

BUILDING THE FUTURE - INFRASTRUCTURE DEVELOPMENT STRATEGIES FOR VIKSIT BHARAT

Ms. Riya Mehta, Mrs. Munira Sarabar Boltwala

(M.Sc. Information Technology)
Asst. Professor – B.M. Ruia Girls' College
Visiting faculty – Sydenham College of Commerce and Economics
Visiting faculty – Lilavati Lalji Dayal College of Commerce

(M.Sc. Information Technology)
Visiting faculty – Sydenham College of Commerce and Economics
Visiting faculty – AP college
Visiting faculty – Garware Institute

Abstract

Infrastructure development plays a pivotal role in economic growth, enhancing societal well-being, and ensuring viable development. Strategic planning and execution of infrastructure projects become imperative. This research paper outlines key strategies for infrastructure development tailored to the objectives and challenges faced in the path of Viksit Bharat. A multi-sectoral approach is essential, which includes various sectors such as transportation, energy, water resources, telecommunications, and urban development. Coordination among these sectors is crucial to optimize resource allocation, minimize duplication with sustainable and resilient infrastructure. Given India's vulnerability to climate change impacts and the need to mitigate environmental degradation, integrating climate-resilient design principles, utilizing clean energy technologies, and implementing nature-based solutions to enhance infrastructure resilience. Embracing digitalization, smart technologies, and data analytics can optimize infrastructure operations, improve service delivery, and enable evidence-based decision-making in planning and management processes. This necessitates prioritizing projects that benefit marginalized communities, enhancing accessibility to basic services, and promoting equitable distribution of infrastructure resources across regions. Coordinated governance with interconnected projects will leverage growth across various sectors which will lead to job opportunities as well as strengthening economy. Strengthening institutional capacities, streamlining regulatory frameworks, and enhancing public-private partnerships can facilitate effective project delivery. Also, international cooperation and collaboration play a vital role in supplementing domestic efforts towards infrastructure development in Viksit Bharat. Engaging in strategic partnerships, accessing global expertise, and mobilizing international financing can accelerate the realization of infrastructure development goals.

Keywords: Infrastructure, Technology, Development, Sustainable, Resources

INTRODUCTION

"Building a developed India, called Viksit Bharat, requires careful planning and execution of infrastructure projects. This means integrating different areas like transportation, energy, water, telecommunications, and urban development. Working together is important to use resources wisely and create infrastructure that lasts. It's also crucial to consider climate change and use clean energy and nature-based solutions to make infrastructure stronger.

Using technology like digital tools and data analysis can help make infrastructure work better and make decisions based on evidence. We should make sure that everyone benefits from infrastructure projects, especially those who are often left out. This means giving resources fairly to all parts of the country.

Working together on projects and having good rules and partnerships between the government and private companies is key to making infrastructure projects successful. We also need help from other countries, experts, and international money to build infrastructure in Viksit Bharat.

Overall, this research aims to explore these ideas in more detail and provide useful suggestions for building better infrastructure in Viksit Bharat."

OBJECTIVES TO STUDY

1. To study and identify critical areas for infrastructure development.
2. To study about holistic, multi-sectoral approach for sustainable infrastructure.
3. To study and assess digitalization's role in optimizing infrastructure, improving service, decision-making.
4. To study international cooperation, partnerships, expertise, financing for Viksit Bharat's infrastructure.

METHODOLOGY

The secondary data was gathered from various sources including, books, journals and research paper.

LITERATURE REVIEW

1. Journal of Infrastructure, Policy and Development

This journal reviews the basic pros and cons with infrastructure development. It has explained how infrastructure can be divided into 2 broad categories - soft infrastructure and hard infrastructure. They have highlighted well how soft infrastructure i.e. service based industries whose functioning can be enhanced if necessary infrastructure is placed. (education system, healthcare system, law enforcement, financial system, government system and other types of institutional arrangements). The hard infrastructure is (transportation, telecommunications, energy, and water and sanitation) however remains the foremost priority in delivering the soft infrastructure. Co-dependence and co-relation leads not only to efficiency but also eliminates communication lag making the entire process seamless and well integrated.

