and buy as another income source.

D.5. Branding, PR, and Marketing Outreach for Uttarakhand Tourism
Uttarakhand Tourism is set to establish a robust and recognisable brand by positioning the State as a dynamic and experiential travel destination under the slogan "Simply Heaven." This branding effort will highlight the State's diverse attractions and appeal to a broad audience.

To achieve this, Uttarakhand Tourism will employ a multi-pronged marketing strategy. Offline marketing initiatives will include Out-of-Home (OOH) advertising, content advertisements, interactive marketing, participation in travel expos and trade fairs, and the organisation of annual carnivals and festivals. Merchandising activities will complement these efforts to increase visibility and engagement.

In addition, a comprehensive digital marketing strategy will be implemented to reach potential visitors through various online platforms. This will involve pay-per-click (PPC) advertising, search engine optimisation (SEO), social media marketing, and other digital techniques. The goal is to significantly boost the State's online presence, to reach 50 lakh followers on the official social media handles of the Uttarakhand Tourism Development Board by 2030. This integrated approach effectively showcases Uttarakhand's unique offerings and attracts a global audience.

D.5.1 House of Himalayas (HoH)
The 'House of Himalayas' (HoH), launched by Prime Minister Narendra Modi on December 8, 2023, under the "Vocal for Local" and "Local to Global" initiative, is a transformative effort to empower Himalayan communities by promoting premium products crafted by self-help groups (SHGs), women farmers, and rural entrepreneurs in Uttarakhand. This initiative seeks to consolidate scattered efforts to improve product quality and packaging, enabling Himalayan goods to compete in high-end national and international markets. By fostering economic empowerment, particularly for women, HoH aims to create "Lakhpati Didis" and promote rural prosperity while enhancing Uttarakhand's image as an exotic tourist and investment destination.

Since its inception, HoH has made significant progress in strengthening its operations. To enhance product visibility, a dedicated e-commerce portal was launched, supported by partnerships with platforms like Amazon and luxury hotels such as Taj, Hyatt, and Marriott. The product range has expanded from 18 to 31 Stock Keeping Units (SKUs) across the personal care, handloom, and handicrafts categories, with additional SKUs under development. Rigorous training programs for SHG women ensure quality production, while FSSAI certification efforts uphold national food safety standards. The initiative also focuses on building market presence through participation in prestigious exhibitions and creating strategic alliances, such as those with the Agricultural & Processed Food Products Export Development Authority (APEDA) and Lulu Hypermarkets, to position itself in global markets, particularly in the Middle East.

Plans for HoH include opening experiential stores at key locations, such as Dehradun Airport and Connaught Place in New Delhi, to offer customers products and an immersive Himalayan experience. Collaborations with modern trade outlets and quick commerce platforms like Blinkit are underway to reach a broader audience. HoH's governance structure, supported by an expert Board of Directors, ensures professional management and strategic growth. With its focus on premium quality, brand-building, and community-driven economic empowerment, HoH is poised to take Uttarakhand's organic produce and artisanal handicrafts to national and international markets, creating a lasting impact on rural livelihoods and sustainability in the Himalayas. (The official e-commerce website: houseof himalayas.com)

D.6. Institutionalising and Globalising Rishikesh as a Yoga Capital

The initiative to institutionalise and globalise Rishikesh as the Yoga Capital is progressing as a key component of the broader Heritage Planning for Rishikesh and Haridwar. This project is being spearheaded by the Uttarakhand Investment and Infrastructure Development Board (UIIDB), which has recently completed a tender process for master planning, Detailed Project Report (DPR) preparation, and construction monitoring.

The selection of master planning consultants was finalised in March 2024. With this crucial step complete, work on the project is expected to commence shortly, setting the stage for Rishikesh to strengthen its global reputation as a premier destination for yoga and spiritual practices.

D.7. Progress in Adventure and Sustainable Tourism

The State's commitment to promoting adventure tourism and sustainable development is evident through several initiatives:

D.7.1. Development of New Adventure Tourism Destinations

Uttarakhand is poised to capitalise on its unique geographical features to enhance adventure sports and eco-tourism, with a strategic emphasis on private sector involvement. The State aims to develop diverse adventure tourism activities that include aero sports, paragliding, parasailing, hot air ballooning, mountain biking, hiking, mountainee-ring, rock climbing, bungee jumping, skiing, and snowboarding.

The State's rich natural heritage, with over ten wildlife sanctuaries, national parks, and a biosphere reserve, provides a robust foundation for eco-tourism. Leveraging these natural assets, Uttarakhand envisions creating or incentivising recreational facilities such as theme parks, sports complexes, and golf courses in high tourist footfall areas like Dehradun, Mussoorie, Rishikesh, and Haridwar.

By fostering partnerships with the private sector, the government seeks to host and promote adventure tourism events that attract domestic and international visitors. This approach aims to boost tourism and drive economic growth and development in the region.

D.8. Converting Defunct Bridges as Halt Areas With Basic Roadside Amenities

The Uttarakhand government has unveiled an innovative plan to revitalise abandoned bridges by converting them into restaurants and roadside amenities, boosting tourism and generating revenue. This initiative, led by the Uttarakhand Tourism and Public Works Department (PWD), addresses the challenge posed by several bridges that have become obsolete due to the construction of new highways and two-lane bridges.

For this transformative project, the PWD has identified five unused bridges along key routes, including those on the Chardham Yatra path. The selected bridges are on the Delhi-Badrinath Highway, Dehradun-Rishikesh Highway, Rishikesh- Phoolchatti Highway, Rudraprayag-Gaurikund Highway, and Kotdwar-Pauri Highway.

The project will start by developing one or two of these bridges into restaurants. This pilot phase will allow the government to evaluate the concept's success before considering expanding to additional bridges. The goal is to create unique and appealing destinations that enhance tourists' travel experience while leveraging underutilised infrastructure for economic benefits. In this scenario, a wayside amenities policy has been approved by August 2024.

D.9. Development of Tourism Spots Around Major Destinations

Uttarakhand has made significant strides in its tourism development initiatives, though some challenges remain. Several Memorandums of Understanding (MoUs) have been signed with investors to develop premium hospitality establishments across approximately 15 land parcels.

D.10. Innovative/Specialised Tourism Initiatives

Efforts are ongoing to refurbish and operate selected guesthouses owned by government agencies in Public-Private Partnership (PPP) mode. Pre-feasibility analysis and property clustering have been completed.

In specialised tourism, a Heli-tourism package for Adi Kailash has been successfully formulated and awarded to a vendor. The government is now focused on issuing RFPs for aerosports-related tourism products.

The development of religious tourism corridors in Haridwar and Rishikesh is a key priority, with heritage planning initiatives designed to preserve and enhance these sites for tourism. These initiatives are part of a broader strategy to boost tourism while safeguarding the State's unique cultural assets.

D.11. Opening of the Manaskhand Corridor in the Kumaon Region in 2025

Uttarakhand tourism department, in collaboration with the Indian Railways, will start the 'Manaskhand Corridor Yatra' in 2025 to popularise the ancient temples of the Kumaon region. For the yatra, a special train will run from Pune to Tanakpur in Pithoragarh district. The train will carry over 600 pilgrims in two batches to the famous temples of 'Manaskhand', a phrase used in ancient Hindu scriptures to refer to the Kumaon region of Uttarakhand.

The tour package to Manaskhand temples will be for 7 days and 6 nights. The pilgrims will have to alight the train in Khatima, about one km from Tanakpur from where they will be taken to the temples by road. Khatima has been chosen as the last stoppage because it has better facilities, such as hotels, than Tanakpur. As part of the tour package, the devotees will be taken to the temples and other religious places of Tanakpur, Champawat, Pithoragarh, and Almora and briefed on their mythological significance. Visits to Baleswar, Maneswar and Mayawati temples in Champawat, Hat Kalika, Patal Bhubaneswar temples in Pithoragarh, Jageswar and Golu devta temples at Chitai, Nanda Devi, Kasar Devi, Katarmal in Almora, Nanakmatta Sahib Gurudwara in Udham Singh Nagar and the Naina Devi temple in Nainital are part of the itinerary for the pilgrims.

D.12. Navgraha Circuit

The Navagraha Circuit in Uttarakhand is a spiritual tourism initiative that connects 24 ancient temples dedicated to the nine celestial deities of Hindu astrology. Key sites include the Katarmal Sun Temple in Almora, a 9th-century architectural marvel; the Shani Temple in Kharsali, known for its unique stone-and-wood construction; and the Rahu Temple in Pauri Garhwal. Other notable temples include the Guru Brihaspati Temple in Nainital and the Aditya Sun Temple in Champawat, which hosts vibrant festivals. This circuit aims to preserve Uttarakhand's cultural heritage while promoting pilgrimage tourism, offering devotees and visitors an enriching journey through the "Land of the Gods."

D.13. Completion and Operation of Ropeways

The development of ropeway projects in Uttarakhand is progressing under the National Ropeways Development Programme (Parvatmala), which aims to enhance connectivity in hilly regions through sustainable and efficient ropeway systems. Uttarakhand government has signed an MoU with the Ministry of Road Transport and Highways (MORTH) to develop several ropeways across the State.

i.   Kedarnath ropeway: The project is underway, with the DPR (Detailed Project Report) completed and tenders issued. This ropeway is expected to significantly ease the journey for pilgrims.

ii.   Hemkund Sahib ropeway: Similar to the Kedarnath project, the Hemkund Sahib ropeway has also seen progress with the DPR in place and tenders floated.

iii.   Nainital ropeway: The Nainital ropeway project is also under consideration, with the proposal being reviewed by the government of Uttarakhand in collaboration with the National Highways Logistics Management Limited (NHLML)

iv.   Haridwar ropeway: The ropeway project from Har Ki Pauri to Chandidevi has also been approved. It involves minimal forest land transfer for construction.

The Uttarakhand government has approved developing 46 new ropeway projects to boost tourism and connectivity across the State further. These projects are designed to enhance transport options in difficult terrains where conventional road networks are not feasible. New projects include greenfield ropeway developments to provide intermodal connectivity across tourist destinations in Uttarakhand.

D.14. Global Marketing of Adventure Tourism

The State has implemented measures to attract high-value tourists, particularly those interested in adventure tourism, bird watching, angling, and wildlife eco-tourism (Status: Active).

E. STATUS OF DEVELOPMENT OF NEW TOURISM DESTINATIONS

E.1. Integrated Hospitality District, Narendra Nagar
The Integrated Hospitality District in Narendra Nagar is poised to become a premier attraction. Despite some delays in land transfer to the Uttarakhand Investment and Infrastructure Development Board (UIIDB), efforts are ongoing to harness the full potential of religious and heritage tourism in Haridwar and Rishikesh. Heritage planning projects are underway to elevate these cities as major tourism hubs, while eco-tourism destinations linked with herbal and aroma tourism are being developed to align with the State's sustainability goals.

E.2. Health and Wellness Tourism
Uttarakhand is set to become a leading spiritual and wellness destination, offering visitors an opportunity to rejuvenate amidst its natural splendour. The State, renowned for its Ayurvedic treatments and serene environment, will build on its AYUSH, Yoga, and 'Dhyaan' legacy. Initiatives include accrediting wellness tourism enterprises, classifying service providers, promoting innovative wellness packages, and enhancing service quality through training and skill development.

E.3 Religious and Cultural Tourism
Known as 'Dev Bhoomi,' Uttarakhand is a revered pilgrimage destination featuring iconic sites such as the Char Dham, Panch Prayag, Hemkund Sahib, and Piran Kaliyar Sharif Dargah. The State's policy aims to enrich religious tourism with engaging packages and itineraries exploring the Ganges' origins, the Mahabharata Trail, the Story of Shiva, and the Buddhist Trail. Emphasis will also be placed on promoting Uttarakhand's rich Pahari culture through various activities and events.

E.4 Fairs and Festivals
Uttarakhand's vibrant lifestyle and cultural heritage will be celebrated through institutionalised events and a calendar of unique festivals like Butter Festival, Kandali, and Ganga Dussehra. Organisers and tour operators will be incentivised to enhance these cultural celebrations.

E.5 Events Tourism
The State plans to support 3-4 mega events annually, curated around cultural themes. It will assist local fairs throughout the year, enriching its events tourism landscape.

E.6 Arts & Crafts Tourism
Uttarakhand aims to promote indigenous arts and crafts by offering incentives, a Souvenir Policy, and marketing support. Collaboration with relevant departments will ensure that local arts receive the recognition and support they deserve.

E.7 Music & Performing Arts Tourism
Facilities for showcasing Uttarakhand's cultural heritage will be developed, including amphitheatres, auditoriums, and cultural haats. The State will collaborate with the Department of Culture to support performing arts festivals and literature events, with funding from various government schemes.

E.8 Heritage Tourism
Uttarakhand's colonial and religious monuments, such as those in Ranikhet and Nainital, will be identified and developed to enhance tourism. Master Plans will focus on heritage conservation and tourism amenities, including repurposing unused government-owned heritage properties for tourism.

E.9 MICE Tourism
Uttarakhand is positioned to become a key player in the MICE (Meetings, Incentives, Conventions, and Exhibitions) tourism sector. Cities like Dehradun, Nainital, Ranikhet, and Pithoragarh will be developed as MICE destinations, attracting domestic and international clients. The State will also develop Destination Wedding Packages to leverage its picturesque settings.

E.10 Astro Tourism
To establish Uttarakhand as a premier destination for stargazers, the 'Nakshatra Sabha' initiative will offer spectacular sky views and raise awareness about light pollution. This initiative, starting in early June from George Everest Peak, will continue until mid-2025, highlighting locations with uninterrupted starry skies such as Gurson Bugyal, Jeolikot, Kedarkantha, Munsiyari, Majhkhali, Chakrata, and Chaukori. The State's observatories and astronomy workshops will further enhance its astro-tourism offerings.

E.11 Eco/Rural Tourism
The State will collaborate with NGOs, Self Help Groups, and local stakeholders to develop rural tourism. Focus areas include building infrastructure, creating new tourism products, and promoting unique village experiences featuring tribal culture, folk music, agri-tourism, local crafts, and yoga and meditation centres.

F. CONCLUSION: TOWARDS SUSTAINABLE TOURISM
Uttarakhand's economic strategy for 2023-24 has made significant strides in enhancing infrastructure, attracting investment, and promoting sustainable tourism as a key driver of the State's economic growth. The initiatives outlined in this report underscore the State's commitment to leveraging its natural and cultural assets while ensuring that development aligns with sustainability principles.

However, some areas require further attention to realise Uttarakhand's potential as a premier tourism destination fully.

1. Recommendations for Building a Sustainable Future

1.1. Accelerate Project Implementation: While substantial progress has been made in identifying key projects and attracting investment, particularly in developing greenfield hospitality establishments, the film city, and aero sports-related tourism products, other planned initiatives require additional thrust.

1.2. Strengthen Public-Private Partnerships (PPPs): The success of tourism infrastructure development, such as the refurbishment of GMVN/KMVN guesthouses and the operation of the Institute of Hotel Management, hinges on effective public-private partnerships eco-system. The State should ensure clear communication and authority assignment to attract and retain private partners.

1.3. Strengthening the Skill and Entrepreneurship in the Tourism Sector: Uttarakhand can focus on enhancing local tourism skills through tailored programmes in collaboration with institutions like the Institute of Hotel Management (IHM) Dehradun. These programmes could train local youth in adventure tourism (rafting in Rishikesh), sustainable homestay management (Uttarastay initiative), and hospitality management specific to hill stations like Mussoorie. The State can also provide entrepreneur-ship opportunities by supporting eco-friendly ventures such as homestays, organic farm stays in Kumaon, and guided nature trails in Nanda Devi National Park.

Government owned rest houses could co-locate training centres for local youth to acquire skills in hospitality streams.

Internship programme and mentorship programmes could be started in existing and yet to be established hotels and guest houses to provide local and skilled workforce necessary for the growth of the sector.

1.4. G20 Recommendation on Tourism: Aligned with the G20 recommendations, Uttarakhand can deepen partnerships with local organisations to promote community-based tourism. For example, working with local women's self-help groups in villages like Khirsu or Mana for curated village tours where tourists can experience traditional Garhwali cuisine and farming methods. Similarly, the State's collaboration with local adventure companies (for activities like paragliding in Mukteshwar) ensures that tourism benefits local communities while maintaining ecological balance.

1.5. Enhance Marketing and Capacity Building: Uttarakhand's global outreach efforts by launching platforms like the "Uttarastay" portal must be complemented by robust marketing campaigns targeting domestic and international tourists. Additionally, capacity-building initiatives, particul-arly in the hospitality and tourism management sectors, should be scaled up to equip local communities with the skills needed to participate in and benefit from the growing tourism industry.

1.6. Use of Emerging Technology in Monitoring and Visitor Feedback Mechanism: The Uttarakhand Tourism Development Board (UTDB) could use drones and IoT to monitor sensitive tourist areas like Jim Corbett National Park to prevent overcrowding and monitor wildlife. A real-time mobile app for visitor feedback at popular sites like Auli or Rishikesh can help assess the quality of services and tourist satisfaction. These insights could directly inform improvements, making the tourism sector more responsive to visitor needs while protecting natural resources.

1.7. Promote Sustainable and Responsible Tourism: As tourism continues to grow in Uttarakhand, it is imperative to ensure that development does not come at the expense of the environment or local communities. The State should prioritise eco-friendly practices, promote offbeat destinations to reduce the burden on popular tourist spots and encourage responsible tourism through policies and incentives that align with the State's sustainability goals. Uttarakhand can promote sustainable tourism by encouraging tourists to participate in waste management drives, plantation initiatives, and eco-friendly practices. These activities contribute to environmental preservation and raise awareness among tourists about sustainable travel practices. Successful implementation of such programmes can enhance the State's reputation as a leader in responsible tourism.

1.8. Promote Setting up of a Robust EV Charging Station Network: Partner with EV charging station companies to establish a strong network of EV charging stations to accelerate use of electric vehicles by external and internal tourists. These charging stations could be co-located with existing roadside eateries, fuelling stations, parking lots of religious/heritage/cultural sites where tourists normally spend some time.

1.9. Tourist Destination Carrying Capacity and Environmental Management: Uttarakhand must actively manage tourist footfall at sensitive areas like the Valley of Flowers and Hemkund Sahib. For example, strict caps on daily visitors and compulsory online permits, similar to practices already in place for Kedarnath, can help protect these fragile ecosystems. The Chardham Yatra, which sees

a massive influx of tourists, needs updated carrying capacity studies to regulate accommodations, waste management, and transportation infrastructure, preventing environmental degradation.

1.10. Off-season Tourism Strategy: Promoting lesser-known destinations like Munsiyari for snow sports during winter or Lansdowne for monsoon retreats can reduce tourist pressure on peak-season spots. Uttarakhand could incentivise hoteliers in places like Binsar or Chopta to offer discounted packages during the off-season to attract tourists. Cultural festivals like the "Butter Festival" in Auli can be marketed as off-season highlights to maintain year-round tourist interest.

1.11. Crisis and Emergency Management or Convergence with Disaster Mitigation: Uttarakhand, prone to natural disasters, must integrate disaster preparedness into its tourism planning. This can be exemplified by creating early warning systems for floods and landslides in areas like Badrinath and Gangotri, which see heavy monsoon-induced damage. Integrating disaster response training for hotel staff in Joshimath and Rishikesh and emergency evacuation plans will ensure that tourism continues safely during crises. Coordination with the NDRF during the Chardham Yatra is a model to build upon.

1.12. Heritage Trail: A "Heritage Trail" through colonial-era landmarks in Nainital and Ranikhet could include guided tours of heritage properties like the Governor's House and the 19th-century churches. Similarly, a religious heritage trail can link Haridwar, Rishikesh, and Devprayag, providing cultural and spiritual insight into Uttarakhand's role in Hindu mythology and history. These heritage trails could be enhanced with interpretive signages, audio guides, and interactive apps for a richer tourist experience.

1.13. Ayush, Adventure, Natural, Wildlife, and Village Tourism: Uttarakhand can lead in promoting AYUSH-based wellness tourism through centres like Ananda in the Himalayas, combining yoga, Ayurveda, and spa therapies. Adventure tourism at Tehri Lake (water sports) and

Pithoragarh (paragliding) can attract thrill-seekers. In wildlife tourism, guided nature walks through the Rajaji National Park and bird-watching tours in Pangot have already established the State as a nature lover's destination. Village tourism, such as stays in the remote village of Sari (en route to Deoria Tal), offers visitors the experience of Uttarakhand's traditional farming practices.

1.14 Leverage Success Stories to Attract Investment: Uttarakhand has witnessed several tourism success stories that can serve as models for future projects. For instance, the successful implementation of the heli tourism package for Adi Kailash highlights the potential for niche tourism products in the State. These caselets should be showcased in investment pitches and marketing materials to demonstrate the viability and attractiveness of Uttarakhand as a destination for sustainable tourism investment.

2. Building on and Replicating Tourism Success in Uttarakhand

2.1. Heli Tourism in Adi Kailash: The successful introduction of heli tourism packages for Adi Kailash has not only enhanced the accessibility of this high-altitude destination but has also set a benchmark for adventure tourism in Uttarakhand. This initiative has the potential to inspire similar projects in other remote and high-altitude areas of the State.

2.2. Homestay Programme in Kumaon: The "Uttarastay" portal and the State's focus on promoting homestays have revitalised rural tourism in regions like Kumaon. These programmes have empowered local communities by providing them with direct economic benefits and preserving the region's cultural heritage.

2.3. Eco-Tourism in Corbett National Park: Corbett National Park's eco-tourism model combines wildlife conservation with sustainable tourism practices and has been a resounding success. This model can be replicated in other protected areas of Uttarakhand to promote conservation while boosting tourism.
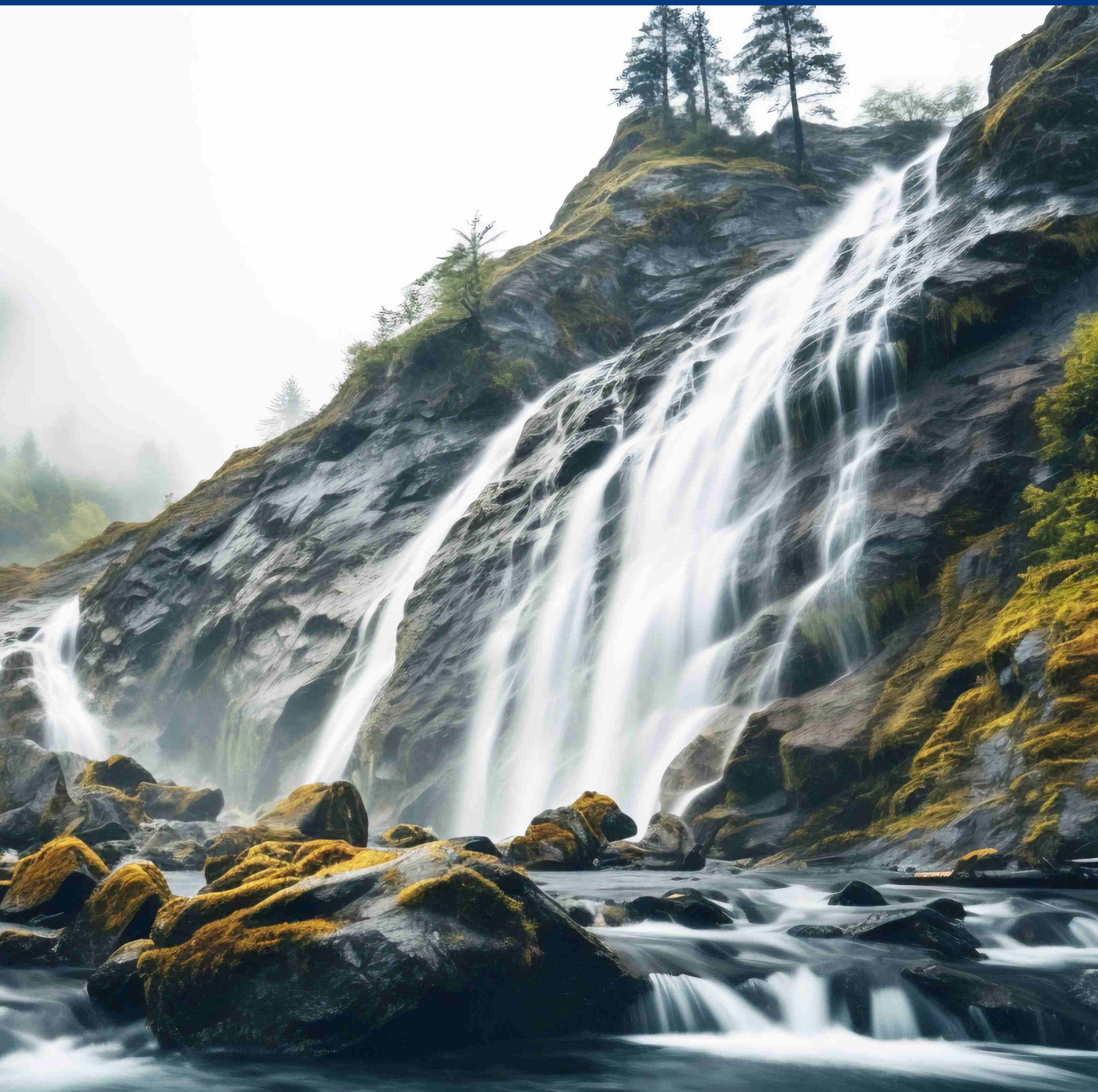
CORE & URBAN SECTORS – THE ECONOMIC PILLARS

Uttarakhand government is improving its connectivity and logistics to strengthen the core infrastructure across the State. This will have a multiplier effect in terms of employment generation, local sourcing of selected raw materials and higher local consumption levels.

The State's vision statement for the intensive development of its core sector by the year 2030 states:

"Leverage upcoming infrastructure projects and plan new projects to provide seamless connectivity, enhanced accessibility and reliable power to boost economic growth, facilitate trade and tourism, and improve the overall quality of life for the residents of the State."

