

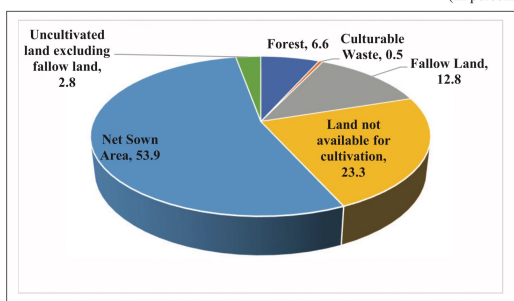


Key points

- 🌾 Agriculture in Bihar contributes about 20 percent to the GSVA and has shown an average growth rate of 5 percent in the last five years.
- 📈 The state has a net sown area of 50.5 lakh hectares and a total foodgrain output of 184.9 lakh tonnes, with aquaculture, fisheries, and livestock contributing 8.4 percent to the GSVA.
- 🚜 Bihar has diversified its agricultural economy with crops like cereals, pulses, oilseeds, fruits, and vegetables.
- 🌱 The state government has implemented programs to boost agricultural output, increase crop yields, and enhance rural incomes.

Chart 3.1 : Land Utilisation Pattern in Bihar (2020-21)

(In percent)



Source : Directorate of Economics and Statistics, GoB

Challenges in Bihar's Agriculture Sector

- 1 **Climatic Factors:** Bihar faces challenges due to erratic rainfall, frequent droughts, and floods, which impact crop output and productivity.
- 2 **Small Land Holdings:** The agricultural sector in Bihar is plagued by the small size of land holdings, which limits the scope for mechanization and efficient farming practices.
- 3 **Lack of Formal Credit:** The lack of adequate formal credit hampers the growth of the agricultural sector in Bihar, making it difficult for farmers to invest in modern farming techniques and technologies.

- 4 **Limited Irrigation Facilities:** Despite investments in irrigation, there is still a need for further development of irrigation infrastructure to ensure consistent water supply for agricultural activities.
- 5 **Crop Diversity:** Bihar's agricultural economy is considerably diversified, but there is a need to further enhance diversification to reduce dependence on a few key crops and ensure sustainable growth.
- 6 **Post-Harvest Losses:** The state needs to address post-harvest losses by improving storage and transportation facilities, as well as promoting value addition and processing of agricultural produce.
- 7 **Climate Change:** Climate change poses a significant challenge to Bihar's agriculture sector, with the potential for increased frequency and intensity of extreme weather events, affecting crop yields and overall productivity.
- 8 **Access to Markets:** Improving market access and infrastructure is crucial to ensure fair prices for farmers' produce and reduce post-harvest losses.
9. **Technology Adoption:** Encouraging the adoption of modern agricultural technologies and practices, such as precision farming, use of high-quality seeds, and efficient use of fertilizers and pesticides, can help overcome productivity challenges.
10. **Skill Development:** Enhancing the skills and knowledge of farmers through training and capacity-building programs can contribute to improving agricultural practices and productivity in Bihar.

Suggestive Measures to Improve Agriculture in Bihar

- 1 **Promoting Organic Farming:** The government of Bihar is actively promoting organic farming through various schemes like the National Program on Organic Production (NPOP) and the Jaiwalk Corridor Scheme. These initiatives provide subsidies, certification assistance, and infrastructural support to farmers, encouraging them to adopt organic and sustainable agricultural practices.



2 **Investing in Agri-based Industries:**

The Bihar Agri-Investment Promotion Policy offers capital subsidies to individual investors and Farmer Producer Companies (FPCs) for establishing new agri-based industries or expanding existing units. This initiative aims to enhance farmers' income, generate employment, and reduce wastage of produce. Focus products include makhana, fruits and vegetables, maize, medicinal plants, aromatic plants, honey, and tea.

3 **Improving Seed Quality and Availability:**

The government has initiated programs for genetically identifying hybrid seeds of maize and paddy crops using DNA fingerprinting. Additionally, the Bihar State Seed Corporation produces and distributes certified seeds of rice, wheat, maize, pulses, and oilseeds to cultivators in the state. These measures ensure the availability of high-quality seeds for farmers.

4 **Enhancing Irrigation Infrastructure:**

The government has allocated significant funds for irrigation development in Bihar. Improving irrigation facilities can help farmers mitigate the risks of water scarcity and increase agricultural productivity.

5 **Promoting Efficient Fertilizer Usage:**

Chemical fertilizers continue to be an important input for increasing agricultural productivity in Bihar. The government provides subsidies for seed and chemical fertilizers to promote their widespread usage. Emphasizing efficient fertilizer application techniques can ensure that crops receive proper nutrition while minimizing wastage.

6 **Investing in Fisheries Sector:**

The government has launched schemes to enhance fish production and productivity in Bihar's water bodies. These initiatives aim to invest in technology without disturbing the ecological balance and enhance the disaster resilience of fish farming in flood and drought conditions.

Initiatives of the Department of Agriculture

These include the National Food Security Mission (NFSM), which focuses on crop demonstration, hybrid seed distribution, certified seed production, distribution of soil ameliorates, plant protection chemicals, agricultural mechanization, and demonstration programs by NGOs. The Crop Demonstration Program has been particularly effective in transferring agricultural technology to farmers and increasing productivity in rice, wheat, and pulses.

Genetic Identification of Hybrid Maize and Paddy Seeds

The Department of Agriculture has launched a scheme for genetic identification of hybrid seeds of maize and paddy through DNA fingerprinting. This scheme aims to ensure the quality of seeds and costs Rs. 142.27 lakh. The Bihar State Seed and Organic Certification Agency (BSSOCA) has a well-equipped DNA fingerprinting lab for this purpose.

Jaivik Corridor Scheme for Organic Farming

Under the Jaivik Corridor Scheme, an additional 20,000 acres have been allocated for organic farming. The scheme provides infrastructural support to farmers, including common facility centers, logistic support, smart jaivik mandis, and development of organic value chains.

Animal Husbandry, Fisheries, and Dairy Farming

The growth of allied sectors like animal husbandry, fisheries, and dairy farming is crucial for rural employment and income generation. The State government has implemented various programs to support these sectors, including the establishment of centers of excellence for vegetables and fruits, subsidy schemes for drip and micro sprinkler systems, and the construction of export packhouses for fruits and vegetables. The government also focuses on strengthening agriculture extension services to ensure the effective transfer of modern technology to farmers.

Procurement of Foodgrains and Irrigation

The State government of Bihar procures foodgrains through the Bihar State Food and Civil Supply Corporation (BSSFC) to support farmers and ensure food security. Efforts are being made to increase storage capacity for procurement operations. In terms of irrigation, the government has invested in irrigation projects to improve productivity and reduce reliance on monsoons. Public expenditure on irrigation has been significant in recent years to support rainfed agriculture and increase crop yields.





Key Points

-  The top five industries in Bihar are food products, other non-metallic mineral products, textiles, fabricated metal products, and rubber and plastic products, as per the Annual Survey of Industries (ASI) report.
-  In 2019-20, Bihar had 1,128 operational agro-based factories and 1,808 operational non-agro-based factories, with a higher share of operational units compared to the all-India level.
-  The State government has implemented policies and initiatives to create a conducive environment for industries, including large-scale capital-intensive industries and start-ups, aiming to attract large-scale industries and incentivize small-scale enterprises.
-  Bihar's enterprises sector exhibits a low scale of production, but efforts have been made to enhance production capacity and attract new-age entrepreneurs through policies like the Bihar Industrial Investment Promotion Policy and the Bihar Start-up Policy 2022.
-  The State government has focused on sectors like sugar, dairy, food processing, and tourism to boost economic growth and attract investments, along with implementing entrepreneurship schemes to encourage self-employment among different disadvantaged sections.

Strategic Keywords from the Document:

Bihar Industrial Investment Promotion Policy (Textile and Leather Policy), Udyog Mitra, Bihar Start-up Policy, 2016, Bihar Start-up Policy, 2022, Bihar Innovation Hub, Seed grant, Chief Minister's Sugarcane Development Programme, Bihar Industrial Investment Promotion Policy (Textile and Leather Policy), 2022, Bihar Start-up Policy 2022, Revenue collection from minerals, Bihar as a major tourist destination, Training Programme, Power subsidy for powerloom weaver, Handloom schemes

Industrialization in Bihar

1 Number of Factories: The number of factories in Bihar increased from 3.42 thousand to 3.43 thousand between 2018-19 and 2019-20, showing a slight increase of 0.3 percent.

2 Working Capital: The working capital in factories in Bihar increased significantly from Rs 3.48 thousand crore to Rs 5.24 thousand crore between 2018-19 and 2019-20, indicating a growth of 51 percent.

3 Value of Output: The total value of output in Bihar increased from Rs 68.42 thousand crore to Rs 76.18 thousand crore between 2018-19 and 2019-20, showing an increase of 11 percent.

4 Net Value Added: The net value added in Bihar increased by 1.2 percent in 2019-20 compared to the previous year, while at the all-India level, it declined by 4.8 percent.

5 Investment Proposals: Under the Bihar Industrial Investment Promotion Policy 2016, the state received investment proposals worth Rs 60.86 thousand crore in the last six years.

6 Working Units: Currently, there are 398 working units in Bihar, with a total investment of Rs 3.39 thousand crore.

7 Employment: The establishment of production units in Bihar has generated employment for 13,713 workers in various capacities.

