

Social Impact Assessment of Urban Mass Transit: A Case Study of Metro Rail in India

Dr. Sanjay K. Pradhan

Metro Division, RITES Ltd, Gurugram, India

Abstract:- The country's efforts to improve its infrastructure are important for promoting economic growth and alleviating poverty. However, these initiatives often result in negative consequences alongside their positive outcomes. These negative effects can manifest in various forms, including social, cultural, economic, and environmental impacts. As such, it is imperative to anticipate and prevent these undesirable outcomes to achieve inclusive and sustainable development. The importance of Social Impact Assessment (SIA) and meaningful public consultation in infrastructure projects has been recognized by social scientists, policymakers, international financial institutions, and development practitioners as effective measures to mitigate adverse social impacts of development projects. This is equally applicable to urban transportation projects, which also require a thorough evaluation of their social impacts. In this paper, we examine the SIA rules and regulations under the RFCTLARR Act 2013, assess the social impacts of the Ahmedabad metro rail project (Phase-I), and propose mitigation measures to minimize negative impacts and maximize positive ones for all stakeholders involved. It is argued that addressing social issues early in the project and integrating them into resettlement management can greatly increase the chances of project success.

Keywords:- Social Impact Assessment, Metro Rail, Gender issue, Project Affected Persons, Stakeholder consultation, and Rehabilitation & Resettlement.

I. INTRODUCTION

In India, 461 million people are living in urban areas (Cities Alliance, 2023). This number is growing by 2.3 percent each year (UN DESA, 2018). In recent decades, there has been a sharp increase in urbanization. Vehicular traffic has increased alarmingly, with a compound annual growth rate (CAGR) of 94.40% over the years 2011–2016, because of unparalleled urbanization (MoRTH, GoI, 2016) and this has resulted in severe economic, environmental, and social consequences such as increased fuel consumption, reduced productivity, increased business cost, and increased emissions and stress. To develop more sustainable urban transportation networks, this scenario has led to increased expenditures in mass rapid transit systems.

Gandhinagar and Ahmedabad, situated just 32 km apart, are closely linked by highways and are quickly developing into a continuous urban region. With its strategic geographic position, diverse cosmopolitan society, huge growth potential, and business-friendly policies, it is an attractive place for companies, entrepreneurs, academics, and families. The twin cities currently have a population of approximately 6.5 million and are projected to reach 9.3 million by 2025. This rapid growth is placing immense strain on the transportation system in the twin cities, necessitating the need for faster modes of transportation to prevent delays and alleviate congestion. In response, the Government of Gujarat has recognized the metro rail as a highly effective, financially feasible, and environmentally sustainable solution to meet the future transportation demands of Ahmedabad and Gandhinagar.

In 2009, the Metro Link Express for Gandhinagar and Ahmedabad (MEGA), now known as Gujarat Metro Rail Corporation Limited (GMRCL), was established as a special purpose vehicle (SPV) to oversee the development and operation of a Metro Rail system in Ahmedabad and Gandhinagar. MEGA prioritized the protection of the environment and the well-being of the public, and therefore aimed to construct the Metro Rail facility in compliance with strict environmental standards. The Delhi Metro Rail Corporation (DMRC) was responsible for preparing the Detailed Project Report (DPR) for the Phase-I corridor, which was finally approved by the Union Cabinet of India in October 2014 (ToI, 2014). According to the DPR (MEGA, 2015), the entire route spans 37.928 km and includes 31.593 km of elevated and 6.335 km of underground section with a total of 32 metro stations. The metro alignment provides north-south connectivity from APMC to Motera Stadium and east-to-west connectivity from Thaltej to Vastral.

During the planning stage of the project, a Social Impact Assessment (SIA) study was carried out by RITES Ltd in 2014 (MEGA, 2014). In this paper, an attempt has been made to describe the application of the Social Impact Assessment (SIA) study for the project under the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation, and Resettlement (RFCTLARR) Act 2013, assess the potential social impacts of the project based on SIA study, and develop mitigation measures to minimise the negative impacts and maximising the positive impacts for all stakeholders of the project.

II. METHODOLOGY ADOPTED FOR SIA STUDY

The SIA study was conducted in accordance with the RFCTLARR Act, 2013, Japan International Cooperation Agency's (JICA) guidelines for Environmental and Social Consideration 2011. Before the start of the SIA study, the Government of Gujarat (GoG) informed the public through notification about the proposed metro rail project. Field visits and studies were conducted in September and October of 2014 to verify alignment drawings and identify affected areas on site. The study team then engaged with various stakeholders in the project area and arranged meetings to raise awareness about the project. A census and socio-economic survey were conducted to assess the potential impacts within the Corridor of Impact (CoI). This survey aimed to gather necessary information on the PAPs to accurately evaluate the extent of potential impacts and determine appropriate measures to mitigate any adverse effects. The survey consisted of three parts: a household census, a socio-economic survey of the households, and community-based public consultations. Through this process, the households, commercial and business enterprises, and community property resources within the project's CoI were identified. Trained investigators collected a wide range of data, such as demographics, education, occupation, income, and types of businesses, through a pre-tested questionnaire. This data was later shared with the communities for review and verification. Public consultations were conducted at various levels, including individual, group, community, and institutional, to gather feedback and input. Once the draft SIA report was prepared, another round of public consultation was conducted at the city level. The entire data collection process was supervised by the project's Social Development Specialist.