To speed up the process of infrastructure development across the State, the Uttarakhand Investment and Infrastructure Development Board (UIIDB) was formed by an Act of the Government of Uttarakhand in May 2023. The Managing Director of the Board was appointed in January 2024 and two board meetings have been held since then. Key projects initiated or taken up by UIIDB to promote investment and infrastructure development in Uttarakhand are:

- **Haridwar-Rishikesh Heritage Planning** – With an aim to redevelop the Haridwar and Rishikesh townships along the lines of similar developments at Ayodhya, Varanasi, Ujjain etc., the UIIDB conducted a tender process for master planning, DPR preparation and construction monitoring activities of development projects in these 2 cities. The tendering process and selection of winning bidders was closed in March 2024. The next steps being undertaken are pre-feasibility and DPR preparation for selected development projects.
- **Master Planning of Dakpatthar** – Dakpatthar is a pristine location near the Yamuna River on the western border of Uttarakhand (neighbouring Himachal Pradesh). UIIDB has initiated the tender process to select a Master Planner and Architect for planning of

developments in this land parcel. This area is expected to become a world-class educational, hospitality and services hub in future.
- **Master Planning of Yamuna Colony** – Yamuna Colony is one of the key Government colonies in Dehradun, having an expansive area and central location. UIIDB is in the process of initiating the tender process for master planning of Yamuna Colony to fully realize its potential as a key residential and commercial hub in the city of Dehradun. The next step is to issue an RFP for on-boarding Master Planner for Yamuna Colony.
- **Empanelment of Master Planners and Architects** – Given that UIIDB would be developing several projects and land parcels within the State going forward, the Board has proposed to empanel a set of Master Planners and Architects whose services can be utilized for different projects depending on the scale and requirement of the project. In future, key land parcels such as the one at Patwadangar and HMT Ranibagh in the Kumaon region of Uttarakhand are proposed to be planned and developed leveraging Master Planners and Architects empanelled by UIIDB.

Let us now take a look one by one at the progress made by the State in the core sectors.

A-CORE SECTORS

A-1 Electricity:
The availability of electricity is important for speedy economic development of Uttarakhand.

Power demand has been outpacing its supply (or generation) over the past few years in the State. By December 2023, the electricity generated (4192 MU) was less than half of its demand (11827 MU). This is despite the fact that various schemes are under implementation for augmenting the power generation, transmission and distribution capacity in Uttarakhand.

Figure 6.1 Electricity Generation and Demand in Uttarakhand (MU)
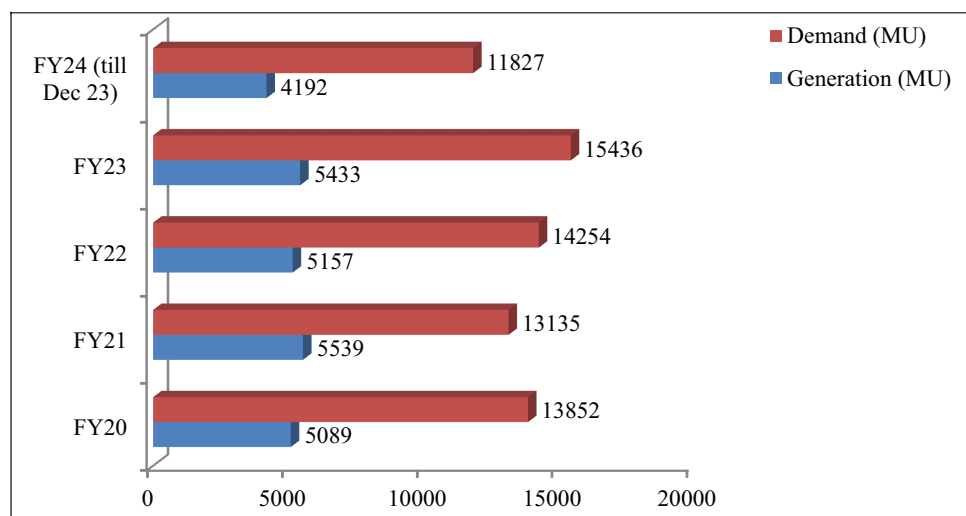
Source: Uttarakhand Power Corporation Limited, Uttarakhand Jal Vidyut Nigam Limited

According to the State's Vision for the year 2030, the total energy demand is likely to jump from 12,439 kWh in FY23 to 23,458 kWh by FY30, a hike of 89%. This growth in energy usage is envisaged to come from existing consumers as well as growing industrialisation and urbanization. The State's vision for its power sector is as summarised below:

"Meet the increasing electricity demand in a reliable, economic, and sustainable manner by leveraging renewable energy potential in the state and building a financially resilient power distribution company by the end of this decade."

To meet this growing demand, the State government will have to focus on developing its hydro and solar power potential. At present, Uttarakhand's hydro power potential is nearly 25 GW, which has to be utilised fully to develop Uttarakhand as an 'energy State' in times to come. Out of this, merely 4 GW is currently being utilised. Moreover,

there is a target to develop close to 2.5 GW of solar power potential.

Further, the Government of Uttarakhand has signed an MoU for INR 15,000 Cr with JSW Neo Energy for development of Pumped Storage Projects of up to ₹ 3,000 MW capacity, supporting the State's growing energy demand. 800 MW site allocation request has already been sent (INR ₹ 4,000 cr).

Additionally, there is a need to financially strengthen Uttarakhand Power Corporation Limited (UPCL), the State's electricity distribution company. It needs a well-thought-out capital investment plan along with a strict financial discipline to meet the growing power needs.

Another key project that needs immediate attention includes the approval and Performance Improvement Plan (PIP) sign off between State and UPCL for transformation of the State power distribution company.

Table 6.1: Initiatives for the Power Sector in Uttarakhand

Description	Status	Next Steps
PPP in 42 hydro projects of ~600 MW	LoA issued for 6 hydro projects • 14 projects sent to State Govt. for approval for bidding • 22 projects dropped due to non-feasibility	Issue of RFPs for 14 new hydro projects
PPP in 13 solar projects of ~100 MW	Estimates for energy demand from UPCL for power requirements pending	UREDA to tender out 13 projects of ~100 MW

Description	Status	Next Steps
UPCL Performance Transformation	Performance Improvement Plan (PIP) prepared • Multiple discussions held with Power & Finance Dept. b/w Jul'23 – Jul'24 • Final transformation plan submitted to Power and Finance Dept. (Jul'24) – 5 discussions held with Finance Dept. • Meeting held with Additional Chief Secretary (Oct'24) • Brief presentation prepared for CM and Cabinet approval (Oct'24) • PIP signoff between State Govt & UPCL and Detailed action plan based on PIP by UPCL yet to be done	MoU on transformation plan between UPCL and State Govt. Cabinet approval Preparation of capex plan and action plan by UPCL in line with transformation plan
Uttarakhand Pumped Storage Project Policy	• Cabinet approval (Sep'23) • Grounding of ₹ 4,000 cr by JSW Energy in 800 MW PSP site at Bansi, Almora • Interest from Hinduja Group to develop 2,500 MW PSP at ₹14,000 cr investment	JSW Energy – Final meeting between CEO and CM for issue of LoA Hinduja Group Pre – Feasibility report awaited by Hinduja Group
Uttarakhand Green Hydrogen Policy	• Draft policy submitted (Jun'24) • Dept. inputs received; revised policy submitted (Aug'24)	Cabinet approval
Uttarakhand Geothermal Policy	• Draft policy prepared (Sep'24) • Department inputs received – draft policy submitted again (Oct'24)	Department review and cabinet approval
Investor Outreach	• JSW Energy – Several meetings conducted with various stakeholders for grounding of ₹ 4,000 cr in 800 MW PSP site at Bansi, Almora • Hinduja Group - Interest to develop 2,500 MW PSP at ₹14,000 cr investment • ITC Solar – ₹100 cr – Meeting held between Sugar Mills MD and ITC to discuss leasing of land at Bazpur and Jaspur • H2 Industries – Green Hydrogen Plant - Multiple meetings held (29thJuly, 13th Aug) - Data shared with Nagar Nigam of Dehradun, Haridwar, R ishikesh and Roorkee to assess availability of 430 TPD of municipal solid or plastic waste, ~0.2 million litres per day of STP/ETP water and land parcel of ~20 acres (9th Sep) - Response from Nagar Nigam awaited	• JSW Energy – Final meeting between CEO an d CM for issue of LoA • Hinduja Group – PreFeasibility report to be submitted by Hinduja Group • ITC Solar – Agreement of lease terms between ITC and Sugar Dept. for captive solar plant • H2 Industries – Land allotment based on available land parcel for development of waste to hydrogen plant

Source: Sashakt Uttarakhand @25

Additionally, regarding the status of PPPs (public private partnerships) in 42 hydro projects of ~600 MW; 18 projects of 100 MW have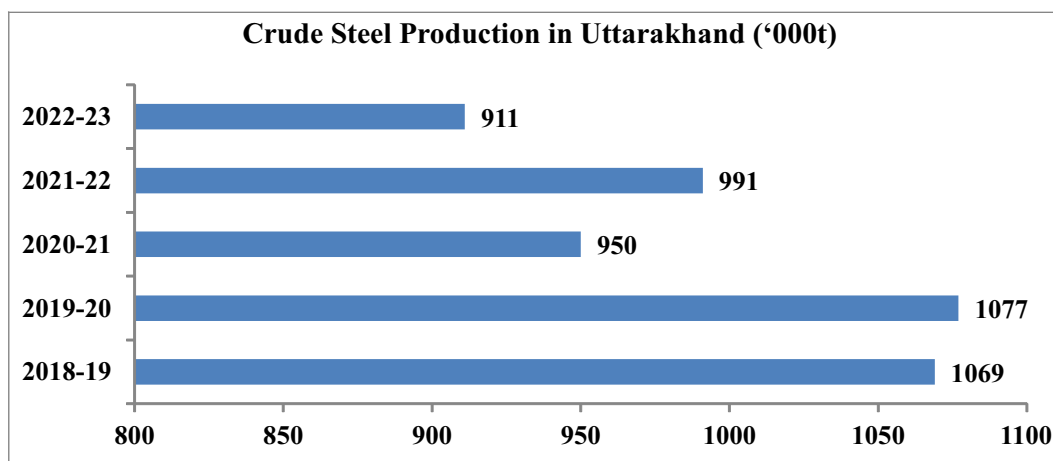 already been bid out and bids have been received against 6 out of 18 projects. As a next step, UJVNL is likely to revisit the projects which have not received any bids and re-tender them.

However, two key challenges remain that one, there is delay in agreement of Performance Improvement Plan between UPCL and State Government and two, no bids have been received against 11 hydro projects (UJVNL will revisit these projects and re-tender them).

A-2 Steel:

The crude steel production in the State of Uttarakhand was 9,11,000 tonnes during the year 2022-23. Additionally, the crude steel capacity for the same year stood at 17,09,000 tonnes, according to the data from the Joint Plant Committee, Ministry of Steel.

During the past five years, the crude steel production was noted to be highest during 2019-20 at 10,77,000 tonnes in the State.

Being a core sector, the development of iron and steel industry is a reflection of a growing economy. The State Government has been taking various steps to strengthen the steel sector such as:

- Providing preference to domestically manufactured iron and steel products
- Ensuring adequate availability of raw materials
- Enhancing the availability of domestically generated scrap

Figure 6.2 Crude Steel Production

Source: Joint Plant Committee (JPC), Ministry of Steel

- Preventing manufacturing and import of non-standardized steel and to make available quality steel products
- Steps to enhance competitiveness of India's steel sector through adjustment of Custom Duty, Anti-Dumping Duty (ADD) and Countervailing Duty (CVD)
- Higher capital expenditure to boost the production of steel

Aviation:

A strong civil aviation sector has the potential to not only enhance Uttarakhand tourism, including the popular Chardham Yatra, but also promote trade and overall economic development of the State. Further, air route in this mountainous region holds special importance for rescue operations during any disasters.

The aim of the Uttarakhand Government is to provide safe, convenient, economical and efficient air travel across the entire State. To meet this end, the State Government has not only signed an MoU (Memorandum of Understanding)

with the Central Government w.r.t. its Regional Connectivity Scheme; it has also partnered with the private sector to strengthen the air connectivity in the region.

The major objectives of the Uttarakhand Civil Aviation Development Authority (UCADA) are as follows:
- To upgrade & modernise the infrastructure at the existing airstrips & helipads.
- To prepare perspective plan for next twenty years in order to fulfil the desired objective.
- To identify & develop prospective locations for MRO facilities & Warehousing.
- To develop flying schools / aviation training institute for developing required skill-sets in the aviation industry.
- To strengthen the organisational structure of Uttarakhand civil aviation development authority.
- Encourage public private partnerships for technology advancement and new initiatives.

In terms of the policy framework, the Uttarakhand Air Connectivity Scheme was approved in February 2024 to

accelerate growth of air connectivity services within Uttarakhand and between Uttarakhand and other key regional hubs. Pilot flights under the scheme have already commenced between Dehradun and Ayodhya, Varanasi, and Amritsar. Further, Heli-services are planned in pilot mode to Pithoragarh and other destinations within Uttarakhand such as Adi Kailash. Additionally, suggestions have been proposed to provide international airport status to Dehradun airport, with initial flights to Kathmandu. The next steps are bidding out of operational pilot routes through a tender process and addition of new routes under the scheme.

Let us now take a look one by one at the status of some important areas, related to the development of the aviation sector of Uttarakhand.

Status of Expansion of Jollygrant Airport and International Operations

Jollygrant or the Dehradun airport currently operates 25 flights to various cities in India. Some of these cities are Delhi, Mumbai, Ahmedabad, Jaipur, Hyderabad, Amritsar, Lucknow, Pune, Bengaluru, and Hisar.

The State Government wishes to explore the true potential of Uttarakhand as an international destination for foreign tourists, including Non-Resident Indians (NRIs). In a move to begin international connectivity, the State Government has already extended an invitation for proposals to operate flights between Kathmandu and Dehradun. The next step is to issue a LoA to the selected flight operator. Apart from this, the State plans to set up Dehradun as a global airport, connected to many more nearby places.

Status of Expansion of Pantnagar Airport

The State Government also plans to turn Pantnagar airport into an international one. While Jolly Grant, Dehradun is the primary airport in Uttarakhand, Pantnagar is the nearest airport to Nainital, considered the gateway to Kumaon. The process of acquiring land for the expansion of Pantnagar airport is in progress.

Status of Pithoragarh Airport

The State Government has already launched an air service between Pithoragarh and Delhi. It is likely to increase the tourist traffic to Pithoragarh. It usually takes 12 to 15 hours to reach Delhi from Pithoragarh by road.

The process of acquiring land for the expansion of this airport is in progress as well.

Heliports

Out of 13 heliports, currently RCS services are operational from heliports located at the following places:
- Chinyalisaur (Uttarakashi)
- Gauchar (Chamoli)
- Koti Colony (Tehri Garhwal)
- Srinagar (Pauri)
- Haldwani (Nainital)
- Falsima Talik (Almora)
- Sahastradhara (Dehradun)

Once the heliport construction is complete, air services will start from these places as well.

Status of Establishing Helipads Across All Major Tourist Destinations (<30 mins away)

By encouraging private investment in helipads, the State aims to facilitate efficient and convenient air travel options, especially in regions with challenging terrain or inadequate connectivity.

Additionally, the strategic development of heliports in underserved areas holds the potential to transform the region's transport infrastructure. Land identification is in progress for the development of heliports across the State. The activities underway are:

- Identification of relevant sites for heliport development
- Issue of LOAs
- Start of construction (indicative timeline – July 2024)
- Commissioning and start of operations (indicative timeline – 2025)

The project is being implemented by the Uttarakhand Civil Aviation Development Authority (UCADA).

The Uttarakhand Helipads Promotion Policy was approved in November 2023 to increase the prevalence of heli-transport by establishing helipads and heliports by utilizing private land and capital. Locations for development of helipads / heliports has also been notified by the UCADA.

The key benefits of the helipads promotion policy would be:
- 50% CAPEX subsidy for private helipads
- 50% revenue sharing with landowners providing land for Helipad Development to UCADA

Status of various milestones in the civil aviation sector of Uttarakhand are listed in the table below:

Table 6.2: Milestones in the Civil Aviation Sector

Milestone	Status	Next Steps
Techno-economic viability of expansion of Dehradun Airport and Haridwar Greenfield Airport	• Concept note and scope of work prepared • Draft RFP for expansion of Dehradun Airport submitted (Oct'24)	Approval and issue of RFP
PPP DBFOT of MRO at Dehradun	• Draft RFP to be formulated	Approval and issue of RFP for MRO facility at Jolly Grant
PPP DBFOT of 7 Heliports (Jolly Grant – shortlisted)	• Land identified for 1 Heliport in phase 1 – Dehradun • Draft RFP submitted (Aug'24) Support required from Airports Authority of India (AAI) for inputs on operational feasibility of heliport	Issue of RFP and selection of developer
Retail Outlets at Sahastradhara Heliport, Dehradun	• Draft RFP submitted (Jun'24) • Review and approval from Dept. – completed (Aug'24)	Issue of RFP and selection of operator(s)
Flight operations for domestic routes under UACS – 6 routes shortlisted	• EOI conference with major players completed (Aug'24) • Draft RFP under formulation	Issue of RFP and selection of operator(s)
Flight operations for international routes under UACS – 4 routes shortlisted	• EOI conference with major players completed (Aug'24) • Draft RFP under formulation	Issue of RFP and selection of operator(s)
Empanelment of Drone Vendors	• Drone service providers empaneled across sectors • Draft term sheet submitted to Dept. (Aug'24)	Identification of use-cases from different departments and issue of RFPs for use cases to empaneled vendors
Passenger Charter for Helicopter Services in Uttarakhand	• Stakeholder consultation held (Jul'24) • Initial draft prepared and reviewed (Jul'24) • Draft charter submitted (Sep'24) • Revised charter submitted basis inputs from Dept. (Oct'24)	Cabinet approval
Operational Guidelines for Heli services operators in Uttarakhand	• Draft guidelines formulated (Sep'24)	Cabinet approval
Private Helipads and Heliport Promotion Policy	• Policy notified (Nov'23)	Selection of sites for helipad / heliport development under the Policy – In process for Jolly Grant Heliport
Uttarakhand Air Connectivity Scheme	• Scheme notified • 4 pilot routes (Dehradun-Varanasi, Ayodhya, Amritsar and Pithoragarh-Delhi) commenced • EOI issued for 7 domestic routes and 5 international routes • Draft RFP under preparation for shortlisted routes – 6 domestic routes and 4 international routes	Bidding out of operational pilot routes through a tender process and addition of new routes under the scheme Issue of RFP for new domestic and international routes
MRO Policy	• Draft policy formulated (Feb'24)	Cabinet approval

Source: Sashakt Uttarakhand @25

A-3 Roads:

Uttarakhand is known for its picturesque tourist and pilgrimage destinations, including the famous Char Dham Yatra and hill stations like Mussoorie and Nainital. These attractions attract a large number of visitors, therefore the State is exploring the multiple options to strengthen its overall tourism related roads infrastructure. It is proposed to initiate the project for increasing roads/km in the state by 2025.

Moreover, Uttarakhand Government is committed to strengthen and expand its existing road network at a great speed. One important road construction project from the overall economic development perspective is the Delhi-Dehradun Economic Corridor. Currently, the project is under construction, with expected completion by January 2025.

Some more crucial greenfield road development projects underway are the Delhi-Moradabad-Kashipur Road, Haridwar Ring Road, and Dehradun Ring Road, among others.

Taking a look at some latest statistics, by the end of December 2023, the total number of villages connected by roads in Uttarakhand were 13684.

Figure 6.3 Villages Connected by Roads
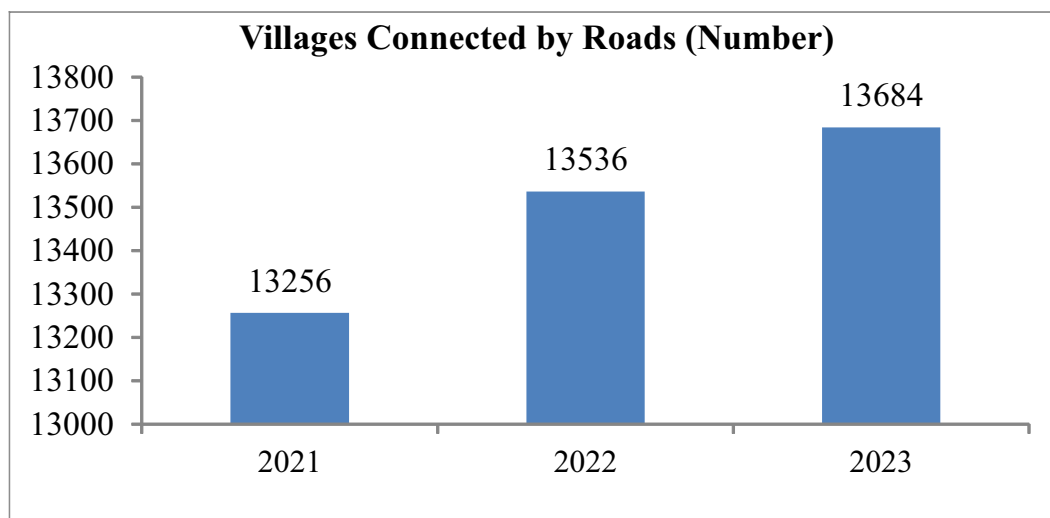
Source: Public Works Department, Uttarakhand

Length of paved roads under PWD in Uttarakhand was 26020 km till March 31, 2023. Its break-up is described in the chart below:

The total length of National Highways in Uttarakhand was 2,095 km while that of Regional Highways was 5,653 km till March 31, 2023.

Figure 6.4 Length of Paved Roads

Source: Public Works Department, Uttarakhand

Table 6.3: Milestones in the Public Works Department

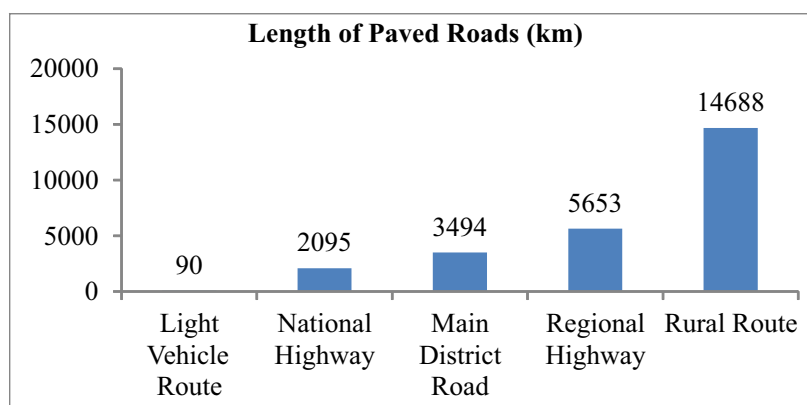| Milestone	Status	Next Steps
DBFOT of Inspection House PWD in PPP mode	• Draft RFP submitted (Sep'24) • DCA submitted (Oct'24)	To be taken up by UIIDB
Maintenance works on Performance based Maintenance Contract (PBMC) for roads in Dehradun	• Draft term sheet submitted to Dept. (Sep'24) • Initial discussions held with Dept. (Sep'24) • Road survey and finalisation of road sections by Dept. – ongoing	Formulation and issue of RFP
Duct Policy	• Draft RFP for onboarding a consultant formulated by Dept. (Aug'24) • Inputs on draft RFP shared with Dept. (Sep'24)	Issue of RFP
Funding options for 4 lane elevated corridors – Rispana & Bindal in Dehradun	• Draft proposal underway by MDDA for riverfront development and land reclamation	Assessment of MDDA proposal
Best practices for construction & maintenance of roads	• Best practices submitted to Dept. (Sep'24)	Dept. to initiate pilot projects for prefabricated plastic roads and self-healing concrete

Source: Sashakt Uttarakhand @25

Status of some important milestones under the Public Works Department of Uttarakhand are as follows:

A-4 New Rail Line:

The Rishikesh-Karanprayag Railway line is under construction by the Rail Vikas Nigam Limited (RVNL) in Uttarakhand.

This is a 125 km long rail link will be a game changer. Its completion will facilitate easy access to the pilgrimage sites in Uttarakhand. Nearby backward areas shall get developed and new business centres shall get connected. The link will significantly lower the travel time as well as travel cost.

The rail line shall be connecting the cities of Devprayag, Srinagar, Rudraprayag, Gauchar and Karnaprayag through the five districts of Dehradun, Tehri, Pauri, Rudraprayag and Chamoli.

The first section of 5.7 km between the existing Virbhadra station and Yog Nagari Rishikesh station was commissioned in March 2020. The remaining railway line from Yog Nagari Rishikesh to Karanprayag will be commissioned by December 2024.

A-5 Logistics:

Notification of Uttarakhand Logistics Policy 2023 has been issued by the State government. The Uttarakhand Logistics Policy, 2023, aims to create an integrated and efficient logistics ecosystem in the State. Overall, the Uttarakhand Logistics Policy, 2023, has the potential to make Uttarakhand a more attractive destination for businesses and investments, improve the competitiveness of businesses in the State, boost economic growth and employment generation and contribute to sustainable development.

Here are some of the key benefits it offers:
• Economic growth: The policy aims to attract investments and boost economic activity in the state.
• Employment generation: The development of the logistics sector is expected to create new job opportunities.
• Sustainable development: The policy promotes green and innovative practices in the logistics sector, contributing to sustainable development.
• Improved infrastructure: The policy focuses on upgrading and improving existing infrastructure, benefiting not just the logistics sector but also other sectors of the economy.

Further, there is a proposed construction of a Multi Modal Logistics Park (MMLP) in the pipeline, near Pathri Railway Station, Haridwar District. Close to 30 acres of land has been allocated for the purpose.

Regarding the Scheme for Upgradation of Post-Harvest Apple Logistics (SUPHAL), policy has been approved in October 2024. The next step is cabinet approval of the policy.

B   URBAN DEVELOPMENT

There is an urgent need for urban development in the State. State's urban population estimated at ~3 Mn (~30% of total population) in 2011 is expected to rise to ~8 Mn by 2050 (>50% of total population).

The State government has already implemented many policy and institutional changes during the past year. Some of the important initiatives under various stages of review/preparation/implementation are as listed below:
- Development of Greenfield Townships as satellite towns / urban centres
- Heritage Planning of Rishikesh and Haridwar
- Raising of financing by provision of additional FAR along TOD
- Levying Development Charges (EDC / IDC) in command area of marquee projects
- Uttarakhand Housing Policy
- Development of Aerocity at Jolly Grant Airport
- Institutional Restructuring / Consolidation of Development Authorities
- Development of New Integrated Admin City in Dehradun
- Tiered spatial planning across 3 planning regions in Uttarakhand

Let us take a look at each of these initiatives.

B-1 Development of Greenfield Townships as Satellite Towns / Urban Centres:

The project of development of greenfield townships as satellite towns / urban centres is being steered by the Uttarakhand Housing & Urban Development Authority. Other stakeholders proposed to be involved are Chief Town & Country Planner (CTP), Department of Town & Country Planning, Uttarakhand along with Heads of Respective Development Authorities / Regional Development & Planning Authorities.