8 Major Sectors: Food processing, ethanol production, and renewable energy are the sectors that attracted significant investment in Bihar.

9 Sugar and Dairy Industries: The sugar and dairy industries in Bihar have been performing satisfactorily and have contributed to the industrial growth of the state.

10 Textile and Leather Policy: The Bihar Industrial Investment Promotion Policy (Textile and Leather Policy), 2022 aims to enhance the capacity of textile and leather goods production and establish a strong value chain.

11 Tourism: The State government has committed significant investments to promote Bihar as a major tourist destination in India.

12 Revenue Collection: Revenue collection from minerals has increased substantially in recent years.

Challenges of Industrialization in Bihar

- 1 **Low scale of production:** The enterprises sector in Bihar historically exhibits a low scale of production, which hinders its ability to generate a surplus and contribute significantly to economic growth.
- 2 **Insufficient infrastructure:** The lack of adequate infrastructure, including roads, power supply, and logistics, poses a challenge to industrialization in Bihar. This can hinder the establishment and growth of industries in the state.
- 3 **Land acquisition and litigation:** Land acquisition for industrial purposes has faced challenges due to litigation issues. A significant portion of acquired land is under litigation, which delays the development of industrial infrastructure.
- 4 **Limited skilled labor:** Bihar faces a shortage of skilled labor, which can hinder the growth of industries. Efforts are being made to train and incentivize the working-age population to participate in the industrial sector.
- 5 **Limited investment:** Despite recent efforts to attract investment, Bihar still faces challenges in attracting large-scale industries. The state government has implemented policies to promote investment, but more needs to be done to create a favorable investment climate.
- 6 **Dependency on agro-based industries:** While agro-based industries like sugar and dairy have performed well in Bihar, there is a need to diversify the industrial sector. Over-reliance on a few industries can limit the overall growth and development of the sector.
- 7 **Infrastructure development:** The development of industrial infrastructure, including industrial parks and clusters, is crucial for attracting investment and promoting industrialization. Efforts are being made to develop infrastructure, but more investment and planning are required.

Overall, industrialization in Bihar faces challenges related to scale of production, infrastructure, land acquisition, skilled labor, investment, and diversification. Addressing these challenges will be crucial for the state to realize its industrial potential and contribute significantly to economic growth.

Measures to Increase Industrialization in Bihar

- 1 **Establishment of Industrial Areas:** The Bihar Industrial Area Development Authority (BIADA) has been developing land as industrial areas and providing basic infrastructure to attract entrepreneurs. The State government has also notified the BIADA Land Allotment Policy, 2022 to allot land to industries and establish them in a time-bound manner.
- 2 **Industry-Oriented Policies:** The State government has formulated industry-oriented policies such as the Bihar Industrial Investment Promotion Policy (Textile and Leather Policy), 2022. These policies aim to enhance the capacity of industries like textiles and leather goods production and establish a strong value chain.
- 3 **Incentives for Industries:** The State government has provided incentives to industries through policies like the Bihar Industrial Investment Promotion Policy 2016 and the Bihar Start-up Policy 2022. These policies aim to attract investment and encourage the establishment of production units in the state.
- 4 **Focus on Agro-Based Industries:** Bihar has seen success in agro-based industries like sugar and dairy. The State government can continue to support and incentivize these industries to further their growth and create employment opportunities.
- 5 **Promotion of Textile Industry:** Bihar has the potential to become an important center for textiles and garments production. The State government can focus on harnessing the potential of handloom and powerloom industries by providing training programs, strengthening the sector's value chain, and leveraging the GI tag for Bhagalpur silk.
- 6 **Infrastructure Development:** The State government should continue to invest in developing robust and environment-friendly industrial infrastructure. This includes improving connectivity, providing reliable power supply, and ensuring access to water and other necessary resources.
- 7 **Skill Development:** To support industrialization, the State government should prioritize skill development programs to train the working-age population and equip them with the necessary skills for various industries.



Labor , Employment and Skill

Labor Force Participation Rates:

- Bihar's overall labor force participation rate is 42.2%, 16.2% lower than the national average.
- Rural male participation: 68.8%, urban male: 64.6%.
- Alarmingly low female participation: 11.1% in rural areas and 6.9% in urban areas, lowest in India.

Male Workers' Employment Status:

- 63.1% engaged in self-employment (higher than national average).
- 29.2% work as casual laborers with low wages and job insecurity.
- Only 7.7% have regular wage/salary jobs, significantly lower than the national average.

Sectoral Distribution of Male Workers:

- Primary sector (agriculture, etc.) employs 44.8% (higher than national average).
- Construction sector: 20.6% (higher than national average).
- Wholesale/retail trade: 12.1% (similar to national average).

Wage Gap and Average Daily Earnings:

- Persistent wage gap: Rs 338 per day for males, Rs 244 per day for females.
- No specific data on overall employment/unemployment rates in Bihar.
- Emphasis on the need for increased regular wage/salary jobs and improved labor standards in the state.

Aspect	Bihar	Comparison
Labor Force Participation Rate (LFPR)	LFPR: 42.2% (16.2% below national average)	Bihar's LFPR lowest among all states (58.4% national average)
Female LFPR	Rural: 11.1%, Urban: 6.9% (lowest in India)	Significant gender disparity in LFPR
Employment Status	Self-Employment: 63.1% (higher than national average) Casual Labor: 29.2% Regular Jobs: 7.7%	Lack of regular wage/salary jobs, more self-employment
Wage Gap	Male: Rs 338/day, Female: Rs 244/day	Persistent wage gap across sectors
Industry Distribution	Primary Sector: 44.8% (higher than national average) Construction: 20.6% Wholesale/Retail Trade: 12.1%	Varied industry distribution, with a focus on primary sector
Skill Development	Government-led programs for skill development	Initiatives to enhance skill-set for different industries
Challenges	Low LFPR, gender disparity, high self-employment, wage gap	Ongoing efforts for skill development and employment improvement



Low Labor Force Participation:

- Bihar's labor force participation rate is notably low at 42.2%, which is significantly lower (16.2% below) than the national average.
- The significant portion of the population not actively engaging in the workforce suggests untapped potential for economic growth and development.

Gender Disparity:

- Bihar exhibits stark gender disparities in labor force participation, particularly among females, recording the lowest female LFPR across all Indian states.
- In rural areas, the female LFPR stands at a mere 11.1%, while in urban areas, it's even lower at 6.9%, reflecting substantial hurdles to women's workforce integration.

Lack of Regular Wage/Salary Jobs:

- A dominant portion of Bihar's workforce, especially male workers (63.1%), engages in self-employment activities, surpassing the national average.
- Alarmingly, only 7.7% of male workers in Bihar secure regular wage/salary jobs, lagging significantly behind the national figure of 23.2%.
- This imbalance indicates a dearth of occupations providing stable wages and social security benefits, leaving a substantial segment vulnerable to exploitative labor practices.

Skill Development:

- Bihar grapples with the challenge of uplifting the skill quotient of its labor force.
- Though the government has implemented various skill development programs, there's an evident need to fortify and expand these initiatives.
- This enhancement is vital to equip the workforce with the requisite skills demanded by diverse industries and modern workplaces.

Wage Gap:

- Persistent gender-based wage disparities persist across all sectors in Bihar. On average, male workers earn Rs 338 per day, while their female counterparts earn Rs 244 per day.
- Bridging this wage gap is imperative to ensure equitable compensation for equal work and to promote gender parity in economic remuneration.

Unorganized Sector Workers:

- Bihar accommodates a considerable workforce in the unorganized sector, lacking social security benefits and adequate protections.
- The state government has initiated welfare schemes to provide social security to these workers, but these programs need substantial reinforcement and expansion.
- Strengthening these initiatives is crucial to encompass a larger proportion of the unorganized workforce and safeguard their rights and well-being.

Tackling these multifaceted challenges demands concerted efforts from government bodies, private stakeholders, and civil society. The collective focus should revolve around augmenting labor force participation, addressing gender disparities, fostering stable job creation, enhancing skill development endeavors, rectifying wage gaps, and fortifying social security measures for vulnerable sections of the workforce.

Measures to Increase Female Labor Force Participation:

Promoting Education: Improving access to quality education for girls by enhancing infrastructure, offering scholarships, and addressing gender-specific barriers to education.

Skill Development Programs: Targeted skill development programs aimed at women can enhance employability in sectors with high demand, fostering entry into diverse areas of the economy.

Safe Work Environments: Establishing safe workplaces through strict implementation of laws, awareness campaigns, and sensitization programs can encourage more women to join the workforce.

Access to Finance and Entrepreneurship: Providing access to financial resources, credit facilities, and entrepreneurship training can empower women to start businesses and become self-reliant.

Social Norms and Attitudes: Addressing deep-seated social norms and stereotypes limiting female participation through awareness campaigns and community engagement to promote gender equality.

Benefits of Increasing Female Labor Force Participation:

Economic Growth: Greater female participation expands the workforce, enhancing productivity and contributing to economic growth, reflected in higher GDP and improved living standards.

Poverty Reduction: Women's participation in the labor force provides economic independence, reducing poverty rates at both individual and household levels.

Gender Equality: Increased participation challenges traditional gender roles, empowering women to engage in decision-making processes and fostering a more equitable society.

Social Development: Enhanced female workforce involvement positively impacts indicators like education, healthcare, and child welfare, providing better resources and opportunities for families.