2. Climate Change and Infrastructure, Urban Systems, and Vulnerabilities: Technical Report for the U.S. Department of Energy in Support of the National Climate Assessment - by Thomas J. Wilbanks and Steven Fernandez

In this paper, they have explained how infrastructure plays an important role in calamities. Natural calamities are neither known when would they occur nor their impact. Only once, the calamity has occurred we can assess its impact. It is essential to have infrastructure developed not only to resist the calamity but also to predict its occurrence. The paper highlights how different sectors like transportation, housing, telecommunication, energy is affected by the adversities which are not estimated due to lack of infrastructure development. Hurricane Irene which hit the American coast explained how the sewage pipes were affected which led to flooding which didn't recede for months hampering their day to day life of individuals, markets and governance. It has further done research to examine and understand how climate change has worsened the conditions and emphasizes on developing infrastructure which is climate resilient and also focuses on self-sustained clean energy that will reduce the contribution towards greenhouse gases. Policies, planning and infrastructure developers need to align their visions in order to develop long-term, effective, strong and nature based design principles which will help us to reach our vision in a manner which are undefeatable.

3. THE INFRASTRUCTURE FINANCE CHALLENGE - A Report by the Working Group on Infrastructure Finance Stern School of Business. New York University

This book enlightens us upon various segments where in infrastructure plays an important role. It highlights that proper financial funding is crucial in order to have a successful growth economically. There is no doubt that various factors influence the economic growth, however the means to find proper resource allocation for infrastructure development will remain the key for a substantial growth.

This book quotes *"The Brookings Institution issued a report assessing the global infrastructure investment need between 2015 and 2030 at around \$90 trillion, or \$5 trillion to \$6 trillion per year [Brookings, 2015]. The reality of fiscal constraints — in Europe, the US, and many other countries — could translate into a materially larger private-sector role in overall infrastructure finance."*

Table 1. Key Infrastructure Sectors (Source: OECD, 2014)

Sectors	Examples
Power and energy	Energy productions, power distribution
Water and sewerage	Plants for management of the water cycle
Telecom	Satellite communication networks
Transportation	Highways, tunnels, bridges, light rails, ports/harbours, airports
Social infrastructures	Social Housing, Hospitals, prisons, schools

According to the table, the general infrastructure development that one country should focus on in order to accelerate its economic growth is listed. In order to have achieve the goal of Viksit Bharat - 5 trillion economy, we need to focus on these which not only puts us on world radar in terms of infrastructure development but also will help boost employment which aligns with the vision of "MADE IN INDIA, MAKE IN INDIA".

4. India's 5 Trillion Dollar Economy Mission State wise

The plan:

In India, many states are working hard to make the country's economy grow towards \$5 trillion. We have studied how few states like Maharashtra, Tamil Nadu, Karnataka, Gujarat, and Uttar Pradesh are taking necessary steps in order to achieve this vision.

Maharashtra:

Maharashtra contributes a large part in India's economy. It's focusing on 16 industries like metals, automobiles, and chemicals to make its economy grow. It also wants to grow new industries like electric vehicles and renewable energies. The study explains how development of new sectors will help in creating jobs for the masses at different hierarchy. It suggests that to accommodate new sectors, we also need to improve transportation and public offices in order to facilitate them integrating seamless transaction and communication between organization and government.

Tamil Nadu:

Tamil Nadu is the second largest state to contribute towards India's economy. It is focusing on industries like computer chips/integrated circuits, medical diagnostic equipment & pharmaceuticals, and aviation. The state CM has initiated and has called upon industrialist to setup factories and manufacturing base in the state in order to generate employment opportunities.

Karnataka:

The state of Karnataka aims at building its economy worth \$1 trillion. It has a 13 point plan which emphasizes on developing and encouraging entrepreneurs to invest in industries like biotechnology, semiconductors, electronics component design, and materials innovation.

Bengaluru:

Bengaluru aspires to become a hub for technology and innovation. The state has a vision to develop and create demand and supply for technologies like smart computers and embedded system. They also want to build infrastructure which maintains data security and concentrate on encryption, gateway technology which provides safe data centers. This will generate demand for skilled professionals which will enhance and help nation's economy.

Gujarat:

Gujarat aims to become India leading state in contributing towards India's vision of \$5 trillion economy by contributing \$500 billion by the year 2027. The state believes that by setting up factories in the state with multi sectoral inclusion will help it to build its economy. The 'Surat Diamond Bourse' is one such example. The initiative has attracted many people across the globe to trade with Surat. It has also impacted the diamond traders in Mumbai.