It is estimated that close to 5 Mn people could be added to Uttarakhand's urban population by 2051. Estimates suggest that a large part of this would need to be housed by the development of greenfield urban centres, to avoid over-densification of existing habitations.

The project not only aims to provide world class municipal services and amenities to the residents; but also aims to come up as an affordable, safe and enjoyable residing option.

The project is envisaged to have a huge investment worth INR ₹ 50,000 Cr, out of which the Government will be putting in funds to the tune of INR ₹ 3000- 4000 Cr.

Eight greenfield townships across plains and hills have already been approved for assessment and development in Phase I by the Hon'ble Chief Minister and the Cabinet. List of sites is as below:

Plains – near Haridwar spur of DDEC, Haridwar; Gaulapar, Haldwani; along Rudrapur bypass, Rudrapur; Kashipur Bypass / Delhi Kashipur Road, Kashipur

Hills – Northwest of Naini Saini Airport, Pithoragarh; Belkedar to Belkandi, Pauri; near Railway line and Gauchar Airstrip, Gauchar; Sunar Gaon / Kuttha, Tehri

While the selection and approval of Phase I of Greenfield Townships has already been completed, the completion of development of trunk and social infra for Phase I townships is slated for Q3 calendar year 2026. For phase I of the project, 4 sites each were identified in the plain and hilly regions of the State. Tender process to select master planner for one of the identified site in Belkedar, Pauri-Srinagar is underway. In terms of the progress, the completed milestones are as follows:

- Phase I Greenfield Township sites approved - 4 sites in plains and 4 sites in hill towns (Jul'23)
- Site visit assessment report prepared
- RFP formulated for master planning
- Re-assessment and site visits by joint committee of UHUDA, UIIDB and T&CP (Aug-Sep'24)

The next steps are the finalisation of phase I township locations.

B-2 Heritage Planning of Rishikesh and Haridwar:

To keep pace with the rising tourist inflows at the religious cities of Rishikesh and Haridwar, the State government has planned for the required infrastructure development along with development of tourist facilities.

Being implemented by the UHUDA, the other stakeholders involved in the heritage planning of Rishikesh and Haridwar project include the Mussoorie Dehradun Development Authority (MDDA) for Rishikesh and the Haridwar-Roorkee Development Authority (HRDA) for Haridwar.

The main steps involved for this project completion are:
- Demand assessment
- Vision planning for Rishikesh and Haridwar
- Spatial plan preparation
- Integrated infrastructure plan and development strategy

- Identification and planning of infrastructure and tourism projects
- Creation of DPRs for the identified projects
- On-boarding of project implementation agencies / bidding support
- Development, management and supervision of construction works

In terms of the progress, the completed milestones are as follows:
- LoA issued to selected master planning consultants (Mar'24)
- Inception Report submitted (Apr'24)
- Stakeholder workshops conducted by respective consultants (May'24)
- Potential project concepts prepared by respective consultants (Jul'24)
- Data collection, field surveys and stakeholder consultations conducted (Sep'24)
- Final selection of development projects underway – 20 projects for Haridwar finalized worth approximately ₹ 3,000 cr, finalization of 20 projects for Rishikesh worth ₹3,000 cr are underway

The next steps being undertaken are pre-feasibility and DPR preparation for selected development projects.

B-3 Raising of Financing by Provision of Additional FAR Along TOD :

It is recommended that additional FAR (Floor Area Ratio) / densification has to be planned along major transit corridors across Uttarakhand to enable greater use of public transport / major transit corridors and for raising of financing in lieu of additional FAR granted along such corridors.

This State project is yet to be initiated. Suggested key milestones for this project are formulation of the TOD policy, identification of key transit corridors and implementation of TOD Policy along identified corridors.

B-4 Levying Development Charges (EDC / IDC) in Command Areas of Marquee Projects :

The main aim of this project is to regulate and control development around marquee projects. The implementation agency being allocated for this project is the Department of Town & Country Planning, Uttarakhand. Other stakeholders in the project execution are the respective Development Authorities. The project is expected to involve an investment of INR ₹ 1,000 Cr.

Once this project is completed, it shall help in incorporation of command areas provision in the "Uttarakhand Urban & Country Planning Act, 1973".

The project will not only ensure planned development near the marquee projects, it shall also be defining the command area for each of such projects.

The State government could demarcate the Common Area and create a master plan for future development, along with development of trunk infrastructure in such regions.

B-5 Uttarakhand Housing Policy:

The draft of the policy was formulated and has been approved in October 2024. The main aim of the policy is to properly cater to the growing housing needs of Uttarakhand. The implementation agency for the Uttarakhand Housing Policy is Uttarakhand Housing & Urban Development Authority (UHUDA). The main focus areas of the policy are as listed below:
- Redevelopment initiatives for government land to revitalize old government housing colonies and slum areas within urban centre
- Redevelopment of old and underutilized development on private land parcels
- Provision of affordable housing to accommodate the growing urban population and providing housing for all
- Senior living to cater to the requirements for the elderly population

In terms of the progress, the already completed milestones are as follows:
- Draft policy submitted (Nov'23)
- Draft policy prepared by UHUDA (Aug'24)

The next steps are to undertake amendments in the Uttarakhand Urban & Country Planning & Development Act.

B-6 Development of Aerocity at Jolly Grant Airport:

The Aerocity at Jolly Grant Airport project is being implemented by the UHUDA with other stakeholders being the Airport Authority of India (AAI) and the Uttarakhand Civil Aviation Development Authority. With an expected investment of over INR ₹ 3,000 Cr, the Aerocity is expected to be fully operational by the end of the year 2027.

Institutional Restructuring / Consolidation of Development Authorities:

Brief description	:	~155 acres of integrated mixed -use development including hospitality, IT and health project with airport expansion
Expected Investment	:	~INR ₹3,000 Cr+
Supporting policies / schemes if any	:	Sector specific benefits applicable as per eligibility defined in following policies. • Uttarakhand Tourism Policy 2023 • Uttarakhand Service Sector Policy
Implementation Model	:	PPP-DBFOT
Role of State Government	:	• Provision of unencumbered land on lease-hold basis • Ultimate owner of land • Provision of necessary approvals
Proposed Measurable Impact / KPIs	:	• Private sector investor selection and LoA for projects identified under Aerocity • Aerocity to be operational by CY27

Source: Sashakt Uttarakhand @25

The project for restructuring or consolidation of Development Authorities (DAs) is being implemented by the Uttarakhand Housing & Urban Development Authority. In line with the strategy formulated for Uttarakhand's Housing and Urban Sector Development Authorities need to restructure/consolidate as per the State's latest Housing and Urban Sector strategy w.r.t. tiered planning approach.

At present, there are a multitude of development authorities/development agencies (DAs) in the State. However, they are not able to efficiently undertake urban planning for the growing population. Most of these DAs are not financially viable.

The restructuring/consolidation concept plan has been formulated. The next steps lined up are the approval of the restructuring plan and formulation of regional plans for DA consolidation.

B-7 Development of New Integrated Admin City in Dehradun:

The project for the development of New Integrated Admin City at Dehradun is jointly being executed by the State's Public Works Department and the Uttarakhand Housing & Urban Development Authority.

The capital city of Uttarakhand, Dehradun houses important State government offices, which are currently scattered across the city. To accommodate current and upcoming Government offices at a consolidated location and thereby decongest the city, the State Government has identified a ~200 acres land parcel in Dehradun for development of an integrated administrative complex in the city.

The project on completion, would result be - built to specification offices, decongestion in Dehradun, ease of decision making with the consolidation of administrative offices and an overall push to economic development.

The envisaged investment on this project is to the tune of ₹3000 Cr. The new Admin City is proposed to get operational by the end of 2028.

Key milestones that are already achieved are the preparation of concept plan and the drafting of the RFP. The next steps lined up are the re-application for land transfer from GoI (this has been significantly delayed and needs to be accelerated) and subsequent approval and issue of RFP.

B-8 Tiered spatial planning across 3 planning regions in Uttarakhand:

The tiered spatial planning across 3 planning regions in Uttarakhand has to be done in line with recommendations of MoHUA, GoI. The project will be implemented by the Department of Town & Country Planning, Uttarakhand.

At present, planning in Uttarakhand is done at a District level (and within District level), regardless of any homogeneity in regions across Districts. Adopting a tiered planning approach has been recommended with the key elements of:

• Regional Planning: To provide an overall development framework
• Economic Master Planning: To create a comprehensive vision for the urban areas

Suggested Key Milestones: Tiered Spatial Planning

Milestone	Timeline
Amendment of "Uttarakhand Urban & Country Planning Act, 1973"	Q4 CY24
Regional Plan(s) – Issue of LoA to selected agency	Q2 CY25
Regional Plan(s) – Gazette Notification	Q1 CY26
Economic Master Plan(s) – Issue of LoA to selected agency	Q4 CY25
Economic Master Plan(s) – Gazette Notification	Q3 CY26
Master Plan(s) – Issue of LoA to selected agency	Q1 CY28
Master Plan(s) – Gazette Notification	Q1 CY29

Source: Sashakt Uttarakhand @25

- Master Planning: To provide city specific land use and zoning
- Sector / Town / Command Area Plan: To focus on a small / specific part of the city

The first step in the implementation of this project is the amendment of existing "Uttarakhand Urban & Country Planning Act, 1973" for creating provision for regional planning by Q4 2024.

The project completion is scheduled by the end of Q1 2029.

B-9 Solid Waste Management:

The hilly State consists of 90 plus Urban Local Bodies (ULBs), which are effectively handling the issue of Solid Waste Management (SWM). The decentralised method of SWM process is successfully conducted at Nathuawala ward Dehradun. The method was found to be economically sustainable and therefore it is now being adopted by many ULBs of Uttarakhand.

Uttarakhand's municipal waste generation is estimated to rise to approximately 7500 metric tons per day by 2041 (both urban and floating population), resulting in an estimated 2.7 million tons of municipal waste being generated every year.

The ULBs have adopted suitable measures for waste minimisation at source with an emphasis on the principles of 5Rs, comprising Reduce, Reuse, Recycle, Recover and Rethink; with proper systems of segregation, collection, transportation, processing, treatment and disposal in complete harmony with the environment.

While 97.23% of total solid waste was collected 'Door to Door' from the households, shops, institutes, schools and offices in the entire State; the corresponding figure for 'Waste Segregation at Source' was lower at 74.26%.

The State Government has adopted various policy measures for improving SWM throughout the State, including ramping up segregation at source. The latest

Table 6.4: Solid Waste Management (Household Wise Door to Door Collection and Source Segregation) Status

District	Name of ULB	Population	No. of Households (1)	No. of Shops (2)	No. of Institute+ School+ Offices(3)	Total (1+2+3)	% covered for Door to Door Collection	% covered for Waste Source Segregation
Almora	Almora (NPP)	39627	7820	1750	355	9925	95.00	95.00
	Ranikhet-Chiniyanaula (NPP)	5100	1075	130	9	1214	100.00	100.00
	Dwarahat (NP)	2749	794	316	16	1126	100.00	100.00
	Bhikiyasain (NP)	4214	971	259	27	1257	100.00	92.20
	Chaukhutia (NP)	4464	1090	570	31	1691	82.85	82.85
Bageshwar	Bageshwar (NPP)	25045	4808	2245	33	7086	100.00	100.00
	Kapkot (NP)	5365	1332	340	31	1703	100.00	69.94
	Garur (NP)	5002	1458	769	34	2261	69.97	43.92
Chamoli	Chamoli-Gopeshwar (NPP)	21447	5510	858	101	6469	93.45	71.20
	Joshimath (NPP)	16709	3898	499	42	4439	97.12	94.41
	Gauchar (NPP)	8864	2868	346	36	3250	100.00	92.65
	Karanprayag (NPP)	9850	2475	246	55	2776	100.00	100.00

District	Name of ULB	Population	No. of Households (1)	No. of Shops (2)	No. of Institute+ School+ Offices(3)	Total (1+2+3)	% covered for Door to Door Collection	% covered for Waste Source Segregation
Chamoli	Badrinath (NP)	2438	850	311	5	1166	100.00	100.00
	Nandprayag (NP)	2447	424	140	33	597	100.00	100.00
	Pokhri (NP)	5295	1443	310	17	1770	95.82	95.82
	Gairsain (NP)	8665	980	340	45	1365	100.00	100.00
	Tharali (NP)	4459	983	308	15	1306	100.00	100.00
	Pipalkoti (NP)	3521	856	315	16	1187	100.00	100.00
Champawat	Tanakpur (NPP)	21484	4107	759	85	4951	100.00	59.91
	Champawat (NPP)	12756	2586	755	68	3409	100.00	72.66
	Lohaghat (NPP)	7932	1330	780	43	2153	100.00	74.92
	Banbasa (NP)	6023	1150	450	6	1606	100.00	74.66
Dehradun	Dehradun (NN)	803983	167577	22600	1250	191427	94.78	93.87
	Rishikesh (NN)	106320	21261	1500	200	22961	100.00	60.06
	Vikasnagar (NPP)	24019	4518	1800	70	6388	100.00	81.79
	Mussoorie (NPP)	30118	6245	1500	50	7795	100.00	77.69
	Doiwala (NPP)	55791	15408	3316	32	18756	100.00	83.57
	Herbertpur (NPP)	10567	2878	606	44	3528	100.00	78.91
	Selaqui (NP)	16880	7754	622	59	8435	73.29	66.39
Pauri	Kotdwar (NN)	135000	32500	14625	164	47289	100.00	70.26
	Srinagar (NN)	37911	6500	1100	90	7690	100.00	96.10
	Pauri (NPP)	25435	4675	800	65	5540	100.00	100.00
	Dugadda (NPP)	2422	435	225	18	678	97.94	97.94
Haridwar	Haridwar (NN)	251197	46694	1698	125	48517	100.00	36.07
	Roorkee (NN)	182516	35102	3260	200	38562	100.00	70.95
	Manglaur (NPP)	52971	11074	2100	54	13228	100.00	29.89
	Laksar (NPP)	25754	4153	753	47	4953	100.00	77.23
	Shivalik Nagar (NPP)	33600	7502	2915	48	10465	100.00	100.00
	Landhaura (NP)	18370	3841	1055	42	4938	100.00	80.15
	Bhagwanpur (NP)	17179	3518	1167	27	4712	100.00	24.41
	Jhabrera (NP)	11183	3118	2149	7	5274	100.00	100.00
	Piran Kaliyar (NP)	19201	6948	352	20	7320	100.00	100.00
	Dhandera (NP)	23276	4490	825	18	5333	90.34	8.78
	Imlikhera (NP)	10236	2280	340	30	2650	96.60	53.96
	Padli Gurjar	21468	5452	480	25	5957	82.59	39.62
	Rampur (NP)	17821	5100	350	10	5460	82.22	12.01
	Sultanpur-Adampur (NP)	16042	2450	900	19	3369	100.00	74.53
Nainital	Haldwani (NN)	280604	53962	6692	247	60901	100.00	70.89
	Nainital (NPP)	41377	12226	1376	45	13647	100.00	56.97
	Ramnagar (NPP)	54787	7410	996	17	8423	100.00	100.00
	Bhowali (NPP)	8383	2237	865	32	3134	100.00	100.00
	Kaladhungi (NPP)	7706	1808	527	42	2377	100.00	75.47
	Lalkuan (NP)	7644	1533	485	18	2036	100.00	70.04
	Bhimtal (NP)	14882	2272	824	68	3164	100.00	89.25
Pithoragarh	Pithoragarh (NPP)	82,313	14706	3104	229	18039	100.00	75.05
	Dharchula (NPP)	7039	947	700	51	1698	97.76	95.76
	Didihat (NPP)	7969	1506	527	37	2070	100.00	92.37
	Gangolihat (NPP)	7112	1443	482	23	1948	90.09	77.26
	Berinag (NPP)	7641	1786	530	47	2363	100.00	92.47

District	Name of ULB	Population	No. of Households (1)	No. of Shops (2)	No. of Institute+ School+ Offices(3)	Total (1+2+3)	% covered for Door to Door Collection	% covered for Waste Source Segregation
Rudraprayag	Rudraprayag(NPP)	9313	2333	564	62	2959	**98.48**	**98.48**
	Kedarnath (NP)	612	75	44	1	120	**100.00**	**71.67**
	Agustmuni (NP)	6557	1398	373	14	1785	**100.00**	**100.00**
	Ukhimath (NP)	3638	796	213	14	1023	**100.00**	**100.00**
	Tilwara (NP)	2393	556	346	11	913	**100.00**	**100.00**
Tehri	Narendranagar(NPP)	6049	822	242	49	1113	**100.00**	**100.00**
	Chamba (NPP)	10457	2676	850	61	3587	**100.00**	**95.09**
	Devprayag(NPP)	3059	609	88	21	718	**100.00**	**100.00**
	MuniKiReti(NPP)	28636	6667	663	27	7357	**99.39**	**93.27**
	Kirtinagar (NP)	2517	800	120	30	950	**100.00**	**100.00**
	Ghansali (NP)	7775	950	534	38	1522	**100.00**	**100.00**
	Gaja (NP)	2098	610	171	23	804	**100.00**	**100.00**
	Lambgaon (NP)	1061	450	287	22	759	**100.00**	**100.00**
	Chamiyala (NP)	5017	1002	402	22	1426	**100.00**	**61.01**
	Tapovan (NP)	4200	673	665	4	1342	**100.00**	**100.00**
Udham Singh Nagar	Kashipur (NN)	175819	32071	6672	779	39522	**81.03**	**64.30**
	Rudrapur (NN)	175723	53553	1701	274	55528	**100.00**	**39.87**
	Gadarpur (NPP)	23289	4700	1500	34	6234	**100.00**	**81.07**
	Jaspur (NNP)	56156	15000	1498	95	16593	**100.00**	**74.69**
	Mahuakheraganj(NPP)	12584	3126	150	30	3306	**100.00**	**34.03**
	Bajpur (NPP)	31172	5160	1312	50	6522	**100.00**	**85.11**
	Kichha (NPP)	74356	12290	1428	144	13862	**100.00**	**66.12**
	Khatima (NPP)	58494	13402	2360	62	15824	**98.69**	**56.98**
	Sitarganj (NPP)	31711	8055	772	50	8877	**100.00**	**100.00**
	Nagla (NPP)	57977	7500	70	7	7577	**100.00**	**100.00**
	Sultanpur Patti (NP)	9881	1905	346	20	2271	**100.00**	**46.94**
	Kelakhera (NP)	10929	2254	220	11	2485	**100.00**	**97.18**
	Dineshpur (NP)	11843	4246	726	7	4979	**100.00**	**90.12**
	Shaktigarh (NP)	7784	1509	293	14	1816	**100.00**	**64.59**
	Nanakmatta (NP)	8487	1122	263	22	1407	**100.00**	**100.00**
	Gularbhoj (NP)	6957	1409	150	25	1584	**100.00**	**70.14**
	Mahuadabra (NP)	7326	1972	67	12	2051	**100.00**	**74.35**
	Lalpur (NP)	3975	1152	332	9	1493	**100.00**	**100.00**
Uttarkashi	Uttarkashi (NPP)	27102	6089	1150	90	7329	**100.00**	**73.71**
	Barkot (NPP)	7414	1449	550	50	2049	**100.00**	**95.17**
	Chinyalisaur (NPP)	8844	2147	871	22	3040	**100.00**	**100.00**
	Gangotri (NP)	110	165	80	10	255	**100.00**	**100.00**
	Purola (NP)	7931	1375	450	32	1857	**100.00**	**100.00**
	Naugaun (NP)	5174	624	182	37	843	**100.00**	**100.00**
Total		**3650603**	**773044**	**127273**	**7159**	**907476**	**97.23**	**74.26**

Source: Directorate of Urban Development, Uttarakhand

status of SWM with respect to 'Household Door to Door Collection' and 'Waste Segregation at Source' is shared in the tables below.

B10-Status of the GIS-based Master Plan for Uttarakhand:

The Uttarakhand Government is working on the development of a comprehensive GIS-based (Geographic Information System) master plan throughout the entire hilly State. The plan is expected to provide a strong base for infrastructure provision, improve property tax revenue realization, effective land use, spatial growth management, project planning and urban management, to the State Development Authorities. The project is divided into six stages.

The master plan is being developed keeping in mind the horizon year of 2041. It is evaluating various aspects of town planning including building structure, roads, land use, parking, industrial policy, water supply, drainage, sanitation, land sustainability in environmentally sensitive areas, and opportunities for economic growth.

In the GIS-based mapping, the directorate uses satellite images and aerial photographs for a thorough analysis of the buildings besides conducting door to door surveys to collect additional details like electricity connection, water connection, kitchens and toilets seats to get complete data of the buildings.

Table 6.5: Preparation of GIS Based Property Database and Electronic Property Tax Register Based on Door to Door Household Survey, Phase I

S. No.	ULB Name I Phase	Total Area (Sq. Km.)	Total area after Survey	Total No. of properties indicative
1	Rudrapur	55.22	53.49	36000
2	Haridwar	19.40	25.63	55000
3	Haldwani	42.59	42.59	76500
4	Dehradun	194.45	187.32	200000
	Total	**311.66**	**309.03**	**367500**

Source: Directorate of Urban Development, Uttarakhand

The work under the first phase has already been completed in the four cities of Dehradun, Haridwar, Rudrapur and Haldwani (refer Table below).

Currently, the Urban Development Directorate (UDD) of Uttarakhand is in the second phase of the GIS based survey for property mapping in ten cities of the State namely

Table 6.6: Preparation of GIS Based Property Database and Electronic Property Tax Register Based on Door to Door Household Survey, Phase II

S.N.	ULB Name II Phase	Total area (Sq. Km.)	Total area after Survey (Sq. Km.)	Total no. of properties indicative
1.	Almora	7.54	5.47	7925
2.	Chamoli-Gopeshwar	14.08	13.98	4289
3.	Rishikesh	16.00	11.72	10780
4.	Roorkee (NN)	24.17	24.17	23500
5.	Nainital	11.73	12.63	7100
6.	Pauri	42.00	9.94	5087
7.	Kotdwar (NN)	54.59	52.00	20000
8.	Pithoragarh	12.00	9.89	12500
9.	Kashipur (NN)	39.8	42.47	35170
10.	Mussoorie	64.75	76.22	6065
	Total	**286.66**	**258.49**	**132416**

Source: Directorate of Urban Development, Uttarakhand

Kotdwar, Roorkee, Almora, Nainital, Chamoli-Gopeshwar, Kashipur, Pauri, Pithoragarh and Mussoorie, Rishikesh (refer Table below).

The project for mapping process using drones (Phase I) has been duly completed across Rudrapur, Haridwar, Haldwani and Dehradun (refer Table below).

Table 6.7: Drone Area Coverage, Phase I

S. No.	ULB Name	Total Area (Sq. Km.)	Completed Area (Sq. Km.)	Remaining Area For Flying: Restricted Zone/ Cantonment periphery (Sq. Km.)	Drone Covered Area %	% Not Covered
1	Rudrapur	53.74	48.61	5.13	**90.45**	**9.55**
2	Haridwar	25.6	25.6	0	**100.00**	**0.00**
3	Haldwani	42.59	28	14.59	**65.74**	**34.26**
4	Dehradun	192.27	82.2	110.07	**42.75**	**57.25**
	Total	**314.2**	**184.41**	**129.79**	**58.69**	**41.31**

Source: Directorate of Urban Development, Uttarakhand

The status of the mapping process using drones (Phase II) is shared in the Table below

Table 6.8: Drone Area Coverage, Phase II

S.N.	Name Of ULB	Area KM²	Drone Survey and Basemap Preparation				
			DGPS survey Status	Permission for Drone Flying	Drone Flying Status	Drone Image rectification Process	Base map Preparation
1.	Kashipur	42.47	Complete	Received	Complete	In Progress	In Progress
2.	Almora	5.47	Complete	Received	Complete	Complete	Complete
3.	Nainital	12.63	Complete	Received	In Progress	In Progress	In Progress
4.	Pithoragarh	9.89	Complete	Received	In Progress	In Progress	YTS
5.	Rishikesh	11.72	Complete	Received	Complete	Complete	Completed
6.	Pauri	9.94	Complete	Received	Complete	Complete	Completed
7.	Roorkee	24.17	Complete	Received	Complete	Complete	Completed
8.	Chamoli	13.98	Complete	Received	Complete	Complete	Completed
9.	Kotdwar	52.001	Complete	Received	Complete	Complete	Completed
10.	**Mussoorie**	62.39	IP	Received	YTS	YTS	YTS

Source: Directorate of Urban Development, Uttarakhand

HEALTH, EDUCATION AND WELLNESS

ABSTRACT

Uttarakhand's development strategy emphasises improving education and healthcare to drive socio-economic progress. Despite significant advancements in educational accessibility and quality, especially at primary and secondary levels, challenges remain, particularly in rural areas. Higher education institutions still face infrastructure deficits and lack specialised programmes crucial for equipping youth with marketable skills. In healthcare, Uttarakhand has expanded its infrastructure significantly. However, ensuring adequate medical professionals and affordable services in remote areas remains challenging. The State's initiatives to attract and retain medical staff and improve health awareness are vital for addressing these gaps. Additionally, wellness tourism capitalises on Uttarakhand's natural resources, aiming for global recognition in holistic health.

Education: The development of educational infrastructure is exemplified by projects like the Education City at Dakpatthar and greenfield schools designed to offer world-class resources. Key initiatives aim to improve student-teacher ratios and vocational training through public-private partnerships. The state's efforts align with the National Education Policy 2020, focusing on quality improvement through digital platforms and industry collaborations. To strengthen higher education, Uttarakhand fosters partnerships with international institutions, incentivises establishments with policies like the Service Sector Policy 2023, and advocates for skill development aligned with market demands.

Health Sector: Significant strides have been made in healthcare, with investments in hospitals, clinics, and telemedicine services working to remedy gaps in service delivery. Nevertheless, the state needs more medical professionals in remote areas. Innovative public-private partnership models and continued infrastructure improvements aim to enhance service delivery. Holistic health initiatives like wellness tourism leverage the state's natural advantages, promoting services such as yoga and naturopathy, aligning with national trends and international demand.

Skills Development and Vocational Training : Establishing Centres of Excellence in key areas and upgrading Industrial Training Institutes by major corporations such as Tata Technologies are noteworthy strides in aligning educational outcomes with industry needs. These initiatives align with the state's goals to foster skilled youth prepared for modern job markets.

Wellness Tourism and AYUSH Integration : Uttarakhand is working towards becoming a wellness hub by integrating AYUSH (Ayurveda, Yoga, Unani, Siddha, and Homeopathy) with new-age health practices. Initiatives under the AYUSH Policy 2018 focus on setting up wellness centres near religious and tourist hotspots, promoting preventive healthcare, and leveraging the state's serene environment for wellness tourism.