The augmentation of female labor force participation in Bihar would yield inclusive and sustainable development, leveraging social and economic benefits that extend beyond individuals to encompass communities and the state as a whole.

Way Forward

Skill Development:

- Enhance and expand skill development programs through initiatives like Bihar Skill Development Mission and Rural Self-Employment Training Institutes to prepare the workforce for various industries.

Entrepreneurship Promotion:

- Encourage entrepreneurship by offering support like finance access, business development training, and mentorship programs for aspiring entrepreneurs.

Infrastructure Development:

- Invest in infrastructure enhancements such as transportation networks, power supply improvements, and the development of industrial zones to attract industries and generate job opportunities.

Industry Diversification:

- Promote diversification into sectors like manufacturing, information technology, and tourism to reduce reliance on the primary sector and create more employment avenues.

Encouraging Investment:

- Create an investment-friendly environment by simplifying regulations, offering incentives, and ensuring a conducive business atmosphere to attract both domestic and foreign investments, fostering job creation.

Women Empowerment:

- Focus on gender equality and women's empowerment through tailored skill development, reservation policies, and establishing safe work environments to enhance female participation in the workforce.

Social Security Enhancement:

- Strengthen social security measures, especially for workers in the unorganized sector, by providing access to healthcare, insurance, and social protection benefits.

Education and Training Improvement:

- Elevate the quality of education and training programs to align with industry requirements, ensuring the workforce is equipped with necessary skills for employment.

Public-Private Partnerships:

- Foster collaborations between government, private sector, and civil society for joint initiatives in skill development, entrepreneurship support, and job placement.

Monitoring and Evaluation:

- Establish a robust system for monitoring and evaluating employment generation initiatives to make data-driven improvements and ensure their effectiveness.

Implementing these strategies can significantly enhance employment opportunities, reduce unemployment rates, and foster inclusive and sustainable economic growth in Bihar.



Physical Infrastructure

Key Points

- Bihar has developed a vast road network connecting all districts to the state capital, Patna, with double or multiple-lane roads.
- Different types of roads in Bihar include National Highways (NH), State Highways (SH), Major District Roads (MDR), Rural Roads, Urban Roads, and Project Roads.
- Bihar ranks third in India in terms of road density, with a total road density of 3166.9 km per 1000 sq. km. of geographical area in 2019.
- The Bharatmala project has sanctioned 26 projects in Bihar, involving 1652 km of road length at an estimated cost of Rs. 49,612 crore.
- The Bihar Rajya Pul Nirman Nigam Limited has constructed 1058 bridges in the state.
- The Indo-Nepal Border Road Project aims to boost security measures along the international border between India and Nepal and provides livelihood opportunities to surrounding habitats.
- Bihar has made significant public investment in rural road networks.
- The National Highways (NH) in Bihar carry about 40 percent of the total road traffic and efforts have been made to improve their spread in the state.
- The road infrastructure development in Bihar has facilitated smooth traffic flow and provided growth momentum to the state's economy.

Challenges of Infrastructure in Bihar:

Challenges of Infrastructure in Bihar:

1. Road Infrastructure Development:

- Need for continuous construction and widening of roads to accommodate increasing traffic and ensure smooth transportation.
- Addressing the challenge of maintaining road quality and durability, especially during monsoon seasons.
- Improving connectivity to remote and inaccessible rural areas through the construction of bridges and roads.

2. Bridge Construction:

- Building bridges over rivers, roads, and railways to ensure seamless connectivity.
- Addressing the financial challenges associated with bridge construction, including securing funding and cost-sharing arrangements.

3. National Highways Development:

- Expanding and upgrading single or intermediate lane roads into double or multiple lane National Highways.
- Ensuring optimal resource allocation and effective implementation of the Bharatmala project to bridge infrastructural gaps and improve connectivity.

4. Building Construction:

- Constructing high-quality buildings at various levels, including administrative, social, and cultural infrastructures.
- Ensuring efficient utilization of funds and timely completion of construction projects.
- Balancing the need for infrastructure development with environmental sustainability and preservation of heritage sites.

5. Rural Road Connectivity:

- Strengthening rural road infrastructure to support the rural economy and expand livelihood opportunities.
- Increasing public investment in rural roads and implementing maintenance policies to ensure road quality.
- Overcoming geographical challenges and improving connectivity to remote rural areas.

6. Bihar Rajya Pul Nirman Nigam Limited (BRPNL):

- Managing the construction of bridges with an estimated cost of more than Rs. 25 lakh.
- Ensuring efficient project execution, timely completion, and quality control.
- Addressing financial challenges and securing funds for bridge construction projects.

7. Intra-State Road Network:

- Widening and upgrading State Highways (SH) and Major District Roads (MDR) to improve road capacity and connectivity.
- Addressing the challenge of single or intermediate lane roads in SH and MDR networks.
- Implementing initiatives like 'Sulabh Samparkata' to improve the quality of single-lane roads.

8. Indo-Nepal Border Road Project:

- Ensuring the smooth construction of roads along the international border between India and Nepal.
- Addressing security concerns and facilitating effective patrolling by Sashastra Seema Bal (SSB).
- Overcoming geographical and logistical challenges in constructing roads in border areas.

These challenges require strategic planning, efficient resource allocation, and effective implementation to overcome and further develop the infrastructure in Bihar.

Suggestive Measures to Improve Infrastructure in Bihar:

1. Road Infrastructure Development:

- Continuous construction and widening of roads to accommodate increasing traffic and ensure smooth transportation.
- Focus on maintaining road quality and durability, especially during monsoon seasons.
- Enhance connectivity to remote and inaccessible rural areas through the construction of bridges and roads.

2. National Highways Development:

- Expand and upgrade single or intermediate lane National Highways (NH) into double or multiple lanes.
- Optimize resource allocation and effective implementation of the Bharatmala project to bridge infrastructural gaps and improve connectivity.
- Complete ongoing NH projects and prioritize timely completion of remaining projects.

3. Rural Road Connectivity:

- Strengthen rural road infrastructure through increased public investment.
- Implement an Annual Maintenance Policy to ensure the quality and maintenance of rural roads.
- Focus on connecting each and every habitation with a well-maintained rural road network.

4. Building Construction:

- Continue constructing high-quality buildings at various levels, including administrative, social, and cultural infrastructures.
- Incorporate modern amenities like wi-fi, CCTV cameras, and video conference rooms in office buildings to enhance work efficiency.
- Ensure efficient utilization of funds and timely completion of construction projects.

5. Bridge Construction:

- Build bridges over rivers, roads, and railways to improve connectivity and ensure smooth transportation.
- Explore different modes of financing for bridge construction, including state schemes and cost-sharing arrangements with railways.
- Prioritize the completion of ongoing bridge projects and expedite the construction of new bridges.

6. Bihar Rajya Pul Nirman Nigam Limited (BRPNNL):

- Strengthen the capacity of BRPNNL to efficiently construct bridges and roads.
- Ensure timely completion of bridge projects and maintain quality standards.
- Secure adequate funding for bridge construction and explore partnerships with other agencies for project execution.

7. Indo-Nepal Border Road Project:

- Prioritize the construction of roads along the international border between India and Nepal to enhance security measures and promote trade.
- Collaborate with neighboring states and central agencies to ensure smooth implementation of the project.
- Focus on safe and efficient transportation for effective patrolling by Sashastra Seema Bal (SSB).

8. Efficient Resource Allocation:

- Optimize resource allocation for infrastructure development projects.
- Prioritize projects based on their impact on economic growth, connectivity, and public welfare.
- Ensure transparency and accountability in the allocation and utilization of resources.

These measures, if implemented effectively, can contribute to the improvement of infrastructure in Bihar, enhancing connectivity, promoting economic growth, and improving the quality of life for its residents.



Awards and Recognition:

- Received 9 national e-governance awards since 2007, including Oracle E-Governance Excellence Award and Prime Minister National Award for Excellence in Public Administration.

ICT Infrastructure:

- High tele-density (50.7 connections per 100 persons).
- 98.7% Bharat Net coverage in Gram Panchayats.
- One-third population with internet access.

Aadhaar Enrollment:

- 86% enrollment facilitating Aadhaar-based e-governance programs.

Mobile Presence and Internet Connectivity:

- Tele-density of 50.6 indicating mobile presence.
- 31.0% internet connectivity coverage in households.

E-Governance Initiatives:

- Implemented initiatives like CCTNS, e-GramSwaraj, Bihar Fire Service Automation, and AEBAS.

Service Delivery:

- Service Plus platform processing 1.4 lakh applications daily for government services.

Fiscal Governance:

- Systems like CFMS and PFMS offering real-time financial data.

Green Initiatives:

- Forest Management Information System managing forest activities and eco-tourism.

Challenges of E-governance in Bihar

1. Infrastructure: While Bihar has made significant progress in ICT infrastructure, there may still be areas with limited connectivity or inadequate internet access. Ensuring widespread and reliable infrastructure across both urban and rural areas can be a challenge.

2. Digital Literacy: The successful implementation of e-governance initiatives relies on the digital literacy of the population. It is essential to provide training and support to ensure that citizens and government officials are proficient in using digital platforms and services.

3. Awareness and Adoption: Promoting awareness and encouraging the adoption of e-governance services among the population can be a challenge. Many people may be unfamiliar with the benefits and functionalities of these services, and efforts are needed to educate and encourage their usage.

