

# Addressing Implementation Issues in Large Infrastructure Projects in India

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**Abstract:** Development of infrastructure is a key priority of central government and different state Governments in India as it results in economic development, employment generation and improved quality of life of people. Much public fund has been allocated for the purpose and many large infrastructure projects are taken up for implementation. But, this effort has been hampered by many issues faced during implementation of the projects. The completion of the projects has been delayed due to these issues. Therefore, there is an urgent need to analyse the issues and find ways to address them. In the paper, based on work experience of several large infrastructure projects, the author has analysed the implementation issues and suggested measures to address them.

**Index Terms:** Infrastructure, Project Management and Implementing Agency, Consultant, Contractor, Implementation Issues

## 1. INTRODUCTION AND CONTEXT:

Infrastructure development has been a key priority of the Union government and all state governments in India, as it results in economic growth, employment generation and improved quality of life of people. Large investment in infrastructure projects has been done by governments over past several years. The infrastructure projects covered different sectors such as power, roads, railways, ports, airports, water and urban infrastructure, irrigation, storage, gas, telecom, etc. In budget for year 2020-21, Government of India has specified that Rs 100 lakh Crore would be invested for infrastructure development over the next five years. For the purpose, a national infrastructure pipeline was launched on 31st December 2019 amounting to Rs 103 lakh crore. It consists of more than 6500 projects across different sectors. But, in spite of all efforts for infrastructure development, it has been observed that implementation and completion of projects has always been slow. Time and cost overruns in projects are very common in India. This has been due to many implementation issues like the delayed central and state regulatory clearances, land acquisition, fund constraints, inefficient project management, poor performance of contractors, etc. Unless these issues are addressed adequately, infrastructure development effort of Government will not succeed fully. Based on work experience in several large infrastructure development projects in India, the author has analyzed some of the implementation issues and suggested measures to address them.

## 2. IDENTIFIED PROJECT IMPLEMENTATION ISSUES:

In India, in most of infrastructure development projects, three main organisations are involved. They are project management and implementing agency, design consultant team for design of the project and contractor for actual execution of works at site. In most of Government funded projects, a special purpose vehicle (SPV) is created for project management and implementation, which is a government agency. In some occasion, a cell within a government organisation is given the responsibility for managing and implementing the project. An external professional consultant group is hired for engineering design of the project. In many occasions, the consultant group is also assigned the assist the SPV in project management. The implementation issues encountered in the projects are result of deficiencies of all the three main organisations as mentioned above. Apart from it, there are some general issues faced in all infrastructure projects in India. All the implementation issues and their groupings are as below:

### a) Issues Attributable to Project Management and Implementing Agency:

- 1) Inability to acquire the required land for the project due to resistance from land owners, arbitration over ownership of land, unavailability of required extent of land
- 2) Delay in obtaining environmental clearances for the project
- 3) Delay in shifting of existing utilities lying within project area
- 4) Delay in securing forest clearances for cutting trees in project area
- 5) Delayed permission from crossing of railway track and national highways for pipeline project
- 6) Delayed construction of railways under bridge and over bridge for road project
- 7) Delay in obtaining statutory approvals from pollution control board and other agencies
- 8) Lack of coordination between different government agencies and stakeholders
- 9) Non availability of skilled workforce for recruitment
- 10) Poor monitoring and use of inefficient tools for project monitoring
- 11) Funding constraints or non availability of fund at appropriate time
- 12) Delays in invoice payments to contractor and consultants
- 13) Delay in decision making on critical technical issues of the projects

- 14) Delay in approval of detailed project reports, bid documents, bid evaluation reports and award of contracts.
- 15) Non settlement of claims and dispute with contractor
- 16) Conflicts and overlapping with other projects in same project area
- 17) Poor selection of consultant and contractor

b) Issues Attributable to Design Team and Consultants:

- 1) Non mobilisation of team lead, experts, technical staff and other resources in time.
- 2) Mobilisation of inadequately skilled technical staff in consultant's office
- 3) Non viability in execution of works due to bad design of projects
- 4) Forwarding project into implementation without proper due diligence of all aspects and detailed cost estimates
- 5) Inadequate time, money and expertise devoted in preparing project report resulting in preparation of poor quality detailed project reports.
- 6) Non selection of appropriate technologies in the project
- 7) Geological surprises such as finding unexpected hard rocks at site, poor safe bearing capacity of soil, etc.
- 8) Absence of risk assessment of project and coping strategy
- 9) Unrealistic stipulation of project timelines
- 10) No use of internationally accepted contractual standards such as FIDIC
- 11) Delay in preparation of detailed engineering drawings and their finalisation
- 12) Changes in scope and design
- 13) Defective procurement planning
- 14) Delay in tendering
- 15) Adversarial contract conditions, which can hamper project progress
- 16) Lack of proper qualification assessment of bidders
- 17) Weak contract administration and claim management
- 18) Contractual disputes arising due to errors in contract document

c) Issues Attributable to Contractors:

- 1) Non availability and non mobilisation of required fund for working capital.
- 2) Lack of efficient project execution plan
- 3) Use of inefficient tools for project monitoring and management
- 4) Non mobilisation of required workforce and construction equipment
- 5) Lack of required work experience of contractor
- 6) Lack of utilisation of appropriate technologies and machinery to execute the project. As labour is not expensive, contractor avoid use the machines that hamper progress in the project.
- 7) Poor productivity of resources due to bad management.
- 8) Contractors not adequately understanding the scope of works at the time of bidding.

d) General Issues:

- 1) Mistrust, rivalries and poor industrial relation between project implementing agencies, consultants and contractors.
- 2) Political influence in decision making in project
- 3) Law and order issue
- 4) Local agitation
- 5) Inadequate availability of skilled resources
- 6) Geographical challenges and cultural differences
- 7) Unavailability of experienced contractors
- 8) Teething troubles in pre-commissioning of projects
- 9) High cost of land for project, environmental safeguards and rehabilitation measures
- 10) Bad location and connectivity of project site

### 3. ANALYSIS OF PROJECT IMPLEMENTATION ISSUES

An analysis of the implementation issues as mentioned above reveals that many issues are mainly due to deficient performance of the project management and implementing agencies, consultants and contractors. The same are mentioned below.

The implementation issues attributable to the project management and implementing agencies are mainly due to non performance of required activities by the agencies in time. This is again due to absence of an appropriate functional organisational structure. In many implementing agencies, even if any organisational structure is developed in paper, required manpower as per the organisational structure is not deployed. Higher authority in implementing agencies is reluctant to recruit all required manpower to save fund. At the same time, there is shortage of efficient and experienced officials to lead the project implementing agencies. In a nutshell, non performance of required activities by implementing agencies is due to lack of leadership, non availability of required staff and lack of experience in anticipating the implementing issues.

The main issues attributable to design team and consultants are due to poor leadership in consultant's team and non availability of required staff or experts in the team. The consultant needs to mobilise qualified project management expert, design engineers, quantity surveyors, procurement and contract management experts and other required staff in time.

The main issues attributable to Contractor, who is mainly responsible to execute the works as site, are due to selection of a contractor, who does not have requisite financial capability, works experience and ability to mobilise resources such as technical staff, construction workers and equipment at construction site in time.

The general project implementation issues in India are mainly due to inherited construction sector environment in India, conservative government policies and monopoly of government organisations in infrastructure and construction sector. Only from recent time, private sector is allowed to invest and participate in infrastructure sector in India. Very recently, Government has allowed foreign direct investment and international organisations to participate in infrastructure development in India. In India, globalisation in infrastructure sector has happened very recently.

#### 4. SUGGESTIONS TO ADDRESS PROJECT IMPLEMENTATION ISSUES

Addressing the implementing issues is very important for economic development of the India. For this to happen, it must be ensured that the project management and implementing agencies of infrastructure projects are made fully functional at the start of the projects with appropriate organisational structure and manpower deployed. If needed, experienced project management and technical staff should be hired from open market. There should not be tendency to save fund by not recruiting required staff. Leaders of project management and implementing agencies need to be selected with proven record of performance in infrastructure projects. A competent leader will be able to take timely decisions on technical issues and speedy approval of detailed project reports, bid documents, bid evaluation reports and award of contracts. Project progress monitoring by higher authority is found to be useful in expediting progress of projects. Therefore, high powered committees for monitoring progress of large infrastructure projects need to be formed in each state of the country. The committees need to be empowered to take measures to address project implementation issues. Government needs to be extra careful in selecting design and project management consultants for infrastructure projects. In selection of contractors, political and any other influence must be resisted. This can be achieved by adopting robust procurement policy such as inviting global bids, use of internationally accepted standard bidding documents and methods for selection of contractor. Utilization of international project management approach and project monitoring tools will be useful in addressing the general implementation issues in infrastructure sector in India.

Disclaimer: The findings and conclusions presented in the paper are personal opinion of the author.