Recommendations:
Despite progress, continual improvement and equitable access to high-quality healthcare and education across the state remain vital. The way forward involves expanding healthcare access in remote areas, embracing digital education, promoting AYUSH practices, and enhancing disaster preparedness. Uttarakhand can ensure inclusive growth and economic resilience for its residents by fostering industry-education linkages and investing in sustainable wellness tourism.

Expand Healthcare Access:
Strengthen the "You Quote, We Pay" scheme with flexible compensation and incentives for service longevity of medical specialists.

Enhance Digital Education:
Develop 'Centres of Excellence' in technical education, focusing on strategic locations and industry collaboration.
Create a centralised online portal and offer diverse learning options.
Provide professional development and set clear performance metrics.

Promote AYUSH and Wellness Tourism:
Integrate AYUSH in popular tourist areas with targeted marketing and digital presence.
Organise annual wellness festivals and partner with universities for research.

Strengthen Disaster Preparedness:
Scale up Aapaat Mitra and DHAMS programs with NGO partnerships and GIS mapping.
Develop mobile apps and maintain volunteer databases for quick disaster response.

Support Industry-Education Linkages:
Establish Industry Research Cells and formalise collaborations with local industries.
Incentivise student involvement and host research competitions.
Develop specialised courses and create research grants and online platforms.

7.1. INTRODUCTION

Uttarakhand's development strategy is significantly anchored in the education, health, and wellness sectors, which are pivotal in shaping a prosperous future for the state. A well-educated population is crucial for enhancing workforce participation and driving innovation. The state has made notable strides in improving educational access and quality, with various initiatives to increase enrollment rates, particularly in primary and secondary education. However, challenges persist, especially in rural areas with limited access to quality education. Higher education institutions also grapple with infrastructure deficits and lack specialised programs. Addressing these challenges is vital for equipping the youth with the skills necessary for the evolving job market and fostering a culture of continuous learning.

A healthy population is foundational to economic development. Uttarakhand has significantly expanded its healthcare infrastructure with increased investments in hospitals, clinics, and telemedicine services. Nevertheless, the state continues to face challenges in ensuring an adequate supply of medical professionals and affordable healthcare services, particularly in remote regions. Initiatives to attract and retain healthcare personnel and programs to improve health awareness are essential for addressing these gaps.

Beyond traditional healthcare, promoting wellness can enhance individual productivity and create new economic opportunities. The state can capitalise on its rich natural resources and cultural heritage to develop wellness tourism and holistic health programs, aligning with the growing global trend towards preventive health measures and lifestyle management. Initiatives aimed at promoting mental health, physical fitness, and nutrition can significantly contribute to the population's overall well-being. The report aims to analyse these sectors comprehensively, highlighting key achievements such as improved literacy rates, expanded healthcare facilities, and increased wellness programs. However, it will also address ongoing challenges, including disparities in access to education and healthcare, workforce shortages in the medical field, and the need for innovative wellness initiatives. This analysis will measure the impact of education, health, and wellness on Uttarakhand's socio-economic development. By investing in these sectors, the state can foster human capital development, improve the quality of life for its residents, and create a sustainable economic foundation. The report will offer data-driven insights for policymakers, emphasising the importance of public-private partnerships to leverage resources and expertise in these sectors. Future strategies will focus on sustainable growth and inclusivity, ensuring that all segments of the population benefit from development initiatives.

Uttarakhand has the potential to position itself as a leader in human capital development by prioritising education, health, and wellness. The state can achieve a sustainable and inclusive economic future by addressing the existing challenges and capitalising on its strengths.

7.2. EDUCATION

A. HIGHER EDUCATION

1. Development of Education City at Dakpatthar in Dehradun:

The Uttarakhand government is embarking on an ambitious project to develop an Education City at Dakpatthar, near Dehradun, to house universities and colleges of national and international reputation. This investable project is in its initiation phase, with land acquisition already completed. Situated on the banks of the Yamuna River, the designated area covers approximately 40 acres, offering a serene environment just 40 kilometres from Dehradun, making it an ideal location for an academic hub.

The government's vision for this Education City is to provide world-class educational infrastructure accommodating 3-4 universities or colleges. An investment of around ₹ 1,000 crore is expected to support the development of these institutions. The project aims to significantly boost student capacity, enhancing Uttarakhand's position as a centre for higher education. Additionally, the Education City is set to contribute to the state's economy by promoting educational tourism attracting students and visitors from across the country and beyond.

To incentivise institutions to establish campuses in Dakpatthar, the government has introduced several unique selling propositions (USPs). The land will be leased for 90 years at a subsidised rate, and the selection of institutions will be based on a 100% quality-based selection process (QBS), with no additional financial liabilities for the selected entities. Furthermore, the government will provide substantial support through its Service Sector Policy 2023, offering capital subsidies of up to 25% of the committed investment, the allocation of land from the government land bank, or a combination of both.

The establishment of this Education City is expected to transform Dakpatthar into a premier educational destination, fostering innovation, enhancing human capital, and contributing to Uttarakhand's broader goals of sustainable development.

2. Development of World-Class Higher Education Institutes:

Collaboration with international institutions is underway in the state. The Uttarakhand Private Universities Act 2023 passed and took effect on 3 January 2024. Since 2023, Uttarakhand has focused on transforming its higher education landscape with several key initiatives to develop world-class institutions. As part of its broader strategy to attract investment, Uttarakhand is actively promoting the development of greenfield universities and colleges. Several have been completed and are on-track milestones, including: Identification of greenfield sites done, investor outreach done and MoUs signed, revised Service Sector Policy approved (Mar'24) and Service Sector Guidelines approved by UIIDB EC (Aug'24).

3. Development of Greenfield K-12 Schools in Uttarakhand:

The development of greenfield K-12 schools in Uttarakhand is gaining momentum, with several projects already in the pipeline. These initiatives, primarily driven by public-private partnerships (PPP), aim to improve the state's educational infrastructure significantly. The government has identified key areas like Rishikesh and Ranibagh in Nainital for constructing these schools, which will feature modern boarding facilities to provide a comprehensive learning environment.

These projects represent a substantial investment in Uttarakhand's education sector, with each school expected to attract over ₹ 50 crore in funding. Scheduled to begin by 2024, the development of these K-12 institutions is a strategic move to enhance access to quality education, especially in rural areas where educational opportunities have historically been limited.

The introduction of greenfield schools is expected to bridge the gap in educational resources across the state, offering students from remote and underserved regions access to world-class education. By improving educational infrastructure through these projects, Uttarakhand aims to cultivate a more equitable learning environment and ensure that students from all over the state can benefit from high-quality education, further fostering social and economic growth.

4. Setting up World-Class Higher Educational Institutes:

Uttarakhand is making significant strides toward enhancing its higher education sector through a series of policies to establish world-class institutions aligned with the National Education Policy (NEP) 2020. Since 2023, the state has been implementing key measures to attract

investments and elevate the quality of higher education. These initiatives focus on creating a robust educational ecosystem, particularly in cities like Dehradun, Mussoorie, and Nainital, which already boast a strong academic infrastructure with well-known schools and universities. These hubs are envisioned as the foundation for developing world-class education zones.

The state's 'Service Sector Policy' is pivotal in this transformation, offering capital subsidies and additional incentives to encourage the establishment of new educational institutions. By providing financial support and creating a favourable business environment, Uttarakhand is positioning itself as an attractive destination for investment in higher education. The state is also fully committed to the NEP 2020's broader vision, which promotes skill development, holistic education, and global standards. A strong emphasis is placed on research, innovation, and partnerships with international universities, which will be instrumental in creating institutions capable of competing globally. This commitment to international collaboration and innovation will draw top-tier faculty and students worldwide, further enriching Uttarakhand's academic landscape.

Efforts are ongoing to strengthen the infrastructure and governance of higher education institutions in the state, aiming to make them academically competitive and attractive to students and educators globally. These initiatives set the stage for Uttarakhand to become a leading destination for higher education, fostering intellectual growth and global engagement.

Several works have been completed such as Doon & Kumaon University and Maldevta PG College shortlisted, Discussions held with Doon University & Maldevta PG College, Multiple review meetings conducted (Apr-Sep'24), Draft IDP for Maldevta P.G. College submitted (Sep'24) – Dept. review underway and ready for the following next steps, approval of model IDP for Maldevta PG College, implementation of model IDP in other identified Govt. institutes.

5.   *Quality Improvement Plan:*

The Government of Uttarakhand is taking proactive steps to improve the quality of its higher educational institutions through a series of forward-looking policies. These initiatives are focused on modernising pedagogical methods and integrating advanced digital infrastructure, in line with the National Education Policy (NEP) 2020. As one of the early adopters of NEP 2020, Uttarakhand is championing a holistic and multidisciplinary approach to education, aiming to equip students with academic knowledge and practical skills.

A key component of this transformation is integrating technology into the learning process. The state has introduced *Learning Management Systems (LMS)* to facilitate e-learning, making education more accessible and interactive. Platforms like *SWAYAM* and *SWAYAM PRABHA* have been developed to provide high-quality online courses, allowing students to learn from anywhere, thus modernising the traditional education system. These platforms offer a wide array of courses, enhancing the scope of learning beyond the confines of the classroom.

In addition, Uttarakhand is working on digitising educational resources to ensure students and faculty can access a wealth of information remotely. Initiatives like the *EDUSAT-based tele-education network* and YouTube educational channels are instrumental in providing virtual lectures and facilitating distance learning. These efforts ensure that students, particularly in remote areas, have access to the same quality of education as those in urban centres.

Moreover, programs like the *Rashtriya Uchchatar Shiksha Abhiyan (RUSA)* and *PM-USHA* support these digital infrastructure initiatives. These programs provide financial assistance for infrastructural upgrades and reforms aimed at faculty development, ensuring educators are well-equipped to deliver high-quality education in a digital-first environment.

The expected impact of these initiatives is a significant improvement in student performance metrics, as students benefit from a more interactive, flexible, and accessible learning environment. By embracing modern teaching techniques and digital tools, Uttarakhand is positioning itself as a leader in education reform, with the potential to uplift the overall quality of higher education in the state.

6.   *Overhaul of Credit System:*

Uttarakhand's education system is undergoing a significant transformation, with a comprehensive restructuring focused on overhauling the credit system. This sectoral initiative, set to take effect in July 2024, aimed to enhance educational management and streamline the enrolment process for students in upcoming semesters. The overhaul is a key part of Uttarakhand's broader efforts to align its educational framework with the National Education Policy (NEP) 2020, first implemented in the state during the 2022-2023 academic session.

The new credit system is designed to introduce flexibility, allowing students to pursue multidisciplinary education and vocational training while facilitating credit transfers between institutions. These reforms are intended to make

higher education more dynamic and adaptable, supporting students in gaining diverse skills and transitioning smoothly across different educational levels.

To implement these changes, Uttarakhand is promoting skill development programs and leveraging digital initiatives to ensure that its educational system remains inclusive and sustainable. For example, the NEP 2020's emphasis on digital universities opens doors for students to engage in online learning, which will support credit transfers and offer more flexible learning opportunities.

These reforms are also linked to enhancing employability at the higher education level. Uttarakhand aims to ensure graduates are better prepared for the workforce by linking academic courses with practical skills and job market requirements. The reforms are still in their early stages, but they represent a forward-thinking approach to creating an education system that is more adaptive to the needs of students and the evolving demands of modern society.

The expected impact of these initiatives is to make it easier for students to move between institutions, enhancing mobility and providing them with a more flexible and diversified education experience. As these reforms take shape, Uttarakhand is positioning itself as a leader in education reform, ensuring that its students are well-prepared for future challenges.

6.1. Formulation of Industry Research Cell:

Uttarakhand is taking significant steps to strengthen the link between academia and industry by establishing *Industry Research Cells (IRC)* in its higher education institutions. This sectoral initiative, aligned with the National Education Policy (NEP) 2020, aims to bridge the gap between theoretical learning and practical application, fostering a culture of innovation, collaboration and applied research across the state's universities. The IRCs encourage partnerships between educational institutions and industries, promoting research and development (R&D) that addresses real-world challenges. Universities like *Dev Bhoomi Uttarakhand University (DBUU)* and *Motherhood University* have already set up dedicated *Research and Development Cells (RDCs)* to create platforms where students and faculty can collaborate with industry leaders. These cells encourage entrepren-eurial initiatives and support research in engineering, science, and business management, ensuring that students gain hands-on experience and exposure to industry practices.

Similarly, *Hemvati Nandan Bahuguna Garhwal University* is enhancing its research ecosystem by fostering collaborations with industries, government agencies, and other academic institutions. These efforts aim to provide students and faculty with practical exposure while contributing to the state's educational advancements.

This trend of establishing IRCs and RDCs across universities is expected to boost innovation within Uttarakhand's higher education sector significantly. These initiatives are expected to increase patent filings and commercialise research outputs by promoting industry linkages and applied research. The IRCs represent a vital step in transforming Uttarakhand's universities into innovation, entrepreneurship, and industry collaboration hubs, preparing students to contribute meaningfully to the state's economy and beyond.

6.2. Setting up of E-learning Centres of Excellence (CoE):

Uttarakhand is making notable progress in enhancing e-learning capabilities within its higher education sector by establishing *Centers of Excellence (CoE)*. These *Centres of Excellence* are designed to boost technical education and e-learning, aligning with the broader goals of the National Education Policy (NEP). The government has been actively working to establish multiple CoEs, particularly in the Garhwal and Kumaon regions, where these initiatives will serve as hubs for advanced learning, focusing on both technical education and digital platforms.

The push for e-learning is part of a broader strategy to modernise education in Uttarakhand, with support from various educational and technological bodies such as the *Uttarakhand State Council for Science and Technology (UCOST)*. UCOST has been instrumental in organising events and initiatives that promote research, development, and innovation in e-learning and technology. These efforts support the NEP's emphasis on digital learning and contribute to the overall quality of education by fostering innovative teaching methodologies.By establishing these Centers of Excellence, Uttarakhand aims to make quality education more accessible through digital platforms, particularly for students in remote and underserved areas. The expected impact of these initiatives is a significant increase in remote learning participation, ensuring that students across the state can benefit from advanced educational resources without being limited by geography. The CoEs are set to transform the educational landscape by making learning more flexible, interactive, and accessible, ultimately preparing students for a more technologically driven future.

7   Investor Outreach:

Uttarakhand has made significant strides in attracting investments through its proactive efforts, as evidenced by the success of its recent investor summit. During the

summit, the state received 47 proposals and signed 30 Memorandums of Understanding (MoUs), amounting to an impressive investment total of ₹ 3,460 crores. These investments are set to boost key sectors such as tourism, renewable energy, and manufacturing, all of which play a crucial role in the state's economic growth.

The state government has been actively promoting Uttarakhand as an investment-friendly destination by organising roadshows and participating in the Global Investors Summit. These efforts have drawn attention from domestic and international investors, showcasing the state's potential in various industries.One of the key outcomes expected from these initiatives is the increased interest and commitment from multinational educational enterprises. By securing investments and educational partnerships, Uttarakhand is positioning itself as a hub for world-class educational institutions. These collaborations are expected to enhance the state's educational infrastructure and bring in global expertise, further elevating the quality of education and expanding opportunities for students across the region. So far FIITJEE – ₹ 1,000 cr – potential land parcels under evaluation by investor, Shoolini University – ₹ 150 cr – Awaiting Letter of Intent from Department.

B. PRIMARY AND SECONDARY EDUCATION

1. Progress of initiatives to improve access to quality education:

Uttarakhand has made remarkable progress in expanding access to primary and secondary education, with initiatives closely aligned with the *New Education Policy (NEP) 2020* and various central government schemes. These efforts focus on several key areas, including enhancing digital connectivity, improving school infrastructure, raising teacher quality, and increasing access to digital learning resources.

Programs such as *Samagra Shiksha Abhiyan*, *D.El.Ed.*, and the four-year integrated *B.Ed.* have played a pivotal role in driving these improvements. By focusing on holistic and inclusive education, these initiatives have strengthened the foundational aspects of education in the state, particularly in rural and underserved areas. One of the standout achievements has been the rise in school enrollment, retention, and attendance across Uttarakhand. The state's focus on digital learning and improving the quality of education has been instrumental in bridging the educational divide, ensuring that even students in remote regions have access to quality education. These initiatives enhance learning outcomes and contribute to a more equitable and inclusive education system in the state.

1(a). Number of new schools opened in preceding five years (2019-20, 2020-21, 2021-22, 2022-23 and 2023-24)

Table 7.1 highlights the progress of new schools opened in Uttarakhand from 2019 to 2024 as part of initiatives to improve access to quality education.

Table 7.1. New Schools Opened (2019-2024)

Year	New Schools Opened
2019	00
2020	00
2021	00
2022	01
2023	03

Source : Directorate of Education Department Uttarakhand

This indicates a slow start in terms of educational infrastructure expansion from 2019 to 2021. However, there was a noticeable increase starting in 2022 and 2023, reflecting a push towards improving educational access, likely driven by ongoing policy reforms and efforts like the **Samagra Shiksha Abhiyan** and NEP 2020 implementation. The increased number of schools in 2023 suggests an emphasis on addressing infrastructure gaps, particularly in rural and underserved areas. This trend also mirrors broader efforts to align with national goals for inclusive and quality education access, especially after the disruptions caused by the COVID-19 pandemic.

1(b). Improvement in student-teacher ratio in preceding five years (2019-20, 2020-21, 2021-22, 2022-23 and 2023-24)

Table 7.2 shows the Student-Teacher Ratio Improvement in Uttarakhand from 2019 to 2023.

Table 7.2: Student-Teacher Ratio Improvement in Uttarakhand

Year	Student-Teacher Ratio
2019	14:1
2020	15:1
2021	16:1
2022	15:1
2023	15:1

Source : Directorate of Education Department Uttarakhand

This data highlights the ongoing fluctuations in the studentteacher ratio over these years. A lower ratio is generally considered better for ensuring quality education, as it allows teachers to focus more on each student. The

changes in the ratio could reflect hiring trends, shifts in enrollment, or the effect of government policies aimed at improving teacher recruitment and training under initiatives like the **Samagra Shiksha Abhiyan** and the implementation of the **National Education Policy (NEP) 2020**.

The relatively stable ratio in recent years suggests efforts to maintain or improve the quality of education through more balanced class sizes. However, the ideal student-teacher ratio often depends on factors such as the educational level and region.

1C. *Changes in the curriculum for better employability in the preceding five years (2019-20, 2020-21, 2021-22, 2022-23 and 2023-24)*

In the past five years, the curriculum in Uttarakhand has undergone significant changes to improve youth employability. Major reforms have been introduced in formal and vocational education systems to align educational outcomes with market needs. This includes focusing on skill development, practical training, and creating a supportive ecosystem that fosters employability. The shift in employment from the primary sector indicates the need for curricula that emphasise technical skills and knowledge applicable to emerging industries.

The curriculum changes in Uttarakhand have focused on improving employability by incorporating practical skills, industry exposure, and career-oriented education. These changes have been implemented through vocational training, industry collaboration, STEM education, soft skills training, and entrepreneurship programs. Successful schools in Uttarakhand, such as The Doon School, Mussoorie International School, Welham Girls' School, St. Joseph's Academy, and Doon International School, have implemented these changes with positive results. The Uttarakhand State Council of Educational Research and Training (SCERT) has played a key role in these reforms, introducing vocational and technical education, emphasising digital literacy, promoting entrepreneurship, and focusing on experiential learning.

2. *Progress on initiatives to improve research and innovation in educational institutions:*

Uttarakhand has been enhancing research and innovation within its higher educational institutions. Initiatives include encouraging universities like Uttarakhand Open University to reach out to remote areas and adopt new methodologies for knowledge dissemination. Additionally, there is an emphasis on promoting evidence-based decision-making and facilitating innovation within the state's educational framework. Institutions are motivated to

prioritise research and innovation significantly to improve educational outcomes.

2 (a). Amount of funding allocated for research:

Uttarakhand has invested significantly in the agricultural sector by allocating ₹ 157 crore for research assistance to agricultural institutions. In addition, the state has earmarked a total of ₹ 296 crore for broader agriculture research and education initiatives. This financial commitment underscores the government's recognition of agriculture's vital role in the state's economy and its dedication to enhancing agricultural productivity and sustainability.

These funds aim to support various research projects focusing on improving agricultural practices, developing innovative technologies, and addressing farmers' challenges. By investing in research and education, Uttarakhand is not only fostering advancements in agriculture but also ensuring that agricultural institutions are well-equipped to provide the necessary training and resources to the farming community. This holistic approach is expected to improve agricultural outputs and enhance farmers' livelihoods across the state.

2 (b). Number of research projects undertaken:

Uttarakhand has adopted a proactive stance in promoting research and development (R&D) across various sectors, recognising the importance of innovation in driving economic growth and addressing local challenges. The *Uttarakhand State Council for Science and Technology (UCOST)* plays a pivotal role in this initiative by funding various research projects that span applied science, technology, waste management, renewable energy, health, agriculture, and disaster risk mitigation.

For the financial year 2023-24, UCOST has announced a series of R&D projects, offering substantial funding opportunities with a limit of ₹ 12 lakh for major projects and ₹ 5 lakh for minor ones. Each project can have a maximum duration of three years, allowing for in-depth exploration and development solutions to pressing issues.

In addition to UCOST's efforts, the *Uttarakhand Science Education and Research Centre (USERC)* has facilitated research opportunities for students and educational institutions. Through collaborations with esteemed organisations such as *AIIMS Rishikesh* and the *Indian Institute of Science Education and Research (IISER)*, USERC is helping to create a robust research ecosystem that supports the next generation of scientists and innovators.

Furthermore, workshops and entrepreneurship development centres are designed to enhance research capabilities in emerging fields like health, artificial intelligence (AI), and biomedical sciences. By fostering an environment of collaboration and innovation, Uttarakhand effectively leverages its natural resources to address local issues, such as healthcare challenges and climate change, while promoting technological advancements.

This comprehensive approach to R&D aims to enhance the state's scientific capabilities and ensure that the outcomes directly benefit the local population and contribute to sustainable development.

2 (c). Number of patents filed:

Uttarakhand's growing emphasis on innovation and intellectual property is underscored by its achievement of ranking 11th in patent filings, with 533 patents from the 2021-2022 period. This claim is supported by the *Intellectual Property India Annual Report for 2021-2022*, which notes a significant overall increase in patent filings nationwide.

The report highlights that India experienced a 13.57% rise in patent applications compared to the previous year, reflecting a broader trend of increased intellectual property (IP) activity among various states, including Uttarakhand. This uptick in patent filings signifies the state's commitment to fostering a culture of innovation and illustrates the growing capabilities of its research institutions and the entrepreneurial spirit among its citizens.

Uttarakhand's position in the national patent landscape emphasises supporting research and development initiatives that lead to practical applications and technological advancements. As the state continues cultivating an environment conducive to innovation, it is poised to contribute further to the country's intellectual property landscape in the coming years.

Figure 1. Number of patents filed
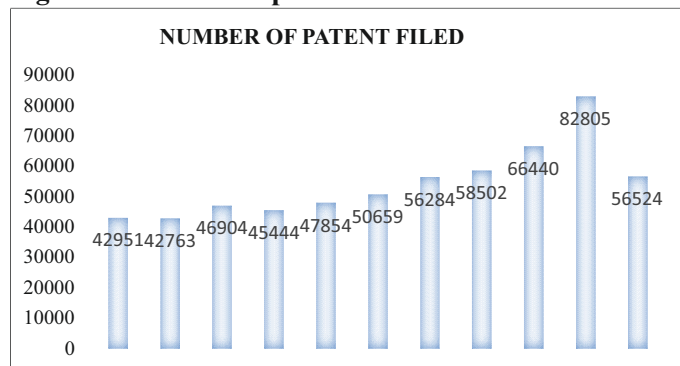
Contribution of Health and Education to Doubling State Economy:

The health and education sectors play a crucial role in Uttarakhand's economy, with their contributions varying significantly across different areas. Education services alone account for approximately 69% of the state's services sector, highlighting the importance of educational institutions and initiatives in driving economic growth. In addition, human health activities contribute around 15%, underscoring the significance of healthcare services in maintaining the population's well-being and supporting economic productivity.

Tourism also stands out as a vital contributor to Uttarakhand's economy, directly accounting for 2.96% of the Gross Value Added (GVA) and approximately 11.8% when considering its overall impact. The state's rich cultural heritage, natural beauty, and religious significance attract millions of visitors annually, further enhancing economic activities related to hospitality and services.

Recognising the importance of these sectors, the state government has prioritised health and education in its budgetary allocations, especially in light of recent investments aimed at recovery in subsidence-hit areas. By enhancing educational infrastructure and improving healthcare services, Uttarakhand aims to bolster its economy and ensure its residents' overall well-being and development. This strategic investment in critical sectors is essential for fostering sustainable growth and resilience in the face of challenges.

3. Impact of improved educational attainment on workforce productivity:

The increase in average educational attainment in Uttarakhand has positively affected workforce productivity, contributing to a more skilled and capable labour force. This growth in educational levels has fostered better employability and skill development, which are crucial for driving innovation and enhancing overall productivity. For example, higher levels of education are often associated with more efficient work processes, improved health outcomes, and greater economic opportunities for individuals.

However, the impact of these educational improvements is not uniform across the state; variations exist among different districts. While some areas have benefitted significantly from enhanced educational access and quality, others, particularly rural regions, continue to face challenges. Issues such as regional disparities in educational resources and infrastructure have resulted in

uneven productivity outcomes, limiting the potential benefits of increased educational attainment.

Despite these challenges, the overall trend indicates that improving education in Uttarakhand is vital for promoting economic growth and workforce efficiency. Addressing the barriers to quality education in rural areas remains essential for ensuring that all segments of the population can contribute effectively to the state's economic development.

C. SKILLS DEVELOPMENT AND VOCATIONAL TRAINING

1. Development of 17 Centres of Excellence (CoE) in Thrust Areas under PPP Mode:

Uttarakhand is advancing a significant *investable project* to develop 17 *Centres of Excellence (CoE)* under a public-private partnership (PPP) model. This initiative is part of a broader strategy to enhance skills and education in critical sectors, particularly in specialised areas such as electrical and manufacturing technologies. These CoEs have been established in collaboration with industry leaders like *Schneider Electric* and *Phillips*, ensuring that the training aligns closely with industry needs and standards.

The initial results from the CoEs located in *Kashipur* and *Haridwar* have been promising, with trainees successfully securing job placements that offer salaries significantly higher than the average for their peers. This success demonstrates the effectiveness of the program in equipping students with the skills required to thrive in today's competitive job market.