4. Data Security and Privacy: With the increasing digitization of government services, ensuring the security and privacy of citizens' data becomes crucial. Robust cybersecurity measures and data protection policies need to be in place to address potential risks and maintain public trust.

5. Resistance to Change: Implementing e-governance initiatives often requires a shift in traditional bureaucratic processes and workflows. Resistance to change from government officials and employees can pose challenges and hinder the smooth adoption of digital platforms.

6. Inclusion and Accessibility: It is important to ensure that e-governance initiatives are inclusive and accessible to all sections of society, including marginalized communities and individuals with disabilities. Efforts should be made to bridge the digital divide and provide equal access to government services.



Some of the major steps taken by the government include:

1. Implementation of E-Governance Schemes:

The State government has introduced various e-governance schemes to address corruption, eliminate middlemen, and prevent ghost beneficiaries. These initiatives have resulted in significant savings in government funds. Bihar has received several national awards for its e-governance efforts, including the Oracle E-Governance Excellence Award and the Prime Minister National Award for Excellence in Public Administration.

2. ICT Infrastructure Development: Bihar has made significant progress in ICT infrastructure, with a high tele-density and internet connectivity. The state has a high number of telephone connections per household, indicating widespread mobile usage. Internet connectivity is also available to almost every household in Bihar. The coverage of Bharat Net, which provides high-speed internet connections, is 98.7% of the Gram Panchayats in Bihar.

3. Law Enforcement and Administration: Bihar has implemented e-governance initiatives to improve law enforcement and administration. Programs such as the Crime and Criminal Tracking Network and System (CCTNS) and the Emergency Response Support System (ERSS) have been introduced to enhance policing and emergency response.

4. Public Service Delivery: Bihar has implemented various online platforms and portals to improve public service delivery. Initiatives such as the Bihar Right to Public Services Act, the Bihar Government Servant Grievance Redressal System, and the Bihar Right to Public Grievance Redressal System allow citizens to access government services and address grievances in a timely manner.

5. Fiscal Governance: The State government has implemented systems like the Comprehensive Financial Management System (CFMS) and the Public Financial Management System (PFMS) to provide real-time information on revenues, expenditures, and debt. These systems help in tracking funds under centrally sponsored schemes and ensure efficient fiscal management.

6. Green Initiatives: Bihar has undertaken green initiatives such as the Forest Management Information System and the Land Possession Certificate system. These initiatives aim to improve the management of forest resources and provide land-related services to citizens.

To improve e-governance in Bihar, several measures can be taken:

1. Strengthen ICT Infrastructure: Continuously invest in improving ICT infrastructure, including internet connectivity and mobile networks, to ensure widespread access to e-governance services. This can involve expanding broadband connectivity, enhancing network coverage in rural areas, and promoting the use of high-speed internet technologies.

2. Enhance Digital Literacy: Conduct awareness campaigns and provide training programs to enhance digital literacy among citizens and government officials. This will enable them to effectively utilize e-governance platforms and services. Focus on educating people about the benefits and functionalities of e-governance, as well as providing guidance on using digital tools and platforms.

3. Ensure Data Security and Privacy: Strengthen cybersecurity measures and data protection policies to ensure the security and privacy of citizens' data. Implement robust security protocols, encryption techniques, and regular audits to safeguard sensitive information. Establish clear guidelines and regulations for data handling and storage to build trust among users.

4. Promote Collaboration and Integration: Foster collaboration among different government departments and agencies to ensure seamless integration of e-governance initiatives. This can involve sharing data and resources, adopting common standards and protocols, and promoting interoperability among different systems. Encourage the use of open data and APIs to facilitate information exchange and service integration.

5. Streamline Service Delivery: Simplify and streamline government services by digitizing processes and eliminating unnecessary paperwork. Implement online platforms and portals for various services, such as citizen registration, application submissions, and grievance redressal. Ensure that these platforms are user-friendly, accessible, and available in local languages to cater to diverse populations.

6. Encourage Citizen Participation: Foster citizen engagement and participation in e-governance initiatives. Seek feedback from citizens through surveys, feedback mechanisms, and public consultations to understand their needs and expectations. Involve citizens in the co-creation and evaluation of e-governance services to ensure their relevance and effectiveness.

7. Continuous Monitoring and Evaluation: Establish a robust monitoring and evaluation framework to assess the impact and effectiveness of e-governance initiatives. Regularly review and analyze data on service usage, citizen feedback, and outcomes to identify areas for improvement. Use this information to make data-driven decisions and refine e-governance strategies.



1. Per Capita Consumption of electricity:

- Increased from 280 kWh in 2017-18 to 329 kWh in 2021-22, indicating a growth of 17.5% in four years.

2. Projected Peak Demand for power:

- Improved from 4965 MW in 2017-18 to 6475 MW in 2021-22, implying a growth of over 30.4% in four years.
- Peak demand met increased from 4535 MW in 2017-18 to 6627 MW in 2021-22, showing a growth of around 46.1%.

3. Aggregate Consumption of electricity:

- Increased from 24.2 thousand MU in 2017-18 to 32.8 thousand MU in 2021-22, indicating a growth of over 35.4% in four years.

4. Generation and Purchase of power:

- Increased from 29,974 MU in 2019-20 to 33,388 MU in 2021-22, implying a growth of 11.4% in two years.

5. Revenue Collection and Cost Coverage:

- Cost coverage improved from 85.2% in 2019-20 to 91.5% in 2021-22.
- The revenue collection has increased along with the increase in energy consumption.

6. Number of Domestic Consumers:

- Increased from 101.4 lakhs in 2017-18 to 160.49 lakhs in 2021-22, indicating a growth of 58.3% in four years.

7. Energy Consumption across Districts:

- Energy consumption levels vary across districts in Bihar.
- The three most prosperous districts in terms of energy consumption in 2021-22 are Patna (5437 MU), Gaya (2018 MU), and Muzaffarpur (1474 MU).
- The three bottom districts in terms of energy consumption are Sheikhpura (249 MU), Arwal (221 MU), and Sheohar (128 MU).
- Lakhisarai (19.0%), Katihar (12.0%), and Sheohar (11.3%) recorded the highest growth rate of energy consumption between 2020-21 and 2021-22.

8. Installed Generating Capacity:

- The total generation capacity of power in Bihar was 6422 MW in March 2021, which increased to 7785 MW in March 2022, indicating a growth of 21%.
- The Central sector has the largest share of 87%, followed by the private sector/IPPs (12%) and State sector (1%).

9. Financial Status of Distribution Companies:

- The cost coverage improved from 85.2% in 2019-20 to 91.5% in 2021-22.

10. Transmission:

- The existing transmission capacity is expected to increase to meet the growing demand for power in Bihar.

The main challenges in ensuring energy security in Bihar are as follows:

1. **Demand-Supply Gap:** Bihar has experienced a rapid increase in electricity demand, and meeting this demand requires a massive addition to the installed generating capacity. The challenge lies in bridging the gap between the increasing demand and the available supply to ensure uninterrupted power supply.

2. **Limited Availability of Natural Energy Sources:** Bihar has limited availability of natural sources of energy, such as hydroelectric power and coal mines. This poses a challenge in generating sufficient power to meet the growing demand.

3. **Transmission and Distribution Losses:** Bihar faces challenges in reducing Aggregate Technical and Commercial (AT&C) losses to pan-India levels of 12-15% by 2024-25. These losses occur during the transmission and distribution of electricity and can be attributed to technical inefficiencies, theft, and non-payment by consumers.

4. **Infrastructure Development:** Ensuring reliable power supply requires the development and strengthening of transmission and distribution infrastructure. This includes the construction of new power substations, HT/LT lines, and distribution substations, as well as the augmentation of existing infrastructure.

5. **Financial Sustainability:** Achieving financial sustainability in the distribution sector is crucial for ensuring reliable power supply. The challenge lies in reducing the gap between the Average Cost of Supply (ACS) and Average Revenue Realized (ARR) to zero by 2024-25. This requires efficient revenue collection, cost coverage, and reduction in losses.



6. Implementation of Smart Metering: The implementation of smart metering with prepaid functionality is a challenge that needs to be addressed. It involves the installation of smart meters for accurate billing, efficient collection, and effective management of electricity consumption.

7. Availability of Funds: The development of the energy sector requires significant investments. Ensuring the availability of funds for capacity addition, infrastructure development, and implementation of schemes and initiatives is a challenge that needs to be overcome.

Addressing these challenges requires a comprehensive approach, including capacity addition, infrastructure development, reduction of losses, financial sustainability, and efficient implementation of schemes and initiatives. The State government of Bihar has been taking proactive measures to overcome these challenges and ensure reliable 24X7 energy supply to every household.

Bihar's State government is actively securing energy resources through several strategies:

Increased Power Availability: A significant boost in power demand and supply has been achieved, with a 30.4% rise in projected peak demand and a 46.1% increase in met demand from 2017-18 to 2021-22.

Capacity Expansion: The state has augmented its power generation capacity by 21% in just one year, with plans to add another 5841 MW by 2024-25, aiming to bridge the demand-supply gap.

Promotion of Renewable Energy: Initiatives like BREDA are promoting solar power projects, contributing to a cleaner environment and reduced carbon emissions.

Transmission Network Strengthening: Recognizing the importance of robust transmission, Bihar is enhancing its infrastructure to meet growing power needs.

Reformed Distribution Sector: Unbundling the Bihar State Electricity Board into five entities has streamlined electricity-related functions, ensuring more efficient management.