Uttar Pradesh:

The state of Uttar Pradesh has a long term vision which include diverse sectors like agriculture, production, service based industries, tourism, hotels, and retailing. The focus is to encourage different sectors and parallel growth which will help India as a nation to grow towards its \$5 Trillion economy, encouraging the youth to acquire skills in order to help generate employment.

State Plans for Growth:

Each state has its own plans to help India's economy grow towards \$5 Trillion. Initiatives and measures are taken and policies are laid down to make sure we are aligned. It is important that even though the progress is state wise, the growth will be overall. The alignment will help us achieve sooner and with grace.

To sum up, as India moves toward its big economic goal, it's important for all the states to work in synchronization. By making clever plans and integrating state action while diversifying projects we will be able to create new opportunities, markets, and development which will put India on the world map as one of the strong countries aiming and building infrastructure as its strong ground.

THE ROADMAP						
State	GSDP at current prices (₹ crore)			Target date	EY estimate	Key focus sectors
	FY23 (\$ billion)	FY24 (\$ billion)**	Target			
Maharashtra	424	466	\$1 trillion	FY29	FY34	Metals, capital goods, petroleum products, renewable energy, defence equipment
Tamil Nadu	282	340	\$1 trillion	FY31	FY37	Semiconductors, fabs & circuit boards, pharmaceuticals, aerospace, defence
Karnataka	269	309	\$1 trillion	FY33	FY37	IT, biotechnology, artificial intelligence, machine learning, startups
Gujarat	**271	308	\$500 billion	FY27	FY29	Smart manufacturing, green manufacturing, fintech, tourism, IT
Uttar Pradesh	*271	293	\$1 trillion	FY28	FY37	Manufacturing, agriculture, tourism, electronics, IT services

* REVISIED ADVANCE ESTIMATE, GOVT OF UP. ** FRG BUDGET ANALYSIS SOURCE: MINISTRY OF STATISTICS AND PROGRAMME IMPLEMENTATION, FRG, EY

CONCLUSION

If India attains the \$5 trillion GDP target established by PM Modi, recognition will extend beyond the five leading states to include others. Ernst and Young Global Limited (EY) has identified the next set of states in line, including West Bengal, Rajasthan, Andhra Pradesh, Telangana, Madhya Pradesh, and Kerala. However, the pursuit of the \$1 trillion aspiration will be the responsibility of each state, with a significant obstacle being the slowdown in the global economy. EY's Srivastava notes that states heavily reliant on exports may face constraints due to the ongoing global economic sluggishness. EY emphasizes the need for deliberate efforts to boost growth in state economies, requiring governments to increase capital expenditures relative to their Gross State Domestic Products (GSDPs). Additionally, there is a recommendation to progressively enhance the share of services and industry in Gross State Value Added (GSVA) compared to agriculture, as it would be beneficial for both output and employment growth. Rahul Ahluwalia, Founding Director of the Foundation for Economic Development, underscores that exports are a crucial avenue for rapid growth in a country like India. Despite global merchandise exports reaching \$25.3 trillion in 2022, India's share was only 1.8%. Ahluwalia advocates for India to enhance competitiveness as a manufacturing destination, aiming to increase its share of global exports. This strategy is anticipated to generate a growth surge similar to the IT and ITES sectors' success over the past two decades. B.V.R. Subrahmanyam, CEO of Niti Aayog, hinted in October at the formulation of a strategy for the next decade. Prime Minister Modi is expected to unveil a vision document for 'Viksit Bharat@2047,' outlining a vision for a developed India on its 100th year of independence. The objective is to transform into a \$30 trillion economy by 2047, driven by policy changes, reforms at the central level, and substantial support from states. For India to achieve \$5 Trillion economy, it should be our primary goal to focus on infrastructure development. As we focus on building economy we should not forget factors like financial funding, climate change, IT enabled services, housing, transportation, health care, sanitation and telecommunications. It is essential we grow hand in hand in order to avoid technology gaps and asynchronisation between states. Also, distinguishing between various IT sectors and creating markets for all will lead to overall growth. It is also essential to focus on education sector along with technology so that student have 1st hand experience of practical knowledge which strengthens their chances of employment.

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