Looking ahead, the Uttarakhand government plans to expand this model further, targeting advanced sectors such as mechatronics, industrial robotics, and artificial intelligence (AI) for future CoEs. These centres aim to train graduates and foster a supportive ecosystem for start-ups and micro, small, and medium enterprises (MSMEs), encouraging regional innovation and entrepreneurship.

This project is integral to Uttarakhand's strategy for building a skilled workforce that meets the demands of its growing industrial sector, ultimately boosting economic growth and fulfilling the aspirations of the state's youth. Recent discussions indicate plans to establish additional CoEs, with *Sahaspur* identified as a potential key hub for these initiatives (UCOST; World Bank Blogs; Duy-heduk). There are achievements in this project like, EoI and RFP issued, LoI issued to selected bidder, LoA issued to selected bidder for machinery & equipment.

2. Upgradation of 13 Industrial Training Institutes (ITI) by TATA Technologies:

Tata Technologies is embarking on a significant *investable project* to upgrade five Industrial Training Institutes (ITIs) in Uttarakhand, with an overall investment exceeding ₹ 230 crore. This initiative includes a substantial allocation of ₹165 crore specifically designated for enhancing training facilities within these institutes.

The project aims to modernise the infrastructure and resources available at the ITIs, ensuring that they are equipped to provide high-quality vocational training that meets the industry's evolving demands. By improving the facilities and training methodologies, Tata Technologies is enhancing students' learning experience and increasing their employability in various sectors.

This investment reflects Tata Technologies' commitment to skill development in the region and aligns with Uttarakhand's broader strategy to build a robust workforce capable of supporting its growing industrial landscape. The upgrades are expected to create a more conducive learning environment, better-preparing students for careers in fields such as manufacturing, engineering, and technology.

In this investible project, ITIs have identified, proposal was submitted to Finance (Jan 2024) and received approval in Junes 2024. Proposal submitted to NABARD in July 2024 and sanctioned in September 2024.

3. Development of Centre of Excellence at GITI, Kashipur:

The *Centre of Excellence (CoE)* at the Government Industrial Training Institute (GITI) in Kashipur is a key component of a broader initiative in Uttarakhand aimed at establishing 17 CoEs in vital sectors through a Public-Private Partnership (PPP) model. This *investable project* is designed to enhance technical education and develop industry-specific skills that align with the local economy's needs.

The CoE at Kashipur provides cutting-edge training and promotes research and development, aiming to increase employability among students in industries critical to the region's growth. By collaborating with leading industry players, the CoE offers specialised courses and certifications tailored to Uttarakhand's emerging sectors, ensuring the curriculum is relevant and up-to-date.

Recent reports highlight significant progress in operationalising the CoE, indicating a strong commitment to enhancing skill development that meets regional industrial demands. While official updates suggest steady advancement in this initiative, further details and specific project milestones are anticipated through announcements from local government or industry bodies.

This project reflects Uttarakhand's strategic focus on building a skilled workforce to contribute to the state's economic development and innovation in various industries (India Education; IBG News).

4. Development of Centre of Excellence at GITI, Haridwar:

The *Centre of Excellence (CoE)* at the Government Industrial Training Institute (GITI) in Haridwar is a pivotal *investable project* that was inaugurated in September 2023, with support from World Bank funding under the *Uttarakhand Workforce Development Project (UKWDP)*. This initiative aims to tackle the challenges the local manufacturing sector faces, including the prevailing perception of traditional jobs and the limitations in skill development within the region.

Focusing on advanced manufacturing technologies and Industry 4.0 concepts, the CoE offers state-of-the-art training in essential areas such as CNC milling, CAD/CAM, and robotics technology. This modernised curriculum is designed to equip students with the skills to thrive in a rapidly evolving industrial landscape.

A key partner in this initiative, *Phillips Education*, collaborates closely with the Uttarakhand government's Skill Development Department to ensure that the training provided aligns with the specific needs of the regional industry. Beyond training, the CoE also offers job assistance through innovative platforms like the *Phillips Machinist app*, which connects trainees with industry roles across India and globally.

This initiative not only enhances the skill set of the local workforce but also aims to improve employment opportunities within the manufacturing sector, thereby contributing to the economic growth and development of Uttarakhand (Phillips Education; Gitiharidwar).

5. Development of Skill Park to house multiple skilling units:

Developing a *Skill Park* in Uttarakhand is a significant *investable project* aimed at establishing multiple skilling units as part of the state's broader skill development strategy. This initiative is primarily spearheaded by the *Uttarakhand Skill Development Mission (UKSDM)*, which has actively created *Multi-Skill Development Centres (MSDCs)* across various districts to enhance employability and stimulate industrial growth.

The Skill Park is specifically designed to offer training in diverse sectors, including IT, manufacturing, and healthcare, addressing the critical skill gaps currently in the region. By providing targeted training programs, the initiative aims to prepare the local workforce for the demands of a rapidly evolving job market (Skill Reporter; Skills Intelligence Platform).

In addition to the Skill Park, the area of Sahaspur, near Dehradun, is being developed as a major Skills Hub. This hub will feature classrooms and hostel facilities, facilitating a comprehensive learning environment for trainees. Furthermore, discussions are underway with various companies to establish Centers of Excellence in advanced fields such as mechatronics, industrial robotics, and hydraulics. This alignment with industry needs underscores the state's commitment to boosting its industrial sector while providing a skilled workforce that can meet the demands of modern industries (World Bank Blogs). This initiative reflects Uttarakhand's strategic focus on enhancing skill development as a key driver of its residents' economic growth and employment opportunities.

6. Branding, PR, and Marketing Outreach for Overseas Placement Program:

The branding, PR, and marketing outreach for the Overseas Placement Program in Uttarakhand is part of a broader strategy to position the state as a key player in global workforce placement. The Uttarakhand government collaborates with various stakeholders and promotes the state's skilled workforce through dedicated campaigns. These campaigns highlight the state's talent pool, leverage social media, and establish partnerships with overseas recruitment agencies. Furthermore, international marketing and public relations firms are engaged to enhance the program's visibility in global markets, particularly in sectors like healthcare, IT, and hospitality.

Outreach efforts also involve creating informational platforms, hosting career fairs, and building relationships with foreign employers to ensure seamless placements. This approach increases the opportunities for the state's youth to work abroad and aligns with the state's broader goal of economic development through remittances and skill enhancement. Work done so far includes, collateral for digital and print media ready, workshops ongoing at nursing and hospitality institutes through department and empanelled agencies, CM felicitation event held in May for first batch of students placed in Japan.

7. Overseas Placement Program:

Uttarakhand has implemented various initiatives to attract wellness and medical tourism investors to become a hub for AYUSH (Ayurveda, Yoga, Unani, Siddha, and Homeopathy) and wellness. The state's *AYUSH Policy 2018* was a significant step in promoting the development of wellness centres under the *Mega Industries Policy*. This

has been integrated with existing religious tourism by establishing *AYUSH Grams* (villages focused on holistic health) near pilgrimage routes and major religious towns. The state has also promoted various wellness services, including yoga, naturopathy, and Panchakarma treatments, through Public-Private Partnership (PPP) models. Several wellness centres offering these services have been set up near locations of religious significance, which have helped attract domestic and international tourists. As a result, the number of medical tourists visiting Uttarakhand has increased, contributing to the overall revenue from medical tourism.

To further boost wellness tourism, branding, public relations, and marketing outreach efforts have been directed at positioning Uttarakhand as a global wellness destination. This includes targeted campaigns to international markets, collaborations with wellness tourism bodies, and integrating wellness packages with religious tourism.

Specific figures on the revenue generated from these efforts, the number of wellness centres established, and their impact on disease prevention and healthcare cost reduction are continually being tracked, showing a positive trajectory for Uttarakhand's wellness and medical tourism (Sewa International; International Place Branding Association)
.
The state has several completions, 23 students placed for eldercare in Japan through Navis, Further, 87 students enrolled, Genrise: 15 students for nursing in Germany with pre-placement offers, Learnet: 27 students for eldercare in Japan, Envertis: 10 students for nursing in UK, NSDC: 35 students for hospitality in Japan, Proposal received from Adani Saksham.

8. *Investor Outreach :*

Uttarakhand has been actively working to attract investors through initiatives such as the **Global Investors Summit 2023**, aiming to establish the state as a hub for wellness, tourism, and other industries. The state government organised a series of **roadshows in global destinations** like London, Dubai, Singapore, and Taiwan to secure investments across key sectors, including wellness tourism (The Statesman).

Additionally, the government has focused on creating a **business-friendly environment** by simplifying regulations and offering conducive investment policies, with dedicated support for investors throughout the investment cycle (BoffinBrains). These efforts are part of Uttarakhand's broader goal to attract ₹ **2.5 lakh crore** in investments (The Statesman). The summit showcased over

200 investible projects, with a land bank of **6,000 acres** available for infrastructure and wellness centres (Invest Uttarakhand). These outreach efforts have attracted major investments, including ₹ **7,600 crore** from companies like ITC and Mahindra Holidays (The Statesman). Also, discussions ongoing with Adani Group for Skill Park / Knowledge University, initial meeting held with ITE Education Services, Singapore for Model ITI (Jun'24).

9. *Uttarakhand Overseas Employment Promotion Company:*

The Uttarakhand Overseas Employment Promotion Company has actively facilitated overseas job placements for the state's youth. The company supports initiatives like the Chief Minister's Skill Upgradation and Global Employment Scheme, which aims to equip young people with skills for international employment. So far, over 1,500 youths have secured placements under this scheme, with the government focusing on training programs to enhance the employability of candidates seeking jobs abroad (Rojgar Uttarakhand).

10. *Status of Skill Development Initiatives:*

10(a). *Types of Skill Development Programmes Offered*
The Uttarakhand Skill Development Mission (UKSDM) offers a wide range of skill development programs across various sectors to equip individuals with industry-relevant skills and enhance their employability. These programs are designed to address the specific needs of different industries and provide comprehensive training for both technical and non-technical roles. The key programs offered under UKSDM include:

1. **IT-ITeS Sector Skills Programmes:** Focus on developing skills in information technology and IT-enabled services, preparing participants for roles in software development, data management, and other IT services.
2. **Electronics Sector Skill Programmes:** Provide specialised training in electronics, enabling participants to work in areas like electronic assembly, repair, and maintenance.
3. **Beauty & Wellness Sector Skill Programmes:** Offer training in beauty, personal care, and wellness services, preparing individuals for careers in salons, spas, and wellness centres.
4. **Apparel Made-Ups Home Furnishing Sector Skill Programmes:** Focus on skills related to garment production, fashion design, and home furnishing, enabling individuals to work in the textile and apparel industry.
5. **Management & Entrepreneurship and Professional Skills Programmes:** Equip individuals with

managerial, entrepreneurial, and professional skills, fostering leadership and business acumen.

6. **Agriculture Skill Council of India Programmes:** Provide training in modern agricultural techniques to improve productivity and sustainability in the agriculture sector.

7. **Capital Goods Skill programs:** Focus on skills related to the capital goods sector, including machinery and equipment manufacturing.

8. **BFSI Sector Skill Council of India Programmes:** Offer specialised training in banking, financial services, and insurance, preparing participants for careers in the BFSI industry.

9. **Healthcare Sector Skill Council Programmes:** Provide training in healthcare services, covering roles such as medical technicians, nurses, and healthcare assistants.

10. **Logistics Sector Skill Council Programmes:** Offer skills development in logistics and supply chain management, preparing individuals for roles in transportation, warehousing, and distribution.

These diverse programs are tailored to meet the needs of various industries, ensuring that trainees are equipped with the skills required to succeed in a competitive job market. By offering these sector-specific programs, UKSDM is helping to bridge the skill gap and drive economic growth in Uttarakhand.

10(b). Number of Students Who Participated

The Uttarakhand Skill Development Mission (UKSDM) is a vital initiative designed to empower individuals by providing essential skill training across various sectors. As part of its broader objective to enhance employability and promote sustainable livelihoods, UKSDM has successfully enrolled 48,389 participants. 47,935 individuals have been trained, reflecting the mission's commitment to transforming lives through skill development. These efforts are part of a series of similar initiatives aimed at boosting the state's workforce capabilities, ensuring that a significant portion of the population is equipped with the practical skills needed to thrive in an evolving job market.

7.3   HEALTH SECTOR

Uttarakhand is improving its healthcare infrastructure through various initiatives. The Uttarakhand Health System Development Project (UKHSDP) aims to enhance access to quality healthcare. The project has focused on engaging the private sector and improving system management. Capacity-building efforts have led to the creation of disaster management authorities and a geospatial platform. Patient committees have been established to address grievances, and the MSBY scheme provides cashless health benefits. The government's industrial policy encourages investments in the healthcare sector.

1. ***Progress of Establishment of Satellite Centres for Improved Access to Super Speciality Health Services in Remote Locations:***

National Health Policy 2017 envisages the establishment of a Health and Wellness Centre (HWC) to provide universal, free, and primary health care closer to the community. Health and Wellness Centre Program was launched in 2018 to fulfil the aim. Under the programme, existing Sub- Health Centres (SHCs) & Primary Health Centres (PHCs) are being transformed into Ayushman Bharat - Health & Wellness Centres (AB-HWCs) as well as Urban Primary Health Centres (UPHCs). In the State of Uttarakhand, 1885 AB-HWCs will be operationalised by December 2022. The Health and Wellness Centres (HWCs) are envisaged to deliver an expanded range of primary healthcare services which address the basic primary healthcare needs of the entire population in their area thus expanding access, universality and equity in service delivery. The State of Uttarakhand has approved 1885 healthcare facilities to be upgraded into Health and Wellness Centres. Currently, 1422 HWCs are operationalised, with 987 Community Health Officers (CHOs) posted at SHC-HWCs.

2. ***Progress on closer coordination between health and medical education :***

Legend
- District Hq.
- PHC

0   15   30   60 Kilometers

The coordination between health and medical education in Uttarakhand is facilitated by the Department of Medical Education, which plays a key role in developing medical, nursing, and paramedical personnel to meet the state's health needs. Additionally, efforts are being made to explore climate-related opportunities in collaboration with the PPP Cell of the Uttarakhand Government, indicating ongoing progress in integrating health requirements with education.

3. Status of development and implementation of suitable PPP models for medical education and hospital infrastructure development:

The government implemented PPP-based projects to address gaps in service delivery. Generally, PPPs are collaborations between a government agency and a private-sector company to finance, build, and operate projects. Below are some details about Public-Private Partnership (PPP) models in Uttarakhand's healthcare sector:

- **Tehri:** The district hospital and Combined Health Centres (CHCs) are run by private companies.
- **Dehradun, Devprayag, and Baleshwar:** CHCs and Coronation Hospital are run by private companies.
- **Almora and Nainital:** The conversion of CHCs to PPP mode is under consideration.

These PPP-based healthcare initiatives reflect the government's effort to enhance service quality and accessibility by involving private players in managing and operating healthcare infrastructure across the state.

3. (a) Number of Hospitals and Medical Institutions Developed:

Uttarakhand has several hospitals and medical institutions, including government hospitals, medical colleges, and other facilities. Some government hospitals in Uttarakhand include the All India Institute of Medical Sciences, Uttarakhand, this hospital has 880 beds. Government Doon Medical College Dehradun, Uttarakhand, this hospital has around 750 beds. Govt Medical College, Haldwani, this hospital has 600 beds. Uttarakhand has five government medical colleges, including Government Doon Medical College, Dehradun and Government Medical College, Haldwani. Some of these hospitals provide 24/7 medical facilities in Uttarakhand. The government has implemented a PPP model to address health service challenges. The model has filled more than 95% of specialists' posts. Uttarakhand currently has 1765 Sub-Centres (SCs), 239 Primary Health Centres (PHCs) and 55 Community Health Centres (CHCs).

4. Results of Focus on Disease Prevention:

The government of Uttarakhand implements several disease prevention programs, including the National Vector Borne Disease Control Programme (NVBDCP), which focuses on preventing and controlling vector-borne diseases. Other key programs include the National Tuberculosis Elimination Programme, the National Leprosy Eradication Programme, and the National AIDS Control Programme. These initiatives aim to enhance public health and reduce the incidence of various diseases in the state.

The government of Uttarakhand implements several disease prevention programs, including:

Immunisation Programme: The government has an immunisation program that includes Sub-National Immunization Days (SNID) and Intensified Mission Indradhanush (IMI). For example, in June 2022, 1,000,074 children under five years old were given polio drops in high-risk areas.

IDSP: The Integrated Disease Surveillance Programme (IDSP) includes centre, state, and district surveillance units. IDSP also includes training for surveillance officers, a rapid response team, and other medical and paramedical staff.

Uttarakhand Tobacco Free Initiative: This initiative was implemented in schools in 2016. However, some implementation challenges included tobacco products being easily accessible near schools and tobacco use by school staff.

Other disease prevention programs include the National Vector Borne Disease Control Programme, National Tuberculosis Elimination Programme, National Programme for Control of Blindness, and National Leprosy Eradication Programme. Some more programs implemented are as follows:
- Reproductive and Child Health
- Immunization Programme
- National Vector Borne Disease Control Programme
- National Tuberculosis Elimination Programme
- National Programme for Control of Blindness
- National Leprosy Eradication Programme
- Integrated Disease Surveillance Programme
- National AIDS Control Programme
- Non-Communicable Disease (NCD)
- National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke

- National Tobacco Control Programme
- SNCU/NBSU
- Innovations Family Planning Services Project
- Kayakalp
- Quality Assurance
- Pre-Conception Pre-Natal Diagnostic Techniques
- Non-Communicable Disease (NCD)
- Family Planning
- National Programme for Palliative Care
- 108 Emergency Services
- Khushiyon Ki Sawari
- Nationa Viral Hepatatis
- Rashtriya Bal Swasthya Karyakram (RBSK)

5. Status of Expansion of Lifestyle Clinics for Lifestyle-Related Diseases:

Uttarakhand is currently working towards establishing 451 Health and Wellness Centres as part of its broader healthcare initiatives, which may include the integration of lifestyle clinics. These lifestyle clinics are envisioned to play a crucial role in addressing chronic conditions such as high blood pressure, obesity, and type 2 diabetes. Although the lifestyle clinics' exact number and operational status are not yet available, their potential impact on public health is significant.

Lifestyle clinics focus on treating chronic diseases through evidence-based practices known as lifestyle medicine. This approach emphasises improving diet, increasing physical activity, and eliminating harmful habits like tobacco use, with the goal of helping people maintain healthier lifestyles. In tandem, **Preventive Nutrition Clinics** are designed to assist individuals in adopting healthier eating habits to reduce the incidence of lifestyle-related diseases, emphasising the importance of small, sustainable dietary changes for long-term health benefits.

At the national level, institutions like the **National Center for Chronic Disease Prevention and Health Promotion (NCCDPHP)** work tirelessly to prevent chronic diseases and help people manage existing conditions by providing preventive medical care and encouraging healthier lifestyle choices. The National Centre for Disease Control (NCDC) also focuses on eliminating and eradicating diseases of public health significance. The NCDC is vital in investigating disease outbreaks and controlling epidemics. Together, these efforts, both at the state and national levels, aim to reduce the burden of chronic diseases, promote healthier living, and enhance public health outcomes through preventive and lifestyle-focused healthcare services.

6. Status of Human Resource Management Measures taken in the following priority areas:

6(a). Separate Cadre for Specialists:

The State administration has started the process to create a separate cadre for the specialist doctors in the State health department. A proposal in this regard is expected to be discussed in the State cabinet meeting soon.

Presiding over a review meeting of the health department on Tuesday, the health minister, Dr Dhan Singh Rawat, said that because of the shortage of specialist doctors, a separate cadre for specialist doctors would be created, and their retirement age would be increased to 65 years. He directed that for better operation of the schemes under the National Health Mission (NHM), 883 posts vacant at various levels should be filled. Posts of medical officers, staff nurses, lab technicians, specialist doctors, Ayush Medical officers, pharmacists, counsellors, social workers, midwifery and educators are vacant in NHM. The minister added that family members of the deceased employees would be appointed on compassionate grounds. He also directed the officers to start the process of departmental promotions on the vacant posts. The minister expressed his displeasure at the slow pace of expenditure in the budget allotted for NHM. Out of the allotted budget of ₹ 831.38 lakhs for NHM during 2022-23, only ₹ 460.40 lakh could be spent. The minister directed that a detailed working plan should be prepared for 100 per cent usage of the available budget of NHM.

The **Specialist Cadre Initiative** outlined by the National Health Systems Resource Centre (NHSRC) focuses on establishing a structured and institutionalised process to recruit and manage specialist doctors in India's public health system. The key objective is to attract qualified specialists to secondary care public health facilities and post them in positions where their expertise can be effectively utilised.

Key Components of the Specialist Cadre Initiative:

1. **Assessment of Requirements**: The initiative begins with a detailed assessment of the facility-wise and specialty-wise requirements across various levels of healthcare facilities, such as Community Health Centers (CHC), First Referral Units (FRU), Sub-District Hospitals (SDH), and District Hospitals (DH). This assessment is based on Indian Public Health Standards (IPHS) and considers futur healthcare expansion needs.
2. **Mode of Recruitment**: The recruitment strategy for specialists includes open market hiring and inducting

in-service doctors who complete postgraduate studies. Recruitment will be specialty-wise, ensuring that specialists are hired for specific needs and not in excess. Flexibility is also introduced by allowing specialists to join the service as General Duty Medical Officers (GDMOs) until a vacancy opens for their speciality.

3. **Career Path and Promotional Avenues**: Specialists are designated to secondary or higher healthcare facilities, ensuring their expertise is not wasted in primary care roles. Proportionate promotional avenues, including leadership positions, are offered to specialists who remain in public health services. A focus is placed on choosing leadership roles, such as Chief Medical Health Officers (CMHO), Directors, or District Health Officers, from candidates with public health and program implementation experience.

4. **Posting and Transfer Policy**: The policy emphasises optimal pairing and teaming of specialists to avoid isolating them in facilities where their skills may become redundant. A difficult posting, typically in a remote area, is followed by a choice posting to incentivise specialists to serve in less desirable locations. Additionally, a replacement with the same speciality must be posted while transferring a specialist to ensure continuity of care.

5. **Ensuring Optimum Performance**: States are responsible for providing good working conditions, which include adequate infrastructure, equipment, medicines, and support teams. Specialists must be allowed to focus solely on their specialities without being assigned non-specialist tasks, ensuring the effective use of their skills.

6. **Budgetary Provisions**: Compensation for specialists reflects their advanced qualifications and years of study. If state budgets are insufficient to meet these requirements, additional incentives may be provided through the National Health Mission (NHM) budget. Adequate remuneration is essential to attract and retain specialists within the public health system.

Steps for Implementing the Specialist Cadre :
1. **Cadre Mapping**: The first step involves mapping the cadre by determining how many specialists of various specialities (e.g., gynaecology, paediatrics, anesthesiology) are required at different levels (DH, SDH, CHC). This mapping is critical to ensure a balanced and equitable distribution of specialists across the state.
2. **Targeted Recruitment Drive**: A recruitment drive is launched for each speciality to fill the posts, utilising the flexibility provided under NHM's 'You quote, we pay' policy.

3. **Addressing Shortfalls**: Strategies are developed to address any shortfall in specialists, including training in-service doctors.

6(b). Number of Specialists Recruited Under the New Cadre System:

As per the data collected from the health department, there are only 515 regular specialist and super-specialist doctors against 1,254 sanctioned posts in the state– a shortage of around 59%. However, against this, the state health department is working on schemes such as offering specialist doctors attractive salaries. R Rajesh Kumar, secretary (health), said, "Against the requirement of 1,254 specialists and super-specialist doctors, we have 515 such doctors. However, we are trying to fill that gap. On contract, 37 specialist doctors through Uttarakhand Health Systems Development Project (UKHSDP – a World Bank-funded project) and National Health Mission (NHM) are working with us."

When asked that the State has just one cardiologist and barely one or two doctors for each super specialisation, he said, "Under public-private partnership (PPP) mode, Meditrina Hospital is providing around four cardiologists to run the cardiac care centre in Coronation Hospital in Dehradun. Besides, we provide MD medicine doctors short-term cardiology training from AIIMS, Rishikesh, making them capable of handling basic cardiology-related ailments."

6(c). Central HR registry:

The **Central HR Registry** in Uttarakhand is a transformative system designed to strengthen the state's healthcare sector by efficiently managing human resources. At its core, the registry serves as a comprehensive and dynamic database, meticulously tracking the deployment, qualifications, and availability of healthcare professionals such as doctors, nurses, paramedics, and specialists. By centralising this crucial information, the registry aims to ensure that the healthcare system operates with precision and responsiveness, adapting swiftly to the needs of the population.

One of the standout features of the Central HR Registry is its **real-time tracking capability**. This allows the state government to monitor healthcare personnel's exact distribution and availability across various facilities, including district hospitals, community health centres (CHCs), primary health centres (PHCs), and sub-district hospitals. This real-time data is invaluable during emergencies, ensuring that healthcare workers can be swiftly deployed to areas in critical need, such as remote locations or during disease outbreaks.

The registry also plays a pivotal role in staffing and deployment management. Matching healthcare professionals with facilities based on their specific qualifications and expertise ensures that the right people are placed in the right positions. This is particularly crucial for placing specialists in areas where their skills are in high demand, significantly improving the quality of care in underserved regions.

Another vital function of the Central HR Registry is its ability to facilitate **efficient transfers and postings**. With up-to-date information on all healthcare personnel, the system can swiftly manage the reassignment of staff when a doctor or specialist is transferred, on leave, or facing a vacancy. This helps maintain uninterrupted service, ensuring that healthcare facilities continue to function optimally without gaps in care.Beyond immediate staffing needs, the registry is instrumental in **workforce planning**. It enables the government to identify existing gaps in healthcare personnel and project future staffing requirements, ensuring that the healthcare system is prepared to meet the evolving demands of the state's growing population. This long-term perspective is crucial for building a robust healthcare system.

Additionally, the Central HR Registry monitors healthcare workers' training and capacity-building needs, ensuring they receive continuous education to keep their skills sharp and up to date. This ongoing professional development is key to maintaining a high standard of care and adapting to new medical technologies and practices.

Overall, the **Central HR Registry** enhances the **efficiency of healthcare delivery** by ensuring that healthcare professionals are deployed where they are needed most. It **reduces service gaps**, even during periods of staff shortages or transfers, guaranteeing that healthcare facilities are consistently staffed and operational. The registry also promotes **data-driven decision-making**, giving state officials real-time insights to make informed policy decisions that directly benefit public health.

Perhaps most importantly, the system fosters **transparency** in human resource management, offering a clear and comprehensive view of how healthcare personnel are being utilised, ultimately leading to better resource allocation and accountability. In essence, the Central HR Registry is a crucial tool that ensures Uttarakhand's healthcare system remains responsive, resilient, and ready to meet the needs of its citizens.