Scheme Implementation: Programs like RE-DDUGJY and SAUBHAGYA aim to electrify rural areas and strengthen the distribution network, emphasizing electricity access to households.

Smart Meter Implementation: Introduction of smart meters with prepaid functionality for accurate billing, better collection, and efficient electricity management, aiding in loss reduction and financial sustainability.

To ensure energy security in Bihar, several measures can be taken:

1. Diversification of Energy Sources: Bihar should focus on diversifying its energy sources to reduce dependence on limited natural resources. This can include promoting renewable energy sources such as solar, wind, and biomass, as well as exploring the potential for hydroelectric power generation.

2. Capacity Addition: The state government should continue to invest in increasing the installed generating capacity to meet the growing demand for power. This can be achieved through the construction of new power plants, both conventional and renewable, and by entering into long-term power purchase agreements.

3. Strengthening Transmission and Distribution Infrastructure: The transmission and distribution infrastructure should be strengthened to ensure efficient and reliable power supply. This includes upgrading and expanding the transmission network, improving substations, and reducing transmission and distribution losses.

4. Promotion of Energy Efficiency: Encouraging energy efficiency measures can help reduce overall energy demand and ensure optimal utilization of available resources. This can be achieved through the implementation of energy-efficient technologies, awareness campaigns, and incentives for energy-efficient practices.

5. Rural Electrification: The government should continue its efforts to achieve universal electrification in rural areas. This can be done through schemes like the Deen Dayal Upadhyaya Gram Jyoti Yojana (DDUGJY) and the Pradhan Mantri Sahaj Bijli Har Ghar Yojana (SAUBHAGYA), which aim to provide electricity connections to all households.

6. Promotion of Energy Conservation: Encouraging energy conservation practices among consumers can help reduce the overall energy demand. This can be achieved through awareness campaigns, energy audits, and incentives for energy-saving measures.

7. Smart Grid Implementation: Implementing smart grid technologies can enhance the efficiency, reliability, and flexibility of the power system. This includes the deployment of smart meters, advanced metering infrastructure, and demand response programs.

8. Strengthening Institutional Framework: The government should ensure a robust institutional framework for the energy sector, including effective regulation, transparent policies, and coordination among various stakeholders. This will help create an enabling environment for investment and development in the energy sector.



ATMs per Branch:

- Public Sector Banks average 1.4 ATMs per branch; Private Sector Banks average 1.1.
- State Bank of India has the highest (2.9), followed by Punjab National Bank and Canara Bank.

Regional Rural Banks (RRBs):

- Bihar has two RRBs: Dakshin Bihar Gramin Bank and Uttar Bihar Gramin Bank.
- RRBs focus on rural areas, offering credit to farmers, artisans, and financially weaker sections.

Rural Infrastructure Development Fund (RIDF):

- RIDF in Bihar allocated 60.7% for rural infrastructure like roads and bridges.
- Funds also support irrigation, agriculture, and social sectors.

The challenges of universal financial inclusion in Bihar can be attributed to several factors:

1. Limited Access to Banking Services: Bihar has a significant rural population, and providing banking services to remote rural areas can be challenging due to inadequate infrastructure and connectivity. This lack of access hinders the ability to reach all eligible individuals and enterprises, particularly those in rural areas.

2. Low Financial Literacy: Financial literacy levels in Bihar may be relatively low, which can pose a challenge to universal financial inclusion. Lack of awareness and understanding of banking products and services may prevent individuals from fully utilizing the available banking facilities.

3. Socio-economic Factors: Bihar has a large population of small and marginal farmers, artisans, and financially weaker sections of society. Economic disparities and limited financial resources can make it difficult for these individuals to access and utilize banking services effectively.

4. Technological Adoption: While there has been an increase in the use of POS machines and digital banking services, there may still be a need to enhance technological adoption and digital literacy among the population. Limited access to smartphones and internet connectivity can further hinder the adoption of digital banking services.

5. Infrastructure Development: Inadequate infrastructure, including physical banking infrastructure and connectivity, can pose challenges in providing universal financial inclusion. The establishment of banking branches and ATMs in remote areas may require significant investment in infrastructure development.

Challenges in providing loans to Farmers

1. Limited Access to Credit: Farmers in Bihar, particularly small and marginal farmers, may face challenges in accessing credit facilities. Limited availability of banking services in rural areas and lack of awareness about loan schemes and procedures can hinder farmers' ability to secure loans.

2. Collateral Requirements: Traditional lending practices often require collateral or security for loans. Small and marginal farmers may struggle to meet these requirements, as they may not possess sufficient assets to offer as collateral. This can make it difficult for them to access formal credit channels.

3. Seasonal Nature of Agriculture: Agriculture is a seasonal activity, and farmers often require loans to meet their agricultural expenses during specific periods. However, the repayment of loans may depend on the income generated from the agricultural produce, which may not align with the loan repayment schedule. This misalignment can create challenges in loan repayment for farmers.

4. Lack of Financial Literacy: Limited financial literacy among farmers can be a challenge in understanding loan terms, interest rates, repayment schedules, and other aspects of borrowing. This lack of knowledge may lead to inappropriate loan utilization or difficulties in managing loan repayments.

5. Vulnerability to Natural Disasters: Bihar is prone to natural disasters such as floods and droughts, which can adversely affect agricultural productivity and income. Farmers may face challenges in repaying loans during such periods of distress, leading to loan defaults.

To improve and achieve universal banking and 100 percent financial inclusion in Bihar, several measures can be considered:

- 1. Enhance Banking Infrastructure:** Expand the physical banking infrastructure by increasing the number of bank branches, especially in rural and underserved areas. This will improve access to banking services for all residents, including farmers, small businesses, and financially weaker sections of society.
- 2. Strengthen Regional Rural Banks (RRBs):** Further strengthen the RRBs in Bihar, such as Dakshin Bihar Gramin Bank and Uttar Bihar Gramin Bank, by providing them with adequate resources and support. This will enable them to expand their branch network, enhance credit facilities, and offer a wider range of banking services to rural areas.
- 3. Promote Financial Literacy:** Conduct financial literacy programs and awareness campaigns to educate individuals, farmers, and small business owners about banking services, loan facilities, and financial management. This will empower them to make informed decisions and effectively utilize banking services.
- 4. Simplify Loan Procedures:** Streamline and simplify loan procedures, especially for farmers and small businesses, to make it easier for them to access credit. Reduce the documentation requirements, collateral demands, and processing time to facilitate faster and hassle-free loan disbursement.
- 5. Digital Banking and Technology Adoption:** Promote digital banking services and encourage the adoption of technology in banking operations. This includes expanding the availability of ATMs, POS machines, and mobile banking facilities. Enhancing digital literacy among the population will enable them to access banking services conveniently and securely.
- 6. Government Support and Incentives:** The government can provide support and incentives to banks and financial institutions to encourage them to extend their services to underserved areas. This can include financial assistance, tax benefits, and policy reforms that promote financial inclusion and universal banking.
- 7. Collaboration and Partnerships:** Foster collaboration between banks, government agencies, non-governmental organizations, and community-based organizations to work together towards achieving universal banking and financial inclusion goals. This can involve joint initiatives, knowledge sharing, and leveraging existing networks to reach the underserved population.

Kisan Credit Cards (KCC) are specialized credit facilities provided to farmers in India, including those in Bihar. These cards aim to meet the short-term credit requirements of farmers for agricultural activities, such as crop production, post-harvest expenses, marketing, and consumption needs. The KCC scheme was introduced by the Government of India in 1998 to provide timely and adequate credit support to farmers.

The KCC scheme is widely implemented across the country, including in Bihar, to support farmers in accessing credit for their agricultural activities. The issuance of Kisan Credit Cards is typically facilitated by various financial institutions, including commercial banks, regional rural banks, and cooperative banks.

The KCC scheme offers several benefits to farmers, such as easy access to credit, flexible repayment options, and interest rate subsidies. These cards enable farmers to have a revolving credit facility, allowing them to withdraw and repay funds as per their agricultural needs. The credit limit on Kisan Credit Cards is determined based on the farmer's landholding, cropping pattern, and other factors.

To obtain a Kisan Credit Card, farmers need to submit relevant documents, including land ownership records, identity proof, and other necessary information as required by the issuing bank. The KCC scheme has played a significant role in providing financial support to farmers and promoting agricultural development in Bihar and other parts of India.



Rural Development

Expenditure on Rural Development:

- State government spends an average of 10.1% of total expenditure on rural development, double the national average of 4.8%.
- 2021-22 saw Rs. 15.6 thousand crore spent on rural development, an 18.6% increase from 2019-20.

Rural Development Programs:

- Bihar Rural Livelihood Project (BRLP) (JEEVIKA), MGNREGS, IAY/PMAY-G, and PDS contribute significantly to livelihood improvement, employment, and food security.
- Focus on effective functioning of Panchayati Raj Institutions (PRIs) for scheme implementation.

Financial Progress of Programs:

- Rurban Mission and Lohiya Swachh Bihar Abhiyan show substantial investments and progress.

MGNREGS Implementation:

- Successfully implemented, aiming to provide 100 days of wage employment in rural areas.

Food Distribution:

- Food Corporation of India (FCI) ensures ample food grains with significant allotments to Bihar.