6(d). Details on how the registry is functioning, number of people registered:

The **Central HR Registry** in Uttarakhand is a visionary initiative designed to revolutionise how the state manages its healthcare professionals. Acting as a centralised database, this registry plays a pivotal role in tracking healthcare workers' deployment, availability, and movement across public health facilities, ensuring that the state's healthcare system functions efficiently and equitably.

This system's heart is the ability to track healthcare professionals in real-time. Whether it's doctors, nurses, or specialists, the registry keeps an accurate, up-to-date record of where these professionals are posted and available at any moment. This real-time tracking spans healthcare facilities across the state—from Community Health Centers (CHCs) and Sub-District Hospitals (SDHs) to larger District Hospitals (DHs). For a state like Uttarakhand, with its varied geographical challenges, this capability is critical in ensuring that healthcare professionals can be deployed swiftly where they are most needed, whether in response to emergencies or to fill staffing gaps in remote areas.

Another essential function of the registry is its ability to **streamline the deployment and transfer** of healthcare workers. With a comprehensive view of all human resources in the healthcare sector, the state can efficiently manage postings and transfers. This means that no facility is left understaffed, and specialists are deployed where their expertise is needed the most. By preventing gaps in service during staff transfers or leaves, the registry ensures that healthcare facilities continue to function smoothly, even in the face of workforce changes.

Beyond day-to-day staffing, the registry is key to ensuring optimal resource allocation across the state's healthcare system. By aligning specialists' deployment with each facility's specific needs, the registry helps prevent the underutilisation of skilled professionals. This is particularly important in underserved or rural areas, where the need for specialist care is often greater. The registry ensures that public health resources are distributed equitably, in line with the Indian Public Health Standards (IPHS), so that all citizens, regardless of where they live, have access to quality healthcare.

Monitoring vacancies and identifying recruitment needs is another significant function of the Central HR Registry. By tracking which positions are vacant and where there is a need for more specialists, the state can launch targeted recruitment efforts. This proactive approach ensures that staffing shortages do not disrupt healthcare services. It also enables the government to anticipate and address gaps in the workforce, ensuring that essential healthcare services are maintained without interruption.

The registry also plays a crucial role in long-term workforce planning. It provides valuable insights into areas with a shortage of specialists, allowing the state to focus on training and recruiting healthcare professionals in specific fields. Moreover, the system supports capacity-building initiatives, continually training healthcare workers to meet the population's evolving needs. This is particularly important as healthcare demands grow and the need for skilled professionals becomes even more critical. Managing leaves and retirements of healthcare staff is another area where the Central HR Registry shines. By tracking when specialists go on leave or retire, the system ensures that replacements are ready to step in, preventing service disruptions. This proactive management of staff transitions helps maintain a continuous flow of healthcare services, even when key personnel are unavailable.

The Central HR Registry has become indispensable in Uttarakhand's healthcare system. It has transformed how the state manages its healthcare workforce, ensuring that resources are allocated where needed most and that services continue uninterrupted. By providing real-time insights and supporting efficient staffing decisions, the registry has helped improve healthcare delivery across the state, particularly in rural and underserved regions.

Looking ahead, the potential of the Central HR Registry is immense. As the system evolves, ongoing improvements in data management, IT infrastructure, and integration with other health systems will further enhance its capabilities. With these advancements, the registry will continue to play a crucial role in ensuring that the people of Uttarakhand receive the healthcare services they need, when and where they need them, making it a cornerstone of the state's public health strategy.

Number of Nurses Registered: Uttarakhand: Auxiliary Nurse Midwives data was reported at 9,779.000 persons in 2022. This stayed constant from the previous number of 9,779.000 persons for 2021. Number of Nurses: Registered: Uttarakhand: Auxiliary Nurse Midwives data is updated yearly, averaging 1,864.000 persons from Dec 2007 (Median) to 2022, with 14 observations. The data reached an all-time high of 9,779.000 persons in 2022 and a record low of 700.000 persons in 2009. Number of Nurses: Registered: Uttarakhand: Auxiliary Nurse Midwives data remains active in CEIC Data and is reported by the Central Bureau of Health Intelligence.

6(e). Fixed Tenure Policy:

The **Fixed Tenure Policy** in Uttarakhand is a key initiative to improve the stability and effectiveness of healthcare services, especially in rural and underserved areas. This policy requires healthcare professionals to serve in one location for **2 to 3 years**, ensuring consistent care and addressing staffing shortages in challenging regions. Healthcare workers build deeper relationships with local communities by encouraging longer stays, leading to better healthcare outcomes.

The policy offers incentives like financial allowances, housing support, and preferred future postings to make rural postings more appealing. These benefits help attract professionals to remote areas and ensure their retention. Additionally, the policy guarantees replacement assurance, so healthcare services remain uninterrupted when staff transfer or leave.

A transparent transfer process further strengthens the system, ensuring that transfers are conducted fairly based on clear criteria. This helps deploy healthcare professionals where they are most needed, reducing inefficiencies.

Recent improvements include expanding the policy to cover nursing and allied health staff and using digital tools to manage postings efficiently. The policy also promotes continuous professional development through ongoing training programs for workers in rural areas.

The impact of the policy has been significant. It has enhanced stability in healthcare staffing, leading to more consistent services in underserved areas. Trust within communities has improved, and patients receive more personalised care. Healthcare professionals also benefit from career growth opportunities and incentives, encouraging them to serve in challenging areas.

The Fixed Tenure Policy has successfully addressed workforce management challenges in Uttarakhand, ensuring more reliable healthcare delivery across the state. Its focus on stability, professional development, and efficient resource allocation has greatly improved the quality of care, especially for rural populations.

6(f). Promotion of Interest of Doctors to Work in Hill Districts:

Uttarakhand government is committed to improving healthcare services for pilgrims and tourists visiting the Char Dham. To address the shortage of healthcare professionals, especially doctors in remote areas, the government has introduced a "You Quote, We Pay" initiative. This initiative offers attractive honorariums to specialists and super-specialists, including a proposed ₹6 lakh per month for super-specialist cardiologists. The state government has also established a catheterisation laboratory at Srinagar Medical College to provide

specialised cardiac care. These measures aim to bolster healthcare delivery in Uttarakhand and improve health outcomes in rural and inaccessible areas.

6(g). Specific Incentives Offered to Doctors, the Number of Doctors Who Opted to Work in Hill Districts:

The Uttarakhand government has implemented various incentives to address the shortage of doctors in the state's hill districts. One of the key measures is the "You Quote, We Pay" scheme, which allows specialist and super-specialist doctors to work on a contractual basis with competitive salaries. Under this scheme, specialist doctors are paid up to ₹ 4 lahks per month, while super-specialists receive up to ₹ 6 lahks per month, depending on the specialty. This initiative aims to attract medical professionals to remote and underserved areas.

As of 2023, 24 doctors have been appointed under this scheme, including specialists like pathologists, gynaecologists, anesthesiologists, and paediatricians. These doctors have been deployed to areas such as Chamoli, Pithoragarh, and other hill districts, where there is a critical shortage of medical staff (The New Indian Express, 9 Aug 2023; Hindustan Times, 24 Feb 2023; Garhwal Post, 1 Sep 2023).

6(h). Pay Augmentation of Nursing Staff:

The Uttarakhand government has increased the salary of nursing staff with a new pay scale for nursing officers and other benefits:

- **Nursing officers:** The pay scale for nursing officers in Uttarakhand is between ₹ 44,900 and ₹ 1,42,400 per month, according to the Level 7 pay guidelines of the Seventh Pay Commission. This salary increases with experience and promotion and includes allowances like TA, DA, and HRA.
- **Staff nurses:** The salary for staff nurses is based on the central government pay matrix and the Seventh Pay Commission criteria. The pay scale is generally between ₹ 35,000 and ₹ 44,500 per month and can be higher in some departments. Staff nurses also receive perks like dearness allowance and HRA.
- **UBTER staff nurses:** The salary for UBTER staff nurses is in pay band 2, ₹ 9300-34800, with a grade pay of ₹ 4600.

6(I). Details on how nurse's pay was augmented, impact on nurse recruitment and retention:
A study by Panchal, Sharma, Sharma, & Rani (2022) in AIIMS has shown that most permanent nursing staff are significantly satisfied. However, the satisfaction level of temporary or contractual nursing staff is low.

7. Progress of Aapaat Mitra (incentive for accident support), DHAMS (High Altitude Medical Support) approaches:

The Aapaat Mitra program, aimed at creating a volunteer force for disaster response, is progressing in Uttarakhand. The scheme involves training local volunteers to handle emergencies, including medical situations during accidents, especially in disaster-prone regions like the hills. The state has been working on scaling the program to cover more districts, with trained volunteers receiving life and medical insurance, as well as emergency responder kits. This initiative helps improve local preparedness and rapid response capabilities in emergencies (NDMA Aapda Mitra).

Regarding DHAMS (High Altitude Medical Support), this approach focuses on tackling health challenges in high-altitude areas, which are common in Uttarakhand. The Indian Army and institutions like AIIMS collaborate to develop better medical protocols for high-altitude sicknesses, such as acute mountain sickness and high-altitude pulmonary edema. This collaboration is expected to result in specialised healthcare interventions for personnel and civilians in these regions (The New Indian Express, 9 Dec 2023). These efforts improve the region's response to medical emergencies, both in everyday accidents and large-scale disasters.

8. Details on the Aapaat Mitra and DHAMS approaches to the impact of these programs (e.g., reduction in accident response time, improved medical care in high altitude areas):

The Aapaat Mitra program in Uttarakhand is a pioneering community-based disaster response initiative that empowers local volunteers to handle emergencies like accidents, landslides, and floods. These volunteers, known as Aapaat Mitras, are trained in essential life-saving skills, such as basic first aid, search and rescue techniques, and CPR. Equipped with responder kits containing first aid supplies and basic rescue equipment, they are prepared to act quickly during crises.

A key feature of the program is its focus on training volunteers in disaster-prone areas, particularly in remote and high-risk regions where official responders may face delays. Thousands of volunteers across Uttarakhand have been trained, ensuring communities are better equipped to respond to emergencies. This has significantly reduced response times, especially in remote hill districts with limited access to healthcare facilities. Volunteers provide immediate care, stabilising patients until professional help arrives, thus preventing greater loss of life.

The Aapaat Mitra initiative fosters a strong sense of community preparedness, empowering locals to act swiftly in emergencies, reducing the impact of disasters, and mitigating damage to life and property. This grassroots involvement has been invaluable in making disaster response more efficient and localised.

Complementing Aapaat Mitra is the DHAMS (High Altitude Medical Support) program, which addresses the unique medical challenges in Uttarakhand's high-altitude regions. A collaboration between state health authorities, the Indian Army, and medical institutions like AIIMS, DHAMS focuses on improving care for conditions like acute mountain sickness (AMS), high-altitude pulmonary edema (HAPE), and high-altitude cerebral edema (HACE)—common risks faced by both residents and travellers in mountainous areas.

Key features of DHAMS include research and protocol development in collaboration with AIIMS and Armed Forces Medical Services, ensuring better treatment for altitude-related conditions. Specialised medical teams are deployed in high-altitude areas during peak travel seasons, such as pilgrimages to Kedarnath and Badrinath, and portable medical units provide immediate care in emergencies, ensuring timely medical assistance even in remote locations.

The impact of DHAMS has been profound, resulting in a reduction in mortality rates due to altitude sickness and related conditions. By improving the accessibility of medical care and enhancing the skills of healthcare personnel, the program has significantly improved public safety in high-altitude areas.

Aapaat Mitra and DHAMS have transformed Uttarakhand's emergency and medical response capabilities. These initiatives have reduced fatalities and strengthened communities' resilience in remote and high-risk areas, contributing to a safer and more prepared state.

9. *Progress on Convergence with AYUSH:*

9(a). *Explain what is meant by convergence with AYUSH, specific examples of convergence initiatives*

The convergence with AYUSH represents a transformative approach in Uttarakhand, merging traditional Indian systems of medicine-such as Ayurveda, Yoga, Unani, Siddha, and Homeopathy-with modern healthcare services. This integration aims to promote a holistic approach to health and wellness, harnessing the strengths of both systems to improve public health outcomes.

One of the key objectives of AYUSH convergence is to provide comprehensive healthcare. By integrating traditional medicine with conventional health services, the government seeks to offer preventive, promotive, and curative healthcare in an all-encompassing manner. This strategy not only enhances accessibility but also ensures that patients receive a well-rounded approach to their health needs.

Another vital aspect is the focus on cost-effective solutions. Traditional medicine often provides affordable treatments for common ailments, helping alleviate the healthcare system's burden. By incorporating these methods, the government can ensure that essential healthcare services remain within reach for all citizens.

Moreover, there is a strong emphasis on the promotion of wellness. By encouraging lifestyle modifications and preventive care through practices like Yoga and Ayurveda, the government aims to foster better health and well-being among the population. This proactive approach is crucial at a time when lifestyle-related health issues are on the rise.

Uttarakhand has launched several specific initiatives to further AYUSH convergence. One notable effort is the integration of AYUSH clinics within Primary Health Centres (PHCs) and district hospitals. This initiative allows patients to access both modern and traditional healthcare services under one roof, creating a seamless experience that fosters a holistic approach to treatment.

Additionally, the state has embraced Ayurveda tourism, promoting health tourism by offering AYUSH-based wellness treatments. With its rich biodiversity, Uttarakhand is ideal for developing Ayurvedic and herbal healthcare services, especially in renowned destinations like Rishikesh and Haridwar. This boosts the local economy and attracts visitors seeking holistic wellness experiences.

As part of India's national Ayushman Bharat scheme, Uttarakhand has established AYUSH Health and Wellness Centres to provide affordable, preventive care. These centres are designed to offer a range of treatments, including Panchakarma, Yoga therapies, and naturopathy, alongside modern medical services, ensuring a comprehensive approach to health.

Furthermore, the state is leveraging traditional medicine to tackle the growing prevalence of lifestyle diseases such as diabetes and hypertension. By setting up Yoga camps and Ayurvedic clinics, Uttarakhand promotes healthy living and utilises herbal remedies to manage chronic conditions, empowering citizens to take charge of their health.

These convergence efforts in Uttarakhand bridge the gap between traditional and modern medicine and create a more holistic and accessible healthcare system for its residents. By blending these approaches, the state is paving the way for a healthier future, where the wisdom of ancient practices complements the advancements of modern science.

10. Progress on establishing the State as the Wellness Hub as Envisaged in AYUSH Policy 2018 and implementation of the State cabinet decision (May 2017) to bring AYSUH and Wellness Centres under Mega Industries Policy:

The Government of Uttarakhand is progressing toward its goal of establishing the state as a wellness hub under the AYUSH Policy 2018. The state has taken several initiatives, including implementing the 2017 cabinet decision to bring AYUSH and Wellness Centres under the mega industries policy. These initiatives focus on integrating wellness tourism, promoting Ayurvedic treatments, and encouraging the cultivation of medicinal herbs. Some notable developments include:

1. **Wellness and AYUSH Centres**: Uttarakhand has been actively setting up AYUSH Health and Wellness Centers across the state. By 2020, the Ministry of AYUSH had approved the establishment of 200 such centres, focusing on rural and remote areas. These centres aim to provide comprehensive health services by integrating traditional healthcare practices like Ayurveda, Yoga, and Naturopathy with modern health systems.
2. **Incentives for Wellness Industry**: The state offers financial assistance, including up to 50% capital subsidy for wellness resorts and centres focusing on Ayurveda, Yoga, and Naturopathy. A 5% financial incentive is provided to promote the establishment of these centres in less developed areas (categorised as Category B and C) under the State Tourism Policy.
3. **Herbal Cultivation and Marketing**: A core aspect of the AYUSH policy is promoting the cultivation of high-quality Ayurvedic herbs. The government is encouraging public-private partnerships for establishing cold storage facilities and facilitating the marketing of medicinal plants. A platform is being developed to link farmers and suppliers with drug manufacturers, which will benefit the state's herbal economy.
4. **Training and Certification**: Efforts are underway to train AYUSH professionals and certify wellness services to meet international standards. The government is working to standardise the quality of AYUSH products by introducing the AYUSH Premium Mark and providing capital assistance to

AYUSH manufacturing units for upgrading their facilities.

These steps align with the broader vision to position Uttarakhand as a leading destination for wellness and AYUSH tourism, benefiting from the state's natural resources and traditional knowledge systems (Drishti IAS, 9 Jan 2024; Projects Today, 15 Dec 2020).

11. Details on the initiatives taken to establish the state as a wellness hub, number of AYUSH and Wellness Centers opened:

Uttarakhand is establishing itself as a wellness hub through various initiatives under the AYUSH Policy 2018. Key initiatives include:
- **Opening of AYUSH Health and Wellness Centers:** The state has opened 200 centres offering traditional therapies in both urban and rural areas.
- **Integration with Mega Industries Policy:** Financial incentives are provided to businesses focusing on wellness and AYUSH practices, encouraging investment in wellness tourism.
- **Herbal Cultivation and Promotion:** Uttarakhand promotes medicinal herb cultivation and has developed platforms to connect growers with manufacturers.
- **Training and Capacity Building:** The state trains and certifies AYUSH practitioners to meet international standards.
- **Public-Private Partnerships:** Collaborations with private entities support the operationalisation of wellness centres.

Uttarakhand is positioning itself as a leader in wellness tourism and traditional healthcare through these initiatives.

12. Schemes designed, implemented and progress made in attracting investors in the wellness sphere:

Uttarakhand has implemented several initiatives to attract investors to the wellness sector, aligning with its goal of becoming a wellness hub. Key initiatives include:
- **Inclusion of Wellness under Mega Industries Policy:** Offers incentives to investors in Ayurvedic hospitals, wellness resorts, and centres.
- **AYUSH and Wellness Promotion under Tourism Policy:** Provides financial assistance for investments in wellness centres.
- **Herbal Cultivation and AYUSH Product Manufacturing:** Encourages herbal cultivation and supports the establishment of supply chains for AYUSH product manufacturing.

- **Special AYUSH Industrial Parks:** Provides world-class infrastructure for investors in the wellness sector.
- **Public-Private Partnerships:** Collaborates with private entities to develop wellness centres.

These initiatives have resulted in progress, including establishing 200 AYUSH Health and Wellness Centers and increasing investor interest. Uttarakhand's natural appeal and traditional knowledge of Ayurveda and wellness have made it an attractive destination for wellness-related investments.

13. *Details of the Investor Attraction Schemes, Amount Of Investment Attracted:*

Uttarakhand has made significant strides in attracting investment in the AYUSH and wellness sectors to establish itself as a wellness hub. Several initiatives have been launched under the AYUSH Policy 2018 and the state's mega industries policy to foster growth in these sectors.

To date, Uttarakhand has signed Memorandums of Understanding (MoUs) worth over ₹5,800 crores in the AYUSH sector, with projects worth ₹350 crores already in progress. This effort aims to promote wellness tourism, Ayurveda, Yoga, and other traditional medicine practices. High-profile collaborations have been formed, including the establishment of the AYUSH Export Promotion Council (AYUSHEXIL) and large-scale wellness resorts, such as a 5-star wellness centre planned in Uttarkashi. These initiatives are expected to boost wellness tourism and healthcare in the state (Ayurveda Magazine, 26 Feb 2020). The state government has promoted investor-friendly policies to attract further investment, leveraging the region's natural resources, clean environment, and skilled workforce. This aligns with India's broader "Heal in India" and AYUSH Visa initiatives to support international wellness tourism (Garhwal Post, 10 Dec 2023).

14. *Status of Promoting Wellness Tourism With The Development Of Wellness Centres, AYUSH Grams Near Major Religious Towns And On Pilgrimage Routes in PPP Mode, offering yoga, naturopathy, Panchkarma, spiritual counselling, meditation, and Vipasana:*

a. Number of wellness centres developed under PPP mode, number of tourists who availed these services Uttarakhand has emerged as a prominent destination for wellness tourism, making remarkable strides in developing wellness centres and AYUSH Grams in proximity to major religious towns and pilgrimage routes. These initiatives are thoughtfully designed to offer holistic health services encompassing practices such as yoga, naturopathy, Panchkarma, spiritual counselling, meditation, and Vipassana. By leveraging public-private partnerships (PPP), the state aims to attract tourists seeking enriching wellness experiences, particularly in renowned locales like Rishikesh, celebrated globally as a yoga capital.

The creation of these wellness centres not only enhances the spiritual allure of Uttarakhand but also aims to solidify its reputation as a centre for health tourism. With a strategic focus on integrating traditional health systems with modern wellness tourism, these initiatives align seamlessly with the broader framework of the AYUSH Policy 2018. This policy underscores the government's vision of positioning Uttarakhand as a leading wellness hub, inviting domestic and international visitors seeking rejuvenation through nature-based therapies and spiritual practices.

In addition to standalone wellness centres, the state is capitalising on its famous pilgrimage routes, such as those leading to the Char Dham-Badrinath, Kedarnath, Yamunotri, and Gangotri-to promote wellness services. This innovative approach merges religious tourism with health retreats, uniquely combining wellness and spirituality. It reflects Uttarakhand's rich tradition of holistic healing, deeply rooted in its stunning natural landscapes and serene environment.

Recent plans indicate that Uttarakhand aims to establish 451 Health and Wellness Centers, with many of these being developed under the PPP model. However, specific details regarding the number of operational wellness centres and the exact tourist count utilising these services remain elusive in public records. Nevertheless, the state's commitment to enhancing its wellness tourism sector is clear, and as these initiatives progress, they are likely to play a pivotal role in attracting visitors seeking holistic health and spiritual enrichment.

15. *Impact on health tourism:* Number of medical tourists who visited the state, revenue generated from medical tourism -

Uttarakhand is actively promoting wellness tourism by establishing wellness centres and AYUSH Grams near religious towns and pilgrimage routes. These centres offer holistic services like yoga, naturopathy, Panchakarma, meditation, and spiritual counselling. The state is leveraging public-private partnerships (PPP) to expand these initiatives, aligning with India's broader wellness tourism push. While specific data on the number of medical tourists and revenue generated from medical tourism in Uttarakhand is not readily available, the state's growing

focus on wellness and AYUSH tourism, particularly in Rishikesh, suggests a rising presence of medical tourism in the region.

16. *Impact on reduction in healthcare costs due to disease prevention and focus on wellness:*

Uttarakhand has embraced a transformative approach to healthcare, prioritising wellness and disease prevention through its AYUSH and wellness initiatives. This strategic focus has significantly contributed to reducing healthcare costs across the state. Uttarakhand has shifted its healthcare paradigm towards preventive care by emphasising traditional healing practices, leading to several positive outcomes.

One of the most notable achievements has been reducing the chronic disease burden. Preventive healthcare practices have effectively lowered the incidence of lifestyle-related diseases, decreasing the need for long-term medical treatment and hospitalisation. With fewer people relying on expensive medical interventions, the state has seen substantial cost savings in healthcare spending. This shift not only eases the financial strain on the healthcare system but also allows resources to be allocated more efficiently.

Moreover, the rise of wellness centres has fostered greater **public health awareness** among the population. These centres serve as hubs for education on healthy lifestyles, encouraging individuals to make informed choices about their well-being. As people engage more with these wellness practices, the overall quality of life in the region has improved. The infusion of wellness tourism into the local economy has attracted visitors and enhanced residents' daily lives.

Through these concerted efforts, Uttarakhand has successfully reduced healthcare costs associated with treating chronic diseases while positioning wellness as a vital aspect of its tourism and public health policy. This dual approach promotes a healthier populace and showcases the state as a leader in integrating traditional practices with modern healthcare strategies.

WAY FORWARD AND RECOMMENDATIONS

Uttarakhand has made commendable progress in enhancing the health, education, and wellness sectors. However, sustained efforts are necessary to ensure equitable access and quality improvements across the state. Strengthening public-private partnerships can unlock resources and bring specialized expertise in key areas, like wellness tourism and high-altitude healthcare. Expanding digital learning, vocational training, and e-learning centres will make education accessible, even in remote regions, contributing to workforce productivity. Additionally, promoting preventive healthcare through AYUSH integration and focusing on rural healthcare can foster a holistic approach to health across the state. Based on this report following recommendations may be considered:

1 **Expand Healthcare Access**: Strengthen the "You Quote, We Pay" scheme to attract medical professionals to underserved hill districts, offering incentives like service bonds for continuity.

To expand healthcare access in Uttarakhand, it is essential to strengthen the "You Quote, We Pay" scheme, which can be a pivotal tool in attracting medical professionals to the underserved hill districts. By allowing healthcare practitioners to quote their salary expectations, the scheme can ensure competitive compensation that aligns with the unique challenges of these regions. Additionally, offering incentives such as service bonds-where professionals commit to a specified tenure in exchange for benefits like bonuses or loan repayment assistance-can promote continuity and stability in healthcare services. This approach addresses the immediate needs of medical personnel and fosters a supportive environment that encourages professionals to build long-term careers in rural healthcare, ultimately enhancing the quality and accessibility of medical services for local communities. To enhance the "You Quote, We Pay" Scheme, the following initiatives may be examined:

- Flexible Compensation Packages: Allow medical professionals to quote their salary expectations, ensuring competitive compensation that reflects the cost of living and the unique challenges of working in remote areas.

- Incentives for Longevity: Introduce service bonds that provide bonuses or loan repayment assistance for committed service periods (e.g., 3-5 years), encouraging professionals to stay longer in hill districts.

2 **Enhance Digital Education**: Further develop 'Centers of Excellence' in technical education and digital platforms to improve the accessibility of quality education.

Enhancing digital education in Uttarakhand by further developing 'Centers of Excellence' in technical education is essential for improving access to quality learning opportunities across the region. These centres can serve as vital hubs, offering state-of-the-art facilities, advanced technological resources, and hands-on training aligned with industry needs. By integrating robust digital platforms, students can benefit from a diverse range of

online courses, interactive learning experiences, and access to expert-led sessions, regardless of their geographical location. Additionally, partnerships with local industries can ensure the curriculum is relevant and up-to-date, equipping learners with the skills needed for the modern workforce. This comprehensive approach not only democratizes education but also fosters a culture of innovation and lifelong learning, empowering individuals to achieve their full potential and contribute effectively to the socio-economic development of Uttarakhand. To implement a robust digital platform, the following strategic action plan can be implemented:

- **Identify Strategic Locations:** Select key regions within Uttarakhand that would benefit the remote rural community the most, ensuring a focus on accessibility for underserved communities.

- **Industry Collaboration:** Partner with local industries and educational institutions to design a curriculum that meets current technological and market demands, ensuring relevance and employability.

- **Continuous Updating:** Implement a system for regular curriculum reviews to incorporate emerging tech-nologies and methodologies.

- **Create a Centralized Online Portal:** Develop a user-friendly digital platform where students can access courses, resources, and learning materials tailored to their needs.

- **Diverse Learning Options:** Offer a mix of self-paced courses, live virtual classes, and interactive multi-media resources to cater to different learning styles.

- **Professional Development Programs:** Provide training for educators on digital teaching methods, online course development, and the use of digital tools to enhance instructional effectiveness.

- **Set Clear Metrics:** Develop performance indicators to assess educational outcomes, enrolment rates, and student satisfaction to gauge the Centres' effectiveness.

3   Promote AYUSH and Wellness Tourism: Position Uttarakhand as a wellness hub by integrating traditional AYUSH practices with modern healthcare, especially in tourism-rich areas like Rishikesh and Haridwar.

To promote AYUSH and wellness tourism in Uttarakhand, the state can strategically position itself as a leading wellness hub by seamlessly integrating traditional AYUSH practices with modern healthcare, particularly in tourism-rich areas like Rishikesh and Haridwar. Additionally, marketing campaigns emphasizing Uttarakhand's serene environment and spiritual heritage, complemented by

wellness retreats, workshops, and festivals focused on health and healing, can enhance visibility. Training programs for local hospitality providers can ensure that visitors receive informed guidance on wellness practices and therapies available in the region. By leveraging its rich cultural heritage and natural beauty, Uttarakhand has the potential to become a premier destination for wellness tourism, fostering an environment that nurtures physical, mental, and spiritual well-being. Specific action plan may include:

- **Targeted Campaigns:** Launch marketing campaigns that focus on the benefits of wellness tourism, highlighting Uttarakhand's serene landscapes, spiritual heritage, and therapeutic offerings.

- **Digital Presence:** Leverage social media and online platforms to create awareness and attract potential tourists. Use storytelling to share customer testimonials and transformative experiences.

- **Annual Wellness Festivals:** Organize events celebrating AYUSH practices, wellness workshops, and cultural exhibitions, drawing tourists and wellness enthusiasts.

- **Partnerships with Universities:** Collaborate with academic institutions to research the efficacy of AYUSH therapies, enhancing credibility and attracting health-conscious tourists.

4   Strengthen Disaster Preparedness: Scale up the Aapaat Mitra and DHAMS programs to reduce response times and enhance healthcare support in high-risk areas through community volunteer training and mobile medical units.

To strengthen disaster preparedness in Uttarakhand, it is crucial to scale up the Aapaat Mitra and Disaster Health Assistance and Management System (DHAMS) programs to reduce response times and enhance healthcare support in high-risk areas. This can be achieved by training community volunteers in emergency response techniques, first aid, and disaster management, empowering local populations to act swiftly during crises. Additionally, deploying mobile medical units can ensure immediate access to healthcare services in remote regions, bridging the medical support gap when traditional facilities are inaccessible. By fostering community engagement and establishing a robust network of trained responders and mobile healthcare resources, Uttarakhand can significantly improve its resilience to disasters, ultimately safeguarding lives and ensuring better health outcomes for affected populations. A few strategic steps might include the following:

- Partnerships with NGOs: Collaborate with non-governmental organizations specializing in disaster

response to enhance regional resource availability and expertise.

- **Create a Volunteer Database:** Maintain an updated database of trained volunteers, their skills, and availability to ensure quick mobilization when disaster strikes.
- **Use of Mobile Apps:** Develop and promote mobile applications that provide real-time updates on disaster risks, response resources, and access to emergency healthcare services.
- **GIS Mapping:** Utilize Geographic Information System (GIS) technology to map high-risk areas, healthcare resources, and volunteer availability to optimize disaster response efforts.

5   Support Industry-Education Linkages: Establish more Industry Research Cells in universities to foster industry partnerships and applied research, aligning education outcomes with local industry needs and global trends.

To effectively support industry-education linkages in Uttarakhand, it is essential to establish more Industry Research Cells within universities that can foster robust partnerships between academia and local industries. These cells would serve as dynamic hubs for applied research, where students, faculty, and industry professionals collaborate on projects that address real-world challenges and innovation needs. By aligning educational outcomes with local industry demands and global trends, these partnerships can enhance the relevance of academic programs, better prepare students for the workforce, and drive economic growth in the region. Additionally, providing opportunities for internships, workshops, and joint ventures will not only enrich the educational experience for students but also contribute to the development of a skilled workforce capable of meeting the evolving needs of various industries in Uttarakhand. A few potential initiatives could include the following:

- Identify Local Industries: Create a database of local industries and sectors relevant to the university's academic programmes and actively engage them in discussions about their research needs and challenges.
- Formalize Collaborations: Develop Memoranda of Understanding (MOUs) with industries to formalize partnerships, outlining roles, responsibilities, and benefits for all parties involved.
- Incentivize Student Involvement: Encourage students to participate in applied research projects by offering academic credits, internships, or stipends for their contributions.
- Host Research Competitions: Organize competitions or hackathons that bring together students and industry professionals to collaborate on solving specific industry problems, fostering innovation and creativity.
- Offer Specialized Courses: Develop short-term courses, workshops, or certifications based on industry feedback to equip students with in-demand skills.
- Create Research Grants: Establish grants or funding opportunities for faculty and students to pursue innovative projects that align with industry interests.
- Develop Online Platforms: Create online forums or platforms where students, faculty, and industry representatives can connect, collaborate, and share research findings and opportunities.

By prioritizing these areas, Uttarakhand can drive long-term sustainable development, equipping its residents with the skills and resources to participate effectively in an evolving economy and improve its socio-economic resilience.

CONCLUSION

In the hill districts of Uttarakhand, the healthcare challenges are profound, stemming from geographical isolation, inadequate infrastructure, and a critical shortage of medical professionals. The state's picturesque mountains and serene landscapes mask a troubling reality: many communities struggle to access basic healthcare services. Despite initiatives like the "You Quote We Pay" scheme aimed at incentivising healthcare workers, numerous medical positions remain unfilled, and many doctors often leave to pursue higher studies. This constant turnover results in inadequate healthcare access, forcing residents to wait longer for essential treatments.

Recognising these issues, policymakers have proposed several measures to address the gaps in the healthcare system. One significant initiative is to **strengthen doctor retention policies**. Implementing compulsory service bonds and a fixed-tenure policy aims to ensure continuity of care in these underserved areas. Furthermore, improving infrastructure and working conditions is critical; the government plans to prioritise the development of basic healthcare facilities and upgrade telemedicine services to reach those in remote locations.

The expansion of public-private partnerships (PPP) is another strategic approach. By collaborating with private entities, the state can effectively manage healthcare facilities and provide rotating specialist doctors, ensuring that communities have access to the expertise they need. Additionally, enhancing training and local recruitment will play a vital role in building a sustainable healthcare

workforce. Initiatives to recruit and train local candidates as healthcare workers and financial incentives for medical education students can help create a homegrown solution to the staffing crisis.

Monitoring and evaluating incentive schemes regularly is essential to support these efforts, ensuring that financial incentives remain effective and adjusted as necessary. Implementing health education and awareness programs will also strengthen initiatives focused on preventive healthcare and community education, empowering residents to take charge of their health.

Strategic partnerships with national and international organisations can further bolster the healthcare infrastructure in Uttarakhand, encouraging investments in medical technology and emergency services.

Despite the challenges, Uttarakhand has made notable strides in several key areas. Educational access has improved through initiatives like Sarva Shiksha Abhiyan, while healthcare infrastructure has expanded with the establishment of Health and Wellness Centres and satellite centres. The promotion of wellness tourism is also noteworthy, as it integrates traditional medicine with modern healthcare, appealing to both residents and visitors alike.

Looking ahead, the focus must remain on enhancing digital and vocational education to equip future generations. Filling medical staff shortages in the hill districts and promoting preventive healthcare services will be crucial. Additionally, the sustainable development of wellness tourism, integrating traditional practices with modern approaches, presents a promising avenue for the state.

A collaborative effort among government agencies, private sectors, and communities is essential to enhance public services and create equitable access to healthcare and education. By harnessing Uttarakhand's natural potential for wellness tourism and fostering continued innovation in technology and resource allocation, the state can pave the way for sustainable long-term socio-economic development, ensuring all its residents have access to quality healthcare services.

NATURAL RESOURCE MANAGEMENT

ABSTRACT

This chapter outlines the status of natural resource and environment management in the State and describes the major challenges faced by multiple implementation arms of the State government in the existing policies and processes of protection, conservation, promotion, development, regulation and management of these valuable resources that have critical importance for the wellbeing of the residents as well as for the entire nation.

The State's diverse geographical and climatic features present both opportunities and challenges for conservation and management. Efforts by the Forest Department, Wildlife Wing, Pollution Control Board, and other organizations are vital in addressing these challenges.

Policies and programmes aim to balance conservation with local needs, promoting sustainable practices and improving rural livelihoods. Continued efforts and adaptive management strategies are essential for ensuring the long-term sustainability of Uttarakhand's natural resources at the State level. The chapter makes a case for compensation by the Central government for the services rendered by the State and its residents for economic benefits emanating from the Uttarakhand forests for the country's population, which are valued at ₹ 95,112 crores annually.

During the period from 2021-22 to 2023-24, significant progress has been made by the Uttarakhand Forest Department, CAMPA Project, JICA Project, and Uttarakhand Watershed Management Department in addressing environmental and conservation challenges. Forest cover has grown, forest fires are reduced, incidence of man-animal conflict is receding. These achievements reflect a commitment to enhancing forest and watershed management, protecting wildlife, and promoting sustainable development practices in Uttarakhand.

To ensure more productive management of Forest resource of the State technical review on conservation and productivity issues are needed like thrust on increasing broad leaved species instead of conifers. Conifers should be promoted in only such areas where broad leaved species cannot be sustained because of unsuitable soil and site Conditions.

The encouraging census data relating to wildlife in the State indicate that Protected Areas and The Forest areas are being maintained in best possible condition to supported fauna of the State. Monkey population is declining, tiger population is on the increase.

In view of multiple policies, rules, guidelines and measure being taken by the State in the area of Natural Resource Management, following suggestions are provided as way forward:
a)   Enhancing Community Engagement:
b)   Proactive planning to take up innovative projects in the State for enhancing forest yield.
c)   Strengthening Human-Wildlife Conflict Mitigation efforts
d)   Improving Compensation Mechanisms for rural folk

e) *Investing in Infrastructure*
f) *Reducing Industrial Emissions*
g) *Treating Wastewater Discharge into water bodies*
h) *Controlling Construction Dust*
i) *Reducing Vehicle Emissions*
j) *Strict Enforcement of Pollution Control Laws*
k) *Greater focus on Public Awareness and community action for pollution control*
l) *Adoption of Green Technologies*
m) *Strengthening Regulatory Framework and its implementation*
n) *Enhanced Monitoring and Early Warning Systems for Anticipation of Forest Fires and Landslides*
o) *Mainstreaming Community Partnership in protection, conservation and promotion of natural resources and environmental safeguarding.*

8.1 Introduction

The Himalayan rivers have been nursing the adjacent plains by providing soil and water for millions of years. Being the region from where the Gangetic River system originates, Uttarakhand has special place in ecological framework of the Indian subcontinent.

Environmental issues have been dominating the socio-political scenario of the region, right from the beginning of organized forestry. Forest rights have often been the issue of people agitation in these mountains. Deforestation in 1960s and 1970s, eventually led to 'Chipko Movement' and ban on tree cutting above 1000m elevation. In recent years, conflicts between uninterrupted river flows and construction of big dams have led to another form of debates and controversies, often affecting developmental processes in the State. Climate change driven glacier shrinkage, extreme weather events triggering disasters like landslides and flash floods, and drying of water sources, particularly springs are posing new threats and uncertainties in the life of people living in mountainous areas of Uttarakhand.

Issues related to forest biodiversity and human and wildlife conflicts, water and springs, and climate change are central to the life of people in the State. The lack of adequate data on several environmental aspects has affected the developmental plans.

The State and central Governments are paying increasing attention to data generation on spatial patterns with regard to forest cover, meteorological parameters, forest fires and others, particularly with the development of space and information technologies. It may be pointed out that Department of Science and Technology and the Ministry of Environment, Forest and Climate Change (MoEFCC) of Government of India has two major initiatives, called National Mission on Sustaining the Himalayan Ecosystem

(NMSHE) and National Mission on Himalayan Studies (NMHS) to strengthen scientific data collection on Himalayas. Uttarakhand has established State Climate Change Cell under these initiatives. Universities in the State need to take fuller advantage of the research grants available with NMSHE and NMHS.

In Uttarakhand, following issues call for priority attention.
- Forest degradation and its consequences, such as species loss and the depletion of forest carbon stock
- Frequent man-made surface fires
- Spread of invasive alien species
- Human wildlife conflicts and their impact on agriculture
- Impact of ban on tree-cutting, and expansion of Pine into Oak forests
- Treeline Ecotone dynamics and other changes under the influence of global climate change
- Drying of springs and their impact on household water supply and watersheds
- Conflict between electricity generation and flow of environmental services and energy security
- The need for incorporating ecosystem services flowing from the mountainous regions in national accounting
- Climate change- impact and adaptation
- Migration leading to de-population in rural areas
- Chaotic urban build up and air pollution
- Sustainable tourism
- Road construction generated erosion and landslides-initiating road ecology.

Human-wildlife conflicts is an important problem. People's perception and escalating climate change-driven disasters can cause long lasting scars in the people's mind and lead to their out-migration.

Expansion of Chir/Pine into Banj/Oak forests, though still a debatable issue dominates people minds periodically when smoke of forest fires chokes our valleys and small human settlements perched on the base of a steep hill slope are affected by increased particulate matters in air for days and weeks.

8.2 Forest Types and Ecological Attributes:

Forests (27,224 km2) account for 50.9% of geographical area (53,483 km2) of Uttarakhand (ISFR, 2017). They not only represent the principal land use, but also provide ecological foundation to the State and adjoining plains. Sal (Shorearobusta) in sub-montane belt, and Banj Oak (Quercusleucotrichophora) and Chir Pine (Pinusrox-burghii) between 1000-2000 mts elevations are major forest forming species. Conifers like Fir (Abiespin-drowand A. spectabilis), Spruce (Piceasmithiana) and Blue Pine (Pinuswallichiana) account for much of the subalpine forest belt (2000-3000m). Kharsu Oak (Q.semecarpifolia), is a major broadleaved evergreen species above 2400 m.

Himalayan Birch (Betulautilis, called in Hindi Bhojpatra) is a major treeline species (>3000 m). Fir (Abiesspec-tabilis) and Kharsu oak, and Rhododendrons (Rhododen-dron campanulatum) also frequently occur in treelines, particularly those around summits in outer Himalayan ranges.

In Uttarakhand, treeline elevation range is quite wide (2601-4366 m), but about 57% fall within a narrow elevation band of 3400-3800 m.

8.2.1 Forest Types and Conditions:

The considerable differences in altitude, slope, aspect and microclimate leads to formation of different forest types in the State. Because of natural and biotic factors density of the forest also changes from place to place.

Important Forest types of Uttarakhand are given in following table:

Table -8.1 Area under Different Forest Types(Area in km^2)

S. No	Forest Type of Group	VDF	MDF	Open	Scrub	Total
1	Group-3 Tropical Moist Deciduous Forest	1104.44	2806.19	715.50	8.18	4634.31
2	Group-5 Tropical Dry Deciduous Forest	81.00	851.15	868.51	78.00	1578.66
3	Group-9 Subtropical pine Forest	768.67	4432.01	1721.46	189.11	7111.25
4	Group-12 Himalayan Moist Temperate Forest	1612.45	5014.49	2434.98	28.12	9090.04
5	Group-13 Tropical Moist Deciduous Forest	199.96	171.97	75.65	1.18	448.76
6	Group-3 Tropical Moist Deciduous Forest	185.98	709.92	131.85	9.75	1037.5
7	Group-3 Tropical Moist Deciduous Forest	21.87	103.53	39.81	5.59	170.8
8	Group-3 Tropical Moist Deciduous Forest	0.98	26.87	11.58	0.07	39.5
9	Plantation/TOF	26.65	279.87	344.66	0.00	651.18
	Total-	8004	28792	12388	640	27224

(Source: Forest Survey of India Report 2015) Note: - VDF =Very density Forest, MDF= Medium density Forest

8.2.2 National Parks, Sanctuaries and Conservation Reserves:

Rich forest cover in the State makes it suitable for wildlife habitat. In comparison with neighbouring States the faunal diversity is quite high and it has well managed wildlife units (Table 8.2.2)

8.3 Valuation of Forest Ecosystem Services

Government of Uttarakhand, with a view to making an assessment of economic value of the forests and other natural resources of the State and to know its contribution to State GDP, assigned a study to the Indian Institute of Forest management, Bhopal (IIFM). The study was

completed in 2019 and it developed a sustainable environment performance index for the State. This study provided framework for gross environmental product (GEP) which is in line with the international system for collecting relevant data on different sectors like land, water, energy etc.

The study provides economic estimates for most relevant 21 ecosystem services from the forest area of Uttarakhand. Depending on the availability of field data, district wise the estimates were prepared.

The study expresses the benefits estimated in terms of monetary value in rupees. According to the study the economic benefits emanating from the Uttarakhand forests

Table – 8.2 National Parks

Sl. No.	Name	Year of Establishment		Area (Sq.Km.)	Location (District)
		Section 35(1)	Section 35(4)		
1	Corbett National Park	1936		520.82	Garhwal, Nainital
2	Nandadevi National Park	1982	1982	630.00	Chamoli
3	Valley of Flowers N. Park	1982		87.50	Chamoli
4	Rajaji National Park	1983	2013	819.5441	Haridwar, Dehradun, Garhwal
5	Gangotri national Park	1989		23900.02	Uttarkashi
6	Govind National Park	1990	2013	558.88	Uttarkashi
			Total	**5006.76**	

Table – 8.3 Wildlife Sanctuaries

Sl. No.	Name	Year of Establishment		Area (Sq.Km.)	Location (District)
		Section (1)	Section (4)		
1	Mussoorie W.L.S.	1993		10.82	Dehradun
2	Kedarnath W.L.S.	1972		975.20	Chamoli/Rudraprayag
3	Govind W.L.S.	1955	2013	481.05	Uttarkashi
4	Askot W.L.S.	1986	2013	600.00	Pithoragarh
5	Sona Nadi W.L.S.	1987		301.18	Garhwal
6	Binsar W.L.S.	1988		45.59	Almora
7	Nandhor W.L.S	2012		269.96	Nainital/**Champawat**
		Total		**2683.80**	

Table – 8.4 Conservation Reserves (Overlapping Area)

Sl. No.	Name of Division	Name of Conservation Reserve	Area (Ha.)
1	Chakrata Forest Division	Asan Conservation Reserve	444.400
2	Haridwar Forest Division	Jhilmil Tal Conservation reserve	3783.500
3	Ramnagar Forest Division	Pawalgarh Conservation Reserve	5824.760
4	Nainital Forest Division	Nainadevi Bird Conservation Reserve	11191.900
		Total	**21244.560**

Source: -Forest department statistical report 2017-1

is approximately ₹ 95,112 crores annually. This is equivalent to an annual flow value of ₹ 3,88,085 per hectare of forest in Uttarakhand.

The above-mentioned valuation emphasises the need for the Central Government to provide adequate financial resources for protection, augmentation and management of the natural resources of the State

This analysis also highlights the value of ecosystem provide by it natural resources to the country. Therefor keeping these forests and environmental resources safe and in healthy condition is responsibility of the State Government and Government of India.

In another study done by IIFM of the Corbett Tiger reserve (CTR), as a representative of Terai-arc landscape, it is estimated that the Corbett Tiger Reserve (CTR) provides flow benefits worth ₹14.7 billion (₹1.14 lakh/ hectare) annually. Important ecosystem services originating from CTR include gene-pool protection (₹10.65 billion year), provisioning of water to downstream districts of Uttar Pradesh (₹1.61-billion-year) and water purification services to the city of New Delhi (₹550 million year). Other important services emanating from Corbett include generation of employment for local communities (82 million year), provision of habitat and refuge for wildlife (274 million year) and sequestration of carbon (214 million year).

These natural resources are not only productive assets for the people of the State but are also a responsibility of the people of this country to maintain these assets for common good.

8.4 Policies and Programmes for Conservation and Management of Resources

Government of India Policies and Directions:

Government of India has been very responsive and active towards its duties of conservation of environment, forest, and wildlife as enshrined by our constitution. For this purpose, large number of enactments, policies and directives have been issued, which are crucial for addressing natural resource conservation and management. State Government of Uttarakhand has been working for effective implementation of these provisions. Some most important acts and policies are outlined below-

- **Indian Forest Act, 1927:** This act Provides for classification of different types of forests, defines various forest offences besides laying down procedure and extent of punishment violation of the act. This act also mentions different steps for declaration of various types of forests by the State governments. UK State government is committed and proactive for implementation of this act.
- **National Forest Policy, 1988**: Aims to ensure ecological balance through sustainable forest management, encouraging local community involvement, and increasing forest cover.
- **Forest Conservation Act, 1980**: Regulates the diversion of forest land for non-forest purposes, requiring compensatory afforestation plans and protecting forest lands from encroachment.
- **National Afforestation Programme (NAP)**: Focuses on afforestation and reforestation, providing financial and technical support for restoration projects and community involvement.
- **National Mission for Green India (GIM)**: The mission is being implemented for protection, restoration and enhancement of India's forest cover.

Wildlife Conservation Policies and Enactments:

Wildlife protection is given immense importance in Government of India policy and protected areas are governed by provisions made under these acts and programmes:

- **Wildlife Protection Act, 1972**: Provides legal protection to wildlife and their habitats, establishes protected areas, and regulates hunting and wildlife trade.

- **Project Tiger**: Aims to conserve tiger populations and their habitats through the establishment of Tiger Reserves and financial support for habitat management and anti-poaching efforts.
- **Project Elephant**: Focuses on conserving elephant population and their habitats, protecting elephant corridors, and reducing human-wildlife conflicts.
- **The Recognition of Zoo rules-1992: -** These provide for regulation of conditions of wild animals in captivity and to implement National Zoo Policy.

Watershed Management Policies and Programmemes:

- **Integrated Watershed Management Programme (IWMP)**: Aims to restore degraded watersheds, improve land productivity, and involve community participation in watershed management.
- **National Water Policy, 2012**: Promotes integrated water resources management, efficient use of water, and pollution control measures.

Pollution Control Policies:

- **Environment Protection Act, 1986**: Provides a framework for environmental protection, empowering the government to address pollution and environmental degradation.
- **National Clean Air Programme (NCAP)**: Sets air quality standards and targets for reducing pollutants, promoting cleaner technologies and fuels.

Climate Change Policies:

- **National Action Plan on Climate Change (NAPCC)** : Addresses climate change through eight missions focusing on solar energy, energy efficiency, and sustainable agriculture.
- **State Action Plans on Climate Change (SAPCC)**: Tailors climate action plans to State-specific needs, including adaptation, mitigation, and resilience strategies.

Government of Uttarakhand Policies and Directions:

Government of Uttarakhand has developed several policies and directions keeping in view local conditions in consonance with the policies of Government of India, such as-

Forest Management and Conservation Policy & Institutional Mechanisms:

- **Uttarakhand State Forest Policy, 2013**: Ensures sustainable forest management, restoration of degraded forests, and promotion of afforestation. Encourages community involvement through the Forest Management (JFM) approach.

- **Uttarakhand Forest Development Corporation (UFDC)**: Manages and develops forest resources sustainably, oversees commercial forestry activities, and supports reforestation programmes.
- **Compensatory Afforestation Fund Management and Planning Authority (CAMPA)**: Utilizes funds from forest land diversion to support afforestation and habitat restoration projects.

Wildlife Conservation Strategy & Plans:
- **Uttarakhand Wildlife Conservation Strategy, 2015**: Focuses on protecting critical habitats, implementing anti-poaching measures, and promoting community-based conservation.
- **Uttarakhand State Action Plan for the Conservation of Tigers**: Strengthens tiger conservation efforts with enhanced protection measures, habitat management, and community engagement.

Watershed Management Policy:
a) **Uttarakhand State Watershed Management Plan**: Aims to improve watershed management through soil and water conservation, afforestation, and community participation.
b) **Rural Development Department's Watershed Programmes**: Addresses rural water scarcity and land degradation with water harvesting structures and sustainable agricultural practices.

Pollution Control Regulations and Institutional Mechanisms:
- **Uttarakhand State Pollution Control Board (USPBC) Regulations**: Controls industrial and other activities with a view to reducing pollution through following environmental standards, monitoring, and public awareness campaigns.
- **Uttarakhand Urban Pollution Control Strategies**: Addresses urban pollution with measures to reduce emissions, manage waste, and develop green infrastructure.

Climate Change Policy:
- **Uttarakhand State Action Plan on Climate Change (SAPCC)**: Focuses on adaptation and mitigation strategies, including water resource management, agriculture, and disaster preparedness.
- **Uttarakhand Renewable Energy Policy**: Promotes renewable energy sources such as solar, wind, and biomass, providing incentives and subsidies for technology adoption.

8.5 Issues and Challenges Facing Conservation & Management of Natural Resources

8.5.1 Challenges Faced by Forestry Sector:

The following are the most challenging issues in management of forests in the State.
1. Forest fire is one of the most damaging and recurring reasons for degradation of forests. This has increased with erratic rainfall and long spells of dry seasons.
2. Increasing demand of land for non-forestry development activities is bound to happen in a State where most of land area is defined as forest land under the law.
3. Dependence of rural population on forest resources for fodder, fuelwood and grazing.
4. Increasing man-animal conflict in forest and protected wildlife areas leads to indifferent feeling towards forests in the minds of rural folk.
5. Encroachment of forest land. Forest boundaries along villages, townships, agricultural lands and cities are widespread and irregular. Because of this attempts to grab/encroach forest land is an unending problem.
6. Reduction in density and biodiversity in forests because of change in edaphic conditions, changing climatic conditions is also cause of worry. Increasing population and transfer of land for various non-forestry purposes have decreased habitats for flora and fauna.
7. **Subsistence and Dependence on Forest Resources: Many communities in Uttarakhand rely on forest** resources for subsistence, including fuelwood, fodder, and construction materials. This dependence leads to overexploitation and forest degradation. Programmes like the Joint Forest Management (JFM) aim to involve communities in sustainable forest management to mitigate these issues.
8. **Natural Calamities:** Uttarakhand is prone to natural calamities such as landslides, floods, and forest fires. For instance, the 2013 Uttarakhand floods caused extensive damage to forests and infrastructure. Dry spells increase the risk of forest fires, while heavy monsoon rains can trigger landslides that destroy forest cover. Effective disaster management strategies are essential to address these impacts.
9. **Grazing needs and demand for Forest Products in rural areas:** The demand for grazing land and forest products for construction contributes to degradation of forest and habitat loss. Promoting sustainable land management practices and agroforestry can help reduce pressure on forest resources and enhance land productivity.
10. **Problem of invasive species:** In Tarai, Bhabbar and deep valley regions of the State there is infestation of lantana weed. In Higher places problems of spreading of Eupatorium is widely faced. This infestation is leading to poor regeneration of various valuable forest species. palatable grasses and fodder species

are also being replaced, which causes hardship for survival of wildlife.