Grants and Expenditure at PRI Levels:

- Increasing grants received at Gram Panchayat, Panchayat Samiti, and Zila Parishad levels for rural development initiatives

The **challenges in promoting rural development in Bihar** are multifaceted and encompass various aspects of infrastructure, social development, and economic empowerment. Some of the key challenges include:

1. Infrastructure Development: Bihar faces challenges in developing and maintaining essential rural infrastructure such as roads, electricity, and water supply. Inadequate infrastructure hinders the overall development of rural areas and affects the quality of life for rural residents.

2. Poverty Alleviation: Bihar has a high incidence of poverty, particularly in rural areas. Promoting sustainable livelihoods and income generation opportunities for rural households is a significant challenge, requiring targeted interventions and support.

3. Agricultural Productivity: Enhancing agricultural productivity and modernizing farming practices is crucial for rural development in Bihar. Challenges such as fragmented land holdings, lack of access to modern technology, and vulnerability to climate change impact the agricultural sector.

4. Social Empowerment: Addressing social disparities, including issues related to gender inequality, caste-based discrimination, and access to education and healthcare, is essential for holistic rural development.

5. Employment Generation: Providing meaningful employment opportunities and skill development for rural youth and adults is a critical challenge. The Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) has been instrumental, but sustaining long-term employment remains a challenge.

6. Access to Financial Services: Ensuring access to financial services, credit, and banking facilities for rural communities is crucial for promoting entrepreneurship and economic growth in rural areas.

7. Sanitation and Health: Improving sanitation facilities, access to clean water, and healthcare services in rural areas is essential for enhancing the overall well-being and quality of life for rural residents.

8. Environmental Sustainability: Balancing economic development with environmental sustainability is a challenge, particularly in the context of agricultural practices, natural resource management, and climate change adaptation.



The Bihar government has implemented several initiatives to promote rural development, focusing on various aspects such as livelihood improvement, housing, sanitation, infrastructure development, and social empowerment. Some of the key initiatives include:

1. Bihar Rural Livelihood Project (BRLP)

(JEEVIKA): This project has been instrumental in mobilizing resources at the community level and improving the livelihoods of rural people. It focuses on poverty alleviation, livelihood diversification, and social and economic empowerment for marginalized and ultra-poor households.

2. Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS):

This scheme plays a major role in providing unskilled/manual employment to people willing to work, enhancing livelihood security in rural areas.

3. Indira Awas Yojana / Pradhan Mantri Awas Yojana-Gramin (IAY/PMAY-G):

This scheme aims to improve housing conditions in rural areas, addressing the housing needs of rural communities.

4. Public Distribution System (PDS): The State government runs the PDS to ensure food security and nutritional security for rural communities, addressing the essential needs of the rural population.

5. Rurban and Lohiya Missions: These missions focus on improving rural infrastructure and living conditions, promoting sustainable development in rural areas.

6. Lohiya Swachh Bihar Abhiyan: This initiative aims to achieve the goal of 'Swachh Gaon-Samridh Gaon' by implementing solid and liquid waste management in a phased manner, contributing to rural sanitation and environmental sustainability.

7. Saat Nishchay-2: Under this resolution, the State government has taken a resolution of 'Swachh Gaon- Samridh Gaon', focusing on rural sanitation and prosperity.

To promote rural development in Bihar, several measures can be considered. These measures include:

1. Strengthening Livelihood Programs:

Enhancing and expanding livelihood programs such as the Bihar Rural Livelihood Project (JEEVIKA) and the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) to provide sustainable employment and income opportunities for rural residents.

2. Housing and Sanitation Initiatives: Continued focus on housing improvement initiatives such as the Indira Awas Yojana / Pradhan Mantri Awas Yojana-Gramin (IAY/PMAY-G) and sanitation programs like the Lohiya Swachh Bihar Abhiyan to address housing and sanitation needs in rural areas.

3. Infrastructure Development: Investing in rural infrastructure, including roads, electricity, and water supply, to improve connectivity and access to essential services in rural communities.

4. Social Empowerment: Implementing measures to address social disparities, including gender inequality, caste-based discrimination, and access to education and healthcare, to promote social inclusion and empowerment.

5. Financial Inclusion: Ensuring access to financial services, credit, and banking facilities for rural communities to promote entrepreneurship and economic growth.

6. Environmental Sustainability: Promoting sustainable agricultural practices, natural resource management, and climate change adaptation to balance economic development with environmental sustainability.

7. Capacity Building and Skill Development: Providing training and skill development programs to enhance the capabilities of rural residents, enabling them to access better employment opportunities and improve their livelihoods.

8. Strengthening Panchayati Raj Institutions (PRIs): Supporting the effective functioning of PRIs to ensure grassroots participation in administration and implementation, as well as providing adequate financial resources to local bodies for rural development initiatives.



Urban Development

- ✚ In 2011, Bihar's urban population accounted for 11.3% of the total population (11.8 million residents).
- ✚ By 2022, Bihar's urban population grew to 20.2 million, raising the urbanization rate to 16.2%.
- ✚ Bihar's urbanization has shown a moderate expansion over the years.
- ✚ From 1961 to 2022, Bihar's urbanization increased from 7.4% to 16.2%, with an average annual growth of about 1.8 percentage points per decade.
- ✚ The State government has increased its allocation for urban development, resulting in a 77.1% expenditure increase to Rs. 5001.3 crore in 2020-21.
- ✚ Bihar's urban population constitutes approximately 4.2% of India's total urban populace in 2022.
- ✚ In 2011, India's urbanization rate was 31.2%, significantly higher than Bihar's urbanization rate of 16.2% in 2022.

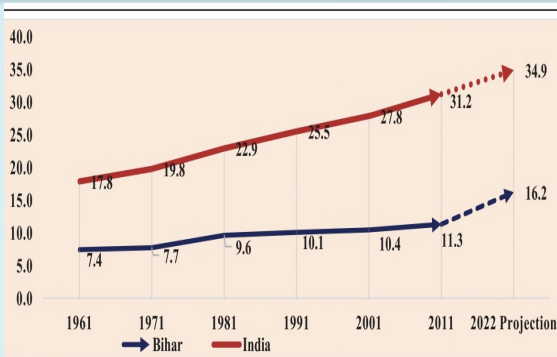


Table 10.1 : Urbanisation Trend in Bihar and India (1961 to 2022)

Year	1961	1971	1981	1991	2001	2011	2022 (Projection)
Urban Population (million)							
Bihar	2.6	3.2	5.0	6.5	8.7	11.8	20.2
India	79.0	109.1	159.5	217.2	286.1	377.1	480.9
Level of Urbanisation (%)							
Bihar	7.4	7.7	9.6	10.1	10.4	11.3	16.2
India	17.8	19.8	22.9	25.5	27.8	31.2	34.9

The challenges in promoting urbanization in Bihar include:

1. Discrepancy in Urbanization Rate: Despite the rapid growth of Bihar's urban economy, the level of urbanization has not reflected this trend, as indicated by the census figures of 2001 and 2011. This discrepancy highlights the challenge of aligning urbanization with economic growth.

2. Infrastructure Development: The need for substantial investment in urban infrastructure, including sewerage infrastructure, solid and liquid waste management, and stormwater drainage, to support the growing urban population and ensure sustainable urban development.

3. Housing and Basic Amenities: Providing adequate housing facilities and amenities for the increasing urban population, as shelter is a basic human need. The 'Housing for All' Mission and the Bihar State Housing Board's initiatives aim to address this challenge.

4. Livelihood Support: Supporting the livelihoods of the urban poor, including street vendors, through programs such as the Deendayal Antyodaya Yojana and the National Urban Livelihoods Mission, to ensure inclusive urban development.

5. Environmental Conservation: Balancing urbanization with environmental conservation, particularly in the context of the Namami Gange Programme, which aims to conserve and rejuvenate the Ganga river while addressing urban development needs.

6. Policy Implementation: Ensuring effective implementation of urban development policies and programs, including joint initiatives funded by both the Central and State governments, to address the specific challenges of urbanization in Bihar.



Suggestive measures to improve urbanization in Bihar include:

1. Infrastructure Development: Invest in urban infrastructure, including sewerage infrastructure, solid and liquid waste management, stormwater drainage, and housing facilities to support the growing urban population and ensure sustainable urban development.

2. Livelihood Support: Implement programs to support the livelihoods of the urban poor, including street vendors, through financial inclusion, training, and insurance coverage, facilitating their access to suitable spaces and institutional credit.

3. Environmental Conservation: Balance urbanization with environmental conservation, particularly in the context of riverfront development and the Namami Gange Programme, aimed at conserving and rejuvenating the Ganga river while addressing urban development needs.

4. Policy Implementation: Ensure effective implementation of urban development policies and programs, including joint initiatives funded by both the Central and State governments, to address the specific challenges of urbanization in Bihar.

5. Urban Infrastructure and Amenities: Continue the construction of multi-purpose buildings, riverfront development, stormwater drainage, and provision of clean drinking water to households, as well as the installation of street lights and the development of crematoriums to improve urban amenities.

6. Jointly Funded Urban Development Programs: Continue to implement joint urban development programs with the Central government, such as the Namami Gange Programme, Deendayal Antyodaya Yojana, Swachh Bharat Mission, Pradhan Mantri Awas Yojana, Atal Mission for Rejuvenation and Urban Transformation, Smart City Mission, and Heritage City Development and Augmentation Yojana, to improve living conditions in urban areas.