11. **Man, Animal Conflict:** Wild animals compete with human beings for natural resources which causes conflicts. The injuries and fatalities caused by wildlife have considerable adverse effect on economy of rural population. The State Government has a policy of paying compensation for human deaths human injuries, crop, livestock and property damage, which entails heavy expenditure rear. Average annual compensation disbursed is approximately 13.25 crore ₹ per annum.

12. **Damage of Agricultural crops by Monkeys** and Langurs Monkey Census 2021: Monkey census was conducted in the year 2021, in which the number of monkeys was estimated at 1,10,840. To solve the problem caused by monkeys, monkey sterilization is being done in Uttarakhand. The number of monkeys has decreased by about 35,000 (24.30%) as compared to the 2015 census. The sterilization programme has shown positive results in decreasing monkey population in the State.

13. **Problems of Forest Fires:** Forest fires are one of the major causes of degradation of vegetation cover in forest, civil soyam land and near agricultural land. The vulnerability of forest areas to forest fires is assist by forest prone classes which is being given in table below:

Forest fires are a significant concern in Uttarakhand, especially during the dry season. These fires can lead to substantial loss of forest cover, wildlife habitat, and affect air quality. The data presented below provides an overview of forest fire incidents and their impact over the past three years.

Forest fires result in:
1. Loss of biodiversity, air quality degradation
2. Damage to forest cover, increased soil erosion
3. Threat to wildlife, disruption of local livelihoods

14. Problem of Landslides in Uttarakhand: Landslides pose a significant threat and challenge to the management of hilly terrain of Uttarakhand, often triggered by heavy

Table – 8.5:Forest Fire Prone Classes

S.No.	Forest Fire Prone Classes	Geographical Area	% of Total Forest cover
1	Extremely fire prone	45.56	0.17
2	Very highly fire prone	443.12	1.60
3	Highly fire prone	2,689.15	9.32
4	Moderately fire prone	7,316.58	21.66
5	Less fire prone	32,275.70	67.25
	Total	**42,770.11**	**100.00**

Source of Survey of India Year of 2020-21

Table -8.6: Forest Fire Incidents and Impacts

Year	Number of Forest Fire Incidents	Area Affected (hectares)	Major Affected Areas
2020-21	2813	71744	Nainital, Almora, Dehradun, Pauri Garhwal
2021-22	2186	32072	Pithoragarh, Uttarkashi, Chamoli
2022-23	713	15333	Rudraprayag, Tehri Garhwal, Bageshwar
2023-24	1276	1771	Haridwar, Champawat, Nainital

Source: Forest department

rains, earthquakes, and deforestation. The following are important adverse effect of landslide:

Key Impacts of Landslides
▪ Infrastructure damage,
▪ Road blockages,
▪ Loss of life

▪ Property damage, disruption of local services
▪ Increased landslide frequency, risk to settlements
▪ Financial loss to individuals and the State economy

Key Statistics and Trends
▪ **Average Annual Incidents:** Approximately 80 incidents per year.

- **Peak Season:** Landslides are most common during the monsoon season (June to September) and following heavy rainfall events.
- **Response and Mitigation Efforts**: Installation of early warning systems, improved road construction practices, and reforestation projects are part of ongoing mitigation strategies in the State.

8.5.2 Challenges of Environment Pollution:

Maintaining water, air and environmental quality is one of the challenges in the State, Development is a necessity and it is accompanied by disturbance of nature. In Uttarakhand following factors are identified as major causes of pollution.

1. Rising number of vehicles and consequent increase in pollution levels.
2. Construction works like roads. hydro-electric projects, residential colonies etc. add to air and water pollution. These activities increase quantity of sediment in natural water streams and manmade reservoirs. These also causes pollution because of various chemicals etc. used by machines and transport vehicles.
3. Use of insecticides, fertilizers and weedicides in agricultural farms leave soil and water polluted for long time. These chemicals get deposited in water reservoirs and also enter into the plants and subsequently into animal bodies.
4. Despite ongoing efforts to control use to plastic in everyday life, its use continues for domestic as well as for commercial purposes in the State.
5. Use of detergents, insect repellents etc also are sources of pollution.
6. Industrial development is necessary, but industries are also one of the major causes of pollution on land, in the air and in water bodies especially in areas near industrial estates. Medical establishments, like hospitals and diagnostic laboratories generate waste which is untreated or disposed off as prescribed, cause following types of hazardous pollutants. Special attention is required for addressing pollution cost by these sources:
   (a) Solid waste, (b) Chemical waste, (c) Biomedical waste, (d) Electronic waste, (e) Water pollution and (f) Air pollution.

8.6 Important Achievements in Conservation and Management

8.6.1 Achievements of Forestry Sector:

The primary goal of the State Forest Department is conservation and sustainable utilization of forest resources. Forestry sector is allocated nearly two to three percent of State budget, which constitutes nearly 0.5% of GSDP. Most of the revenue from forestry sector is by sale of timber, resin and non-timber forest produce and minor minerals.

Performance of The Department can be assessed by increase in greenery, increase in population of wild animals, involving people in forest management and the estimated amount of carbon fixation and sequestration at gross level. Forest Survey of India in its report of 2021 estimated carbon sequestration of 3.78 million tonnes happened during 2019-20 and 2020-21.

The Uttarakhand Forest Department has made significant contributions to forest conservation and management, focusing on reforestation, wildlife protection, and sustainable forest management. Here are the main achievements during the period from 2021-22 to 2023-24:

1. **Reforestation and Afforestation**
- **Achievement**: Successfully planted over 25 million saplings across various districts, restoring degraded forest areas and enhancing green cover.
- **Impact**: Increased forest cover by approximately 2% and improved habitat quality for wildlife.

2. **Wildlife Protection and Conservation**
- **Achievement**: Implemented enhanced anti-poaching measures and established new wildlife protection units, leading to a significant reduction in incidents of wildlife poaching.
- **Impact**: Notable population recovery of key species such as the Bengal Tiger and the Himalayan Black Bear.

3. **Forest Fire Management**
- **Achievement**: Improved forest fire management strategies, including the establishment of rapid response teams and the use of technology for early fire detection.
- **Impact**: Reduced the frequency and severity of forest fires by 30% compared to previous years.

4. **Involvement of village communities**
   The Uttarakhand Forest Department has made significant contributions to forest conservation and management through participation of communities through eco-development committees etc.

5. **Forest Cover of Uttarakhand**
   The Forest Department has achieved significant milestones in maintaining forest cover and improving

Table – 8.7 Forest Cover Increase Status

Class	VDF	MDF	OF	Scrub	NF	Total ISFR 2017
Very Dense Forest	4,968	0	0	0	1	**4,969**
Moderately Dense Forest	79	12,787	6	0	12	**12,884**
Open Forest	0	18	6,406	2	16	**6,442**
Scrub	0	0	1	379	3	**383**
Non Forest	0	0	38	2	28,765	**28,805**
Total ISFR 2019	**5,047**	**12,805**	**6,451**	**383**	**28,797**	**53,483**
Net Change	78	-79	9	0	-8	

Source: - Forest Survey of India State of forest report-2017

environmental conditions. Afforestation drives have increased tree cover, and conservation efforts have protected critical habitats and species.

8.6.2 Eco-Tourism Development:

The State has rich scenic beauty, abundant flora and fauna to attract nature lovers. For appropriate utilization of this resource, ecotourism activity is being promoted in the State. This activity along with other outdoor adventure sports like river rafting etc. provides employment to local population and gives impetus and additional input to business activities in the State. The income received from such activities is shared between the engaged persons and relevant units of the forest department. This type of revenue is recycled for further development of the ecotourism sites and for meeting the expenditure related to those activities.

8.6.3 Innovative Initiatives to Contribute to the State Economy:

Policy for development of NTFP, Herbal & Aroma Tourism through a Federation has been approved in November 2023, the policy seeks to promote Jadi-buti cultivation in Van Panchayats. Registration of NTFP Federation as a society has been completed. Selection of Van Panchayats for cultivation has been completed and 500 Van panchayat are selected of which 50 are shortlisted for start of work in FY 2024-25,

The Non-Timber Forest Produce Federation, which will serve as the execution agency for establishment of small and large value addition units, ecotourism parks and various components under the scheme, has been established. Carbon Credits project through Afforestation and Pine Needles Fuel - LoA is issued. Stakeholder consultation is completed. Draft RFP has been submitted in Aug'24) and is under department review.

8.6.4 Implementation of National Forest Policy through working plans:

The working plans of forest divisions are being revised every 10 years as per working plan code issued by Government of India. Similarly, managements plans are also prepared for protected / Wildlife areas. The working plan provides for various forestry and conservation activities and its implementation is ensured by constant monitoring at circle and division levels.

8.6.5 Wildlife Conservation:

The Wildlife Wing of the Forest Department has contributed to wildlife conservation through monitoring and protection programmes. The Project Tiger initiative has stabilized the Bengal tiger population in Jim Corbett National Park, Raja ji National Park and elsewhere. The State can boast of providing sustainable habitat to important species, which is proven by their increasing numbers. Some relevant details are being given in following tables:

Tiger: The number of tigers is estimated every 04 years as per the guidelines of the National Tiger Conservation Authority. The assessment figures of previous years are as follows:

Table – 8.8 Tiger Population

Years of Counting	2006	2010	2014	2018	2022
No of Tigers	178	227	340	442	560

Source: Forest department

Table - 8.9   All India Tiger Estimation 2018 & 2022

Division	No of Tigers (2018)	No of Tigers (2022)
Corbett Tiger Reserve	231	260
Terai Western Forest Division	39	52
Rajaji Tiger Reserve	37	51
Ramnagar Forest Division	37	67
Almora Forest Division	&	1
Haldwani Forest Division	23	36
Terai Eastern Forest Division	23	53
Champawat Forest Division	9	11
Terai Central Forest Division	5	8
Nainital Forest Division	4	1
Lansdowne Forest Division	34	29
Dehradun Forest Division	&	3
Grand Total	**442**	**560**

Source: Forest department

Table – 8.10 Leopard Counting

Assessment	No. of leopards
The fifth cycle of leopard population assessment 2022, Uttarakhand (Covered 20 States in India, conducting a foot survey estimate carnivore signs and prey abundance.)	652
Total population estimates of Common leopard, during Phase II (Population Estimation) in the Mid- Himalayan Zone of Uttarakhand-2023	2276

Note: Guldar/Kakad/Himalayan Ghural/Sambhar/Wild Boar/Asiatic Black Bear Count (Includes count of High Himalayan (above 1000 m) areas by Wildlife Institute of India, does not include areas below 1000 m).

Table - 8.11 Population Estimation of Forest Fauna - Phase II 2023

DIVISION	Common Leopard	Barking Deer	Himalayan Goral	Sambar	Wild Pig	Asiatic Black Bear
Almora Forest Division	272	526	122	53	38	23
Askot Musk deer WLS	6	213	39	130	9	9
Badrinath Forest Division	106	632	258	134	41	20
Bageshwar Forest Division	116	759	113	146	41	20
Binsar WLS	3	59	6	2	3	1
Chakrata Forest Division	103	213	178	41	23	13
Champawat Forest Division	169	432	73	786	228	16
Civil Soyam Almora	60	163	36	27	18	8
Gangotri National Park	2	79	1	141	0	2
Garhwal Forest Division	232	547	287	221	81	28
Govind National Park	1	95	4	17	1	2
Govind Wildlife Sanctuary	13	492	50	54	10	7
Haldwani Forest Division	23	78	20	28	14	4
Kedarnath Wildlife Division	55	465	167	37	32	14
Kedarnath WLS	21	319	49	67	13	9
Lansdowne Forest Division	45	232	77	248	65	9
Mussoorie Forest Division	**24**	**45**	**430**	**9**	**10**	**8**
Nainital Forest Division	134	527	114	49	35	14
Nanda Devi Biosphere Reserve	5	74	2	233	1	5
Nanda Devi Forest Division	12	351	12	154	8	10

DIVISION	Common Leopard	Barking Deer	Himalayan Goral	Sambar	Wild Pig	Asiatic Black Bear
Nanda Devi National Park	1	64	1	49	1	1
Narendra Nagar Forest Division	129	346	307	364	85	13
Pithoragarh Forest Division	**294**	**1133**	**153**	**553**	**90**	**37**
Ramnagar Forest Division	17	8	26	45	18	3
Rudraprayag Forest Division	117	558	135	42	49	13
Soil Conservation Kalsi	4	1	78	8	5	2
Tehri Forest Division	145	584	235	82	38	20
Tons Forest Division	28	425	173	24	14	9
Upper Yamuna Barkot Forest Division	29	281	73	48	12	11
Uttarkashi Forest Division	110	513	94	123	23	20
Total Numbers	**2276**	**10212**	**3314**	**3915**	**1005**	**352**

Note: - Mean estimates based on camera trapping only. Source: Forest Department

Snow Leopard Census

In the census conducted by the Wildlife Institute of India in the year 2023-24, the number of Snow Leopards in the country has been estimated at 718. In this calculation, the number of Snow Leopards in Uttarakhand State has been estimated at 124.

Table-8.12 Elephant Counting

Division/Circle	No of Elephant (Year wise)								Area in sq. kms
	2001	2003	2005	2007	2012	2015	2017	2020	
Ramnagar Tiger Reserve	441	477	560	515	429	850	-	1011	661.62
Kalagarh Tiger Reserve	149	150	78	107	314	185	-	213	626.73
Corbett Tiger Reserve	590	627	638	622	743	1035	-	1224	1288.35
Dehradun Forest Division	90	85	27	27	26	27	-	89	504.82
Lansdowne Forest Division	125	139	157	180	186	160	-	150	433.43
Kalsi Forest Division	0	0	0	0	0	2	-	0	233.31
Haridwar Forest Division	88	77	130	31	52	59	-	113	390.74
Shivalik Circle	303	301	314	238	264	248	_	352	1562.3
Narendranagar Forest Division	13	12	18	3	0	0	-	0	39.52
Bhagirathi circle	13	12	18	3	0	0	_	0	39.52
Terai Eastern Forest Division	18	13	28	38	11	21	-	10	824.3
Terai Central Forest Division	7	8	13	7	23	10	-	30	404.97
Ramnagar Forest Division	21	36	25	4	116	84	-	16	487.37
Haldwani Forest Division	75	92	29	5	43	55	-	30	595.79
Terai Western Forest Division	0	6	20	1	31	27	-	41	384.07
Western Circle	121	155	115	55	224	197	_	127	2696.5
Rajaji National Park	453	469	416	418	302	309	-	311	851.62
Champawat Forest Division	27	18	9	10	26	8	-	12	205.21
Northern Circle	27	18	9	10	26	8	_	12	205.21
Grand Total	**1507**	**1582**	**1510**	**1346**	**1559**	**1797**	**1839**	**2026**	**6643.5**

Source: Forest department

9. SPECIALIZED PROJECTS

9.1 *Pollution Control Board: Remedial Measures Taken to Address Environmental Concerns:*

Right from inception of the State of Uttarakhand, the Pollution Control Board (UKPCB) has been active in checking, reducing and the mitigating pollution caused by various human activities particularly industries and other

polluting units. Consent for starting an Industry is given only when it has planned to adopt the industrial norms laid down by Government of India, Central Pollution Control Board and Uttarakhand Pollution Control Board.

There is regular practice of inspecting all industrial units to make them adhere to prescribed norms. Similarly medical units and other commercial units which are likely to generate hazardous wastes are also kept under observation on either getting a complaint or *suo moto*. Further suitable legal action is taken against the violating units which includes closure of the units. The detailed Information about Air quality characteristic and sound pollution status is given in another volume of the Economic Survey (2023-24) of Planning Department of Uttarakhand.

Most of the river and rivulets in the State have water quality graded as A. Deterioration of water quality happens near Cities and Industrial areas. For example, water quality of river Ganges is of grade A up to Rishikesh, while the quality gradually goes down to B, C and D in district Haridwar. Water quality of river Dhola and river Bahela in district Rudrapur is C grade. In District Dehradun upper part of river Song, has water quality A but it goes down to C and D beyond confluence of river Suswa with Song river. Government has planned more sewerage treatment plants near these rivers.

9.2 CAMPA Project (Compensatory Afforestation Fund Management and Planning Authority):

The CAMPA Project in Uttarakhand focuses on compensatory afforestation and forest management to offset the impact of deforestation and development activities, specially caused by transfer of forest land for non-forest purposes. Main components are given below:

a) Compensatory Afforestation
- **Achievement**: Executed compensatory afforestation programmes on 20,000 hectares of land, including degraded and deforested areas.
- **Impact**: Contributed to the overall increase in forest cover and improved biodiversity in the affected regions.

b) Forest Protection and Management
- **Achievement**: Invested in the development of infrastructure for forest protection, such as watchtowers and patrolling units, and implemented sustainable forest management practices.
- **Impact**: Enhanced forest protection and reduced instances of illegal logging and encroachment.

c) Capacity Building
- **Achievement**: Regularly conduct training/refresher training programmes for forest department staff and local communities on sustainable forest management and afforestation techniques.
- **Impact**: Improved the effectiveness of forest management and increased community involvement in conservation efforts.

d) Restoration and Rehabilitation: Implementing programmes to restore affected areas and mitigate future risks, such as reforestation and land stabilization projects.

9.3 Integrated Watershed Management Programme (IWMP):
- **Objective**: To improve watershed management and restore degraded landscapes.

Key Features:
- **Research Component**: Assessment of soil erosion, water scarcity, and land degradation.
- **Watershed Restoration**: Includes construction of check dams, contour plowing, and reforestation.
- **Community Participation**: Involves local communities in watershed management and conservation activities.

Achievements:
- Successful restoration of several degraded watersheds.
- Enhanced water availability and reduced soil erosion in targeted areas.

Programmes implemented and completed by Watershed Management Directorate are listed below:
I. GRAMYA-I
ii. EEC Project South Bhagirathi Phase-I
iii. EEC Project South Bhagirathi Phase-I
iv. EEC Project Bhimtal
v. EEC Project Doon Valley
vi. IWDP -II Project
vii. International Agriculture Development Fund Project
viii. GRAMYA Phase-II

The following projects are under implementation by Watershed Management Department
- Global Environment Facility (GEF-6)
- Central Sponsored Agricultural Irrigation Project
- Uttarakhand Climate Responsive And Rain Fed Farming Project
- GREEN-AG Project

"Green-Ag: Transforming Indian Agriculture for Global Environmental Benefits and the Conservation of Critical Biodiversity and Forest Landscapes"

The Green-Ag Project aims to catalyse sustainable transformation of India's agriculture, without compromising the country's food security and farmers' income. The project seeks to mainstream biodiversity conservation, climate change, and sustainable land management objectives and practices into Indian agriculture to enhance multiple global environment benefits. The project also aims to bring greater coherence between the Government's policies, investments and institutions concerned with conservation and agricultural production at landscape level, so that they become mutually compatible. The Green-Ag Project is funded by the Global Environment Facility (GEF) through its sixth funding cycle. The Department of Agriculture and Farmers Welfare (DA&FW) is the National Executing Agency and FAO is the Implementing Agency. The Ministry of Environment, Forest and Climate Change (MoEF&CC) is the GEF Operational Focal Point and coordinates all GEF Projects in the country. The Project adopts a landscape approach by incorporating participatory governance and community based natural resource management at grassroots levels, for sustainable management of natural resources, land-use systems, and improved livelihood options. More specifically, it is being implemented in five high-conservation-value landscapes, wherein each landscape includes a mix of conservation and production areas.

9.4   Spring and River Rejuvenation Authority (SARRA):

In FY 2023-24, approval has been given for the establishment of State Level Spring and River Rejuvenation Authority (SARRA) under the Watershed Department.The objective of this scheme is "Identification of natural water sources and rivers of the State, increase in water emissions, measurement and monitoring and participation of local population for sustainable flow of rain-fed rivers. The aim is to ensure sustainable use of rainwater by treating it, using scientific methods and through rainwater harvesting techniques like check dams etc.

The progress of the scheme so far is summarised below:
In 13 districts of the State district level SARRA centres and district level executive committee have been formed.

State Water Conservation Campaign-2024 is underway from the month of April 2024 under the direction of SARRA and following has been achieved:

- Identification of 5421 water sources at village level and water supply activities are being implemented in treatment areas.
- Implementation of treatment activities by identifying 929 water sources that are drying up at the development block level.
- Implementation of treatment activities by identifying 292 tributaries/streams at the district level.
1. Construction of 7,72,793 different water harvesting and storage structures within the State creating capacity of 29,45,978 cubic meters of water storage.
2. In view of ground water recharge in urban areas, 25 construction works against the total targeted 348 recharge pits/shafts done.
3. Achieved 2563 hectares against targeted plantation of 629 hectares.
4. In view of long-term treatment based on scientific methods, the work of formulation of treatment plan for rain-fed rivers of the State - Song in Dehradun, Eastern Nayar in Pauri, Western Nayar, Shipra in Nainital and Gaudi in Champawat districts is in progress.

9.5   JICA Project (Japan International Cooperation Agency):

The Uttarakhand Forest Resource Management Project in Uttarakhand funded by JICA, was taken up for addressing problem of forest degradation and it focuses on eco-restoration, livelihood improvement, infrastructure improvements and disaster mitigation including watershed management, forest conservation, and disaster risk reduction. The project area covered selected 6 Forest Divisions in Garhwal and 7 Divisions in Kumaon.

9.6   Climate Change Adjustment Efforts: Uttarakhand State Action Plan on Climate Change (SAPCC):

The responsibility for preparation of Action Plan for climate change was entrusted to Forest Department and a special cell was created for this purpose. Main activities are-

Climate Change Impact Assessment Studies
- **Objective**: To assess the impact of climate change on key sectors such as agriculture, water resources, and biodiversity.

Key Features:
- **Agricultural Research**: Studies on crop yield impacts, changing rainfall patterns, and adaptation strategies.

- **Water Resource Assessment**: Evaluation of changes in river flow patterns, glacier melt rates, and water availability.
- **Biodiversity Monitoring**: Research on shifts in species distribution and habitat loss due to climate change.
- **Assessment of vulnerability to climate change**; after selecting vulnerability indicators District and Block vulnerability profiles are prepared. These data will help in design of appropriate adaptation and mitigation policies.

Promoting Resilience to Climate Change Impacts
Objective: To address climate change impacts and promote resilience in Uttarakhand.

Key Features:
- **Adaptation Strategies**: Focuses on enhancing water resource management, promoting sustainable agriculture, and improving disaster preparedness.
- **Mitigation Measures**: Includes initiatives for reducing greenhouse gas emissions, promoting renewable energy, and enhancing energy efficiency.
- **Research Component**: Supports studies on climate trends, vulnerability assessments, and the effectiveness of adaptation strategies.

Achievements:
- Development of sector-specific strategies for water, agriculture, and forestry.
- Integration of climate change considerations into State planning and development processes.
- Development of climate impact models for agriculture and water resources.
- Identification of key vulnerabilities and adaptation needs in different sectors.

9.7   Efforts for Doubling Income of Farmers:

Emphasis is being given in the State to farm cultivation of medicinal plants like *Koot, Jatamansi, Chirayata, Anwala* etc, which is increasing higher income from farmers' produce. Farmers are being trained for proper grading, processing and packing so that there is more acceptability in market and fetches better sale value.

The Forest Department encourages rural women to raise nurseries and have a buy back arrangement for seedlings to provide them additional income.

Tusser silk and Mulberry silk rearing is being done in suitable areas, which farmers do in addition to other farming activities.

Many villagers still depend on forests for fuelwood and fodder requirements. Their energy needs are being supplemented by growing fuelwood and fodder plantations near villages. That saves expenditure on energy needs.

WAY FORWARD
In view of multiple policies, rules, guidelines and measure being taken by the State in the area of Natural Resource Management, following suggestions are provided as way forward:
a)   **Enhancing Community Engagement**: Increasing awareness and involvement of local communities in conservation efforts and damage mitigation strategies.
b)   **Proactive planning to take up innovative projects in the State:** For deriving economic benefits from natural resources the State government may plan to use locally useful and relevant scientific management techniques for enhancing forest yield.
c)   **Strengthening Human-Wildlife Conflict Mitigation**: Implementing better preventive measures, such as wildlife corridors, community-based management, and effective anti-poaching measures and timely action in case of man-eater animals etc.
d)   **Improving Compensation Mechanisms**: Streamlining the compensation process to ensure timely and adequate support for affected individuals.
e)   **Investing in Infrastructure**: Developing infrastructure to support both wildlife conservation and disaster management, including early warning systems and response teams.
f)   **Industrial Emissions**: Many industries are seen violating emission standards, leading to deterioration of ambient environmental conditions. Such units should be convinced to install pollution control devices.
g)   **Wastewater Discharge**: Several industrial and municipal wastewater discharge points were can be observed non-compliant. Action should be strictly taken for the installation of treatment facilities and penalties for non-compliance.
h)   **Construction Dust**: Construction activities in urban areas contributed to elevated particulate matter levels. Enforcement of dust control measures and fines for non-compliance should imposed.
i)   **Vehicle Emissions**: Increased vehicular pollution led to stricter emission norms and vehicle inspection drives are required
j)   **Strict Enforcement of Pollution Control Laws**: Stringent enforcement of pollution control laws and regulations, coupled with regular inspections, is essential to ensure compliance**.**
k)   **Public Awareness**: Increasing public awareness about the impact of pollution and promoting community participation in pollution control efforts.

l) **Adoption of Green Technologies**: Encouraging industries and municipalities to adopt green technologies and practices to reduce emissions and pollution.

m) **Strengthening Regulatory Framework**: Updating and strengthening pollution control regulations to address emerging challenges and ensure effective enforcement.

n) **Enhanced Monitoring and Early Warning Systems for Anticipation of Forest Fires and Land slides**: Efforts should be done for utilizing technology to predict and respond to forest fires and landslides more effectively.

o) **Community Involvement**: Mandatory participation and mainstreaming of local communities in preventive measures and response efforts in all initiatives.