Relationship among urbanization, industry, and infrastructure development in Bihar:

Urbanization and Infrastructure Development:

- The State government has been implementing various urban development programs to provide better living conditions in urban areas.
- The Urban Development and Housing department has been allocating significant funds for urban development and housing, with a focus on improving infrastructure and amenities in urban areas.
- The Mukhya Mantra Shahri Peyajal Nishchay Yojana aims to provide clean drinking water to households in urban areas, reducing dependency on hand pumps.

Urbanization and Industry:

- The Smart City Mission seeks to promote cities that provide core infrastructure and a decent quality of life, attracting investment and fostering industrial growth in urban centers.
- The Bihar Industrial Investment Promotion Policy has attracted significant investment proposals, particularly in sectors such as food processing and renewable energy, contributing to industrial growth in urban areas.

Industry and Infrastructure Development:

- The State government's focus on physical infrastructure, including road transportation, bridges, and urban infrastructure, has facilitated industries, farms, and the services sector.
- The Bihar Rajya Pul Nirman Nigam Limited has been instrumental in constructing bridges and roads, contributing to the development of infrastructure that supports industrial activities.
- The development of road infrastructure, including the Bihar State Highways Project, has been a significant growth driver for the state's economy, supporting industrial and agricultural activities.

Overall, the relationship among urbanization, industry, and infrastructure development in Bihar is interconnected, with urbanization driving industrial growth and infrastructure development supporting both urban and industrial activities.



Human Development

📌 **Population Growth:** Bihar's population has witnessed a remarkable increase, almost doubling from 2.94 crore in 1951 to 10.41 crore in 2011. The decadal growth rate during 2001-2011 was 25.1%, higher than the national average of 17.6%.

📌 **Urbanization:** The urban population in Bihar has been growing at a faster pace compared to the rural population. In 2011, the urbanization rate was 11.3%, lower than the national average of 31.2%. However, in recent years, Bihar has experienced an increase in urbanization, with the rate reaching 16.2%, narrowing the gap with the national average.

📌 **Sex Ratio:** Bihar's sex ratio in 2011 was 918, lower than the national average of 943. However, the state performed better in terms of child sex ratio, with a ratio of 935 compared to the national average of 919.

📌 **Population Density:** Bihar has a high population density, with 1106 persons per sq. km in 2011, which is about three times higher than the national average of 382 persons per sq. km.

📌 **Education:** Bihar has made progress in literacy rates, particularly in districts like Patna, Nalanda, and Bhojpur. These districts witnessed an increase in literacy rates between 2001 and 2011. As of 2021-22, Bihar has a total of 3.51 lakh teachers, with 1.29 lakh in primary schools and 2.22 lakh in upper primary schools.

📌 **Health Infrastructure:** The availability of health institutions varies across districts in Bihar, leading to disparities in healthcare facilities. Detailed district-wise data on health institutions, literacy rates, and population by age structure are available in the document.

The challenges of human development in Bihar are as follows:

1. **Population Growth:** Bihar has experienced significant population growth, leading to challenges in providing essential services such as education, healthcare, and employment opportunities to a large and growing population.

2. **Urbanization:** The rapid increase in urban population in Bihar poses challenges in terms of providing adequate infrastructure, services, and employment opportunities in urban areas.

3. **Demographic Disparities:** Disparities in per capita income, consumption, education, and healthcare facilities between rural and urban areas pose challenges for equitable human development.

4. **Gender Disparities:** Despite improvements in the child sex ratio, Bihar still faces challenges related to gender disparities, particularly in education and employment opportunities for women.

5. **Education and Health Infrastructure:** The state needs to address challenges related to the quality and accessibility of education and healthcare services, particularly in rural areas.

6. **Social Welfare and Empowerment:** Ensuring equitable distribution of opportunities and social welfare for all sections of society, including marginalized communities, remains a challenge.

7. **Infrastructure Development:** Bihar needs to focus on developing and upgrading social infrastructure, including education, health, water supply, and sanitation, to support human development.



To improve human development in Bihar, several measures can be considered across various dimensions. These measures include:

1. Enhancing Education Infrastructure:

Focus on expanding and upgrading educational institutions, particularly in rural areas, to ensure equitable access to quality education. This includes the provision of vocational and technical education, as well as teacher training programs.

2. Health Infrastructure Development: Invest in improving healthcare facilities, particularly in rural and underserved areas, to ensure access to quality healthcare services. This includes the establishment of health institutions and the provision of essential medical equipment and facilities.

3. Women Empowerment Initiatives:

Strengthen and implement policies and programs aimed at promoting gender equality, women's empowerment, and social inclusion. This may involve initiatives to enhance women's participation in decision-making processes and economic activities.

4. Social Welfare Programs: Expand and strengthen social welfare programs targeting marginalized sections of society, including SC, ST, minorities, and persons with disabilities, to ensure equitable distribution of opportunities and resources.

5. Infrastructure Development: Focus on improving social infrastructure such as water supply, sanitation, and housing, particularly in rural and urban areas, to enhance the standard of living and overall well-being of the population.

6. Capacity Building and Training:

Implement training programs and capacity-building initiatives to enhance the skills and capabilities of the workforce, particularly in sectors such as education, healthcare, and social welfare.

7. Monitoring and Evaluation: Establish robust monitoring and evaluation mechanisms to assess the impact of development initiatives and ensure effective implementation of policies and programs.



**Human
Development**



**Human Resource
Development**

Human Development:

- **Holistic Approach:** Human development refers to the broader and holistic enhancement of human lives, focusing on improving people's well-being in various aspects such as health, education, standard of living, social inclusion, and overall quality of life.
- **Multidimensional:** It encompasses dimensions like longevity, knowledge, decent living standards, access to opportunities, and social welfare, aiming for an individual's overall betterment.
- **Societal Focus:** It emphasizes creating a conducive environment for individual growth and societal advancement, aiming for a better quality of life for all members of society.
- **Long-term Perspective:** Human development aims for sustainable improvements in human capabilities and the overall welfare of communities and societies.















Human Resource Development:

- **Skill and Capacity Building:** Human resource development focuses more specifically on the enhancement of skills, knowledge, and abilities of individuals within the context of employment, career growth, and organizational performance.
- **Workforce-Centric:** It's often centered around optimizing the potential of individuals within a workforce, emphasizing training, education, skill development, and talent management to drive organizational success.
- **Economic Emphasis:** While contributing to individual growth, it primarily aligns with organizational or economic goals by harnessing human potential for productivity and efficiency.
- **Short-to-Medium Term Goals:** Human resource development often has shorter-term goals linked to immediate skill enhancement and organizational effectiveness.





Child Development in Bihar : Key Points

- **Population Growth:** Child population increased from 8.30 crore to 10.41 crore from 2001 to 2011, with the 0-6 age group accounting for 40.6% in 2001 and 38.4% in 2011.   
- **Adolescent Population:** Adolescent population increased from 1.83 crore in 2001 to 2.34 crore in 2011, with a marginal increase in their share of the total population.  
- **Sex Ratio at Birth:** Fluctuations in the sex ratio at birth, with an increase from 826 females per 1000 males in 2001 to 854 in 2011. ♀ 
- **Child Protection:** Initiatives like the Child Protection Service (CPS) Scheme and child-friendly courts aim to provide security and address cases related to child abuse and exploitation.  
- **Child Health:** Fluctuations in malnutrition and anaemia prevalence, with a decrease in anaemia prevalence from 78.0% in 2005-06 to 69.4% in 2019-21.  
- **Education Initiatives:** Bihar Career Guidance Programme and Scheme for Adolescent Girls provide career awareness, IT training, and support for out-of-school girls.  
- **Progress and Challenges:** Bihar's child development reflects a mix of progress and challenges, with various initiatives addressing the diverse needs of children.  

Challenges of Child Development in Bihar

Child Protection:

- Ensuring the protection of 48 percent of the young population of Bihar from violence, exploitation, and discrimination.
- Collaborative initiatives and path-breaking policies and programs to address pressing child rights issues.
- Implementation of the Child Protection Service (CPS) Scheme to provide a security net to children in difficult circumstances.

Health Challenges:

- High prevalence of malnutrition and anaemia among children under five years of age in various districts of Bihar.
- The prevalence of anaemia in Bihar increased from 63.5 percent in 2015-16 to 69.4 percent in 2019-21, indicating a rise in the percentage of anaemic children.

Education and Special Needs:

- Provision of quality education for children with special needs and their inclusion in mainstream schools.

- Implementation of vocational training programs and schemes such as SPARSH, Manovikas, Gamak Utkarsh, and Vani Vikas for children with special needs.

Adolescent Participation:

- Ensuring active involvement of adolescents in the schooling system and providing a supportive environment for out-of-school adolescent girls through the Scheme for Adolescent Girls.
- Empowering adolescents and nurturing positive relationships among children, adults, and communities to facilitate their participation in decision-making processes.

Sex Ratio and Demographic Challenges:

- Fluctuations in the sex ratio at birth in Bihar, with a decline in recent years, posing a concern for the state government.
- Addressing the challenges related to sex ratio and demographic profile of children in Bihar, including the distribution of child population by various age groups.



The Bihar government has implemented various initiatives and schemes to improve child development in the state. Some of the key measures taken by the Bihar government include:

1. Child Protection:

- **Implementation of the Child Protection Service (CPS) Scheme** to provide a security net to children in difficult circumstances and reduce vulnerabilities that lead to abuse, neglect, exploitation, and abandonment.

- Establishment of child-friendly courts in 37 judicial districts of Bihar, with plans to establish additional courts in districts with high pending cases related to the Protection of Children from Sexual Offences (POCSO).

2. Development of Children with Special Needs:

- Provision of special residential and non-residential training for visually impaired, mentally retarded, and speech-impaired children to facilitate their inclusion in mainstream schools.

- Providing necessary tools and equipment such as braille printed material, braille slate, abacus, and wheelchairs to children with special needs.

3. Bihar Career Guidance Programme:

- Implementation of a program to provide career awareness and IT skills training for students in their final year of schooling, offering information on careers, college details, entrance exams, and scholarships through an online portal.

4. Scheme for Adolescent Girls (SAG):

- Implementation of the Scheme for Adolescent Girls to provide a supportive environment for out-of-school adolescent girls, focusing on their nutrition and non-nutrition needs.

5. Integrated Child Development Services (ICDS):

- Implementation of the ICDS scheme to provide a package of services including supplementary nutrition, non-formal preschool education, immunization, health check-ups, referral services, and nutrition and health education for mothers and children in the age group of 0-6 years.

6. Child Participation:

- Provision of schemes for child participation in decision-making processes to ensure their active involvement in planning processes, such as the Kishori Manch program aimed at increasing the attendance of girl students in secondary schools and ensuring their participation.

To improve child development in Bihar, several measures can be implemented across various domains such as child protection, health, education, and participation. Some of the suggested measures include:

Child Protection:

1. Strengthening the implementation of the Child Protection Service (CPS) Scheme to provide a security net to children in difficult circumstances and reduce vulnerabilities that lead to abuse, neglect, exploitation, and abandonment.

2. Expansion of child-friendly courts in judicial districts to address pending cases related to the Protection of Children from Sexual Offences (POCSO) and ensure timely justice for child victims.

Development of Children with Special Needs:

1. Enhancing the provision of special residential and non-residential training for visually impaired, mentally retarded, and speech-impaired children to facilitate their inclusion in mainstream schools.

2. Ensuring the availability of necessary tools and equipment such as braille printed material, braille slate, abacus, and wheelchairs for children with special needs.

Health and Nutrition:

1. Implementing targeted interventions to address malnutrition and anaemia among children under five years of age, focusing on districts with higher prevalence rates.

2. Strengthening the Integrated Child Development Services (ICDS) scheme to provide a package of services including supplementary nutrition, non-formal preschool education, immunization, health check-ups, referral services, and nutrition and health education for mothers and children in the age group of 0-6 years.

Education and Career Guidance:

1. Expanding the Bihar Career Guidance Programme to provide career awareness and IT skills training for students in their final year of schooling, offering information on careers, college details, entrance exams, and scholarships through an online portal.

2. Ensuring the effective implementation of the Scheme for Adolescent Girls (SAG) to provide a supportive environment for out-of-school adolescent girls, focusing on their nutrition and non-nutrition needs.

Child Participation:

1. Facilitating child participation in decision-making processes within families, schools, local communities, institutions, government policies, and judicial procedures, as per the core principles of the United Nations Convention on the Rights of the Child (UNCRC).

2. Strengthening initiatives such as the Kishori Manch program to increase the attendance of girl students in secondary schools and ensure their active participation in school management.





- 🌱 Bihar prioritizes economically sustainable growth and environmental conservation, investing in ecological balance, wildlife protection, and biodiversity through the Department of Environment, Forest, and Climate Change.
- ☁️ Bihar experienced 31% higher rainfall in 2021, with extreme temperatures, leading to the establishment of the Climate Change Learning Lab and initiatives to involve stakeholders in climate action.
- 🚫 Bihar has prohibited the production, importation, and use of single-use plastics since July 1, 2022, to address environmental concerns.
- 🌀 The state allocated funds for disaster management and relief aid, recognizing its vulnerability to natural calamities such as earthquakes, floods, droughts, thunderstorms, and heatwaves.
- 🌳 Bihar's forestry and logging sectors contributed to 1.6% of the Gross State Value Addition (GSVA) over the last five years, with efforts to conserve forest resources and increase forest carbon stock.
- 🌿 Bihar has 4416 wetlands, and the state is revising its State Action Plan on Climate Change (SAPCC) to address climate risks and vulnerabilities.
- 🌫️ The state monitors ambient air quality, tracking pollutants such as PM10, PM2.5, CO, SO2, NO2, NH3, and Benzene.

Challenges Posed by Climate Change and Environmental Issues in Bihar:

1. Population Pressure and Resource Scarcity:

- Bihar faces challenges from the pressures of a growing population and resource scarcity, which strain the state's ability to meet the needs of its inhabitants.

2. Growing Emissions and Climate Change:

- The state is experiencing the impacts of growing emissions and climate change, leading to increased climate hazards and natural disasters, such as floods, droughts, thunderstorms, and heatwaves.

3. Covid-19 Pandemic:

- The effects of the Covid-19 pandemic have compounded the challenges posed by climate change and environmental issues, further impacting the state's ability to address these complex problems.

4. Socio-economic Vulnerabilities:

- There is a pressing need to integrate climate action into economic growth to minimize the socio-economic vulnerabilities of the people, particularly the poor, and enhance their food and livelihood security.

5. Environmental Pollution:

- Bihar is striving to maintain economic growth while prioritizing the sustainable use of natural resources, conservation of wildlife and biodiversity, and minimizing environmental pollution.

6. Natural Calamities:

- The state is vulnerable to a number of natural calamities, including earthquakes, floods, and heatwaves, due to its geographic location and hydro-meteorological unpredictability. The frequency and severity of these climate-related disasters are increasing in Bihar.

7. Loss of Life and Property:

- Bihar has experienced significant loss of life and property due to natural disasters, with flood-induced damage affecting a total of 32 districts, leading to substantial loss in crop production and affecting a large area of cropped land.

8. Forest Conservation and Management:

- The state faces challenges related to forest fires, forest resource scarcity, and the diversion of forest land for various purposes, which are depleting the forest resources and impacting biodiversity and ecosystem health.

Initiatives by Bihar Government

The Bihar government has undertaken several initiatives to address environmental sustainability, climate change, disaster management, and conservation efforts in the state. Some of the key initiatives include:

1. **Jal-Jeevan-Hariyali Abhiyan:** This initiative, started in 2019, focuses on creating awareness about tree plantations, water conservation, and environmental protection to increase greenery in the state. It aims to increase the income of farmers through agro-forestry and has set a huge plantation target.



2. Bamboo Mission: Under this project, bamboo is being planted on government land and farmers' land, with the Union Ministry of Agriculture and Farmers Welfare approving a grant for the National Bamboo Mission Scheme in Bihar.

3. Bihar State Action Plan on Climate Change (SAPCC): The state formulated its SAPCC in 2015, aligning with the National Action Plan on Climate Change. The plan is being revised for 2020-2030 to address existing climate risks and vulnerabilities and enhance climate resilience through collective actions.

4. Climate Change Learning Lab at Patna Zoo: The Department of Environment, Forest, and Climate Change, in partnership with the 'Strategic Partnership for the Implementation of the Paris Agreement' project, has set up a Climate Change Learning Lab at Patna Zoo to provide climate change-related information and strengthen the learning process for various stakeholders.

5. Wetland Conservation and Development: Bihar is focusing on conserving and developing wetlands, with a significant number of natural and man-made wetlands in the state. The conservation efforts aim to protect the ecological significance of these wetlands.

6. Disaster Management: The state government has allocated substantial funds for managing various disasters and providing relief aid. It has also prepared a 15-year Disaster Risk Reduction Roadmap for Bihar, emphasizing a community-centric approach for managing catastrophes, particularly floods in rural areas.

These initiatives reflect the Bihar government's commitment to addressing environmental and climate-related challenges, promoting sustainable development, and enhancing the state's resilience to natural disasters.

Measures to Tackle Climate Change-Induced Problems in Bihar:

1. Disaster Risk Reduction and Management:

- Implement a community-centric approach for managing climate-related catastrophes, particularly floods in rural areas, as outlined in the 15-year Disaster Risk Reduction Roadmap for Bihar.
- Allocate funds for disaster management, including agricultural input subsidy, distribution of Gratuitous Relief, and assistance for the repair of embankments and irrigation systems.

2. Water Conservation and Management:

- Develop traditional water sources and water harvesting and storage structures under the Jal-Jeevan-Hariyali Abhiyan to address the water crisis caused by rapid climate change and inadequate rainfall.
- Construct storage reservoirs under the Ganga Jal Apurti Scheme to provide safe drinking water and minimize the state's reliance on groundwater resources.

3. Forest Conservation and Management:

- Increase green cover through plantation activities in farms and other open places to enhance carbon stock and mitigate the ill-effects of climate change.
- Implement measures to reduce forest fires, such as construction of infrastructure and protection, conservation, and development of wildlife in various forest divisions of the state.

4. Wetland Conservation and Development:

- Focus on conserving and developing wetlands, including natural wetlands and man-made reservoirs, to protect the ecological significance of these areas.
- Provide budgetary provisions for tackling issues of climate change, conservation of the ecosystem, protection of biodiversity, and control of pollution.

5. Sustainable Economic Growth and Climate Action:

- Integrate climate action into economic growth to minimize socio-economic vulnerabilities, enhance food and livelihood security, and protect communities against the risk of natural disasters.
- Strengthen the learning process and involvement of different stakeholders in climate action through initiatives like the Climate Change Learning Lab at Patna Zoo.