III. RESULTS OF THE STUDY

A. SIA Background and Instructions

Initially in India, SIA was conducted as a part of the Environmental Impact Assessment (EIA). However, it did not receive sufficient attention from the project developer as it was just a component of the EIA process. SIA was introduced by international financial institutions such as the World Bank and the Asian Development Bank to approve loans for the government. It was officially mandated as a planning tool when the Government of India issued a new Resettlement and Rehabilitation Policy in 2007, replacing the previous policy from 2004 (GoI, 2007). This policy required that SIA be conducted for any new project or expansion of an existing one. While this was seen as a significant step, further examination revealed that it was not as promising as it initially seemed. The focus of SIA was primarily on quantifying the loss of physical assets, rather than considering social impacts (Mathur, 2016). It was also found that SIA was not effectively integrated into the process of resettlement planning in India.

There is a widespread consensus among individuals and groups from all sides of the social and political spectrum that the present policy is riddled with deficiencies such as

compulsory acquisition, inadequate compensation rates, lack of compensation for those who lose their means of livelihood (who are not titleholders), and legal disputes. Consequently, a fresh legislation has been implemented under the name of the 'The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act 2013 (Pradhan 2014). The purpose of the Central Act is to guarantee fair and equitable compensation to the affected families as well as to ensure a humane, inclusive, informed, and transparent process for the acquisition of land needed for industrialization, urbanization, and the development of critical infrastructure facilities. To ensure a comprehensive, participative, and meaningful process for land acquisition under the Land Acquisition Act of 2013, the Government of India issued the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation, and Resettlement (Social Impact Assessment and Consent) Rules, 2014 on 8th August. These rules state that before land acquisition, a SIA study must be conducted in the affected area, to identify the potential social impacts of the project. This study must be completed within six months and includes provisions for public consultation, hearings, and obtaining consent from a majority of local landowners (80% for private projects and 70% for public-private partnership projects). Additionally, an expert group is to be formed to evaluate the SIA report. The Rules also require the state or central government to establish a Social Impact Assessment Unit to ensure that the SIA is carried out by independent parties, rather than requiring body. In order to maintain the credibility of the SIA, certain provisions are necessary. These include the inclusion of independent practitioners, academics, and qualified social experts in the SIA team, as well as at least one-woman member. Other important provisions include a six-month timeframe for the SIA, the collection of written views from affected families, the involvement of local media and volunteer organizations in public hearings, the recording and consideration of objections raised during these hearings, conducting the SIA and hearings in the local language, and utilizing a web-based flow management system for the acquisition process. If land is being acquired, fair compensation must be promptly paid to all affected individuals, as outlined in sections 28, 29, and 30 of the Act (GoI 2014). For the proposed metro rail project, a SIA study has been conducted and mitigation measures have been developed following the RFCTLARR Act, 2013.

B. Identifying Social Impacts of the Project

After conducting a thorough field investigation, it was revealed that all land and structure owners were in favor of the proposed metro rail development in the city and were willing to let go of their land. However, they also voiced their concerns about the potential consequences on their social and economic well-being because of the land acquisition.

Through the implementation of the metro rail project, there will be a significant reduction in road traffic and associated stress, fuel consumption, air pollution, travel time, vehicle operating costs, accidents, and road maintenance.

This will also lead to increased mobility and better accessibility, positively impacting the surrounding areas and stimulating economic growth. Additionally, it will enhance social well-being, create new business opportunities, and improve the overall aesthetics and image of Ahmedabad and Gandhinagar. The metro train project will completely transform the transportation landscape of these cities. According to the SIA report, respondents expressed positive opinions about the metro project. 42% of them acknowledged its potential to boost business and employment opportunities in the area, while 35% believed that it would enhance the city's transportation system and increase property value. They also believed that the development of metro rail could lead to a variety of livelihood opportunities, improve quality of life, and reduce accidents and greenhouse gas emissions. In particular, female respondents noted that the metro train would greatly benefit working women.

As per the SIA report, the project requires the acquisition of 898191 sqm of land for the construction of different components of the project. Most of this land, 94%, is government-owned, while only 4% will need to be acquired from private owners. Despite efforts to minimize the land needed by adjusting the alignments away from private property and human settlements, the project may still result in the displacement of families, damage to structures, loss of businesses and livelihoods, and unemployment for wage earners. Vulnerable groups, particularly women, may also be negatively affected by the project (MEGA, 2014).

IV. SOCIAL MITIGATION MEASURES

The following measures are proposed based on the study to minimize the negative impacts that may be occurred due to land acquisition for the construction of the viaduct, stations, depot, etc. of metro rail.

A. Resettlement by Social Relationship

To ensure the continuation of social ties, it is suggested that the relocation of affected communities be carried out within the following guidelines: (a) all members of the affected community should be relocated together to the new resettlement colony; (b) individuals from the same ethnic group should be situated in close proximity within the new colony; and (c) households and communities from the same neighborhood should be placed as close to each other as possible.

B. Provision of Income and Livelihood Restoration Assistance

Restoring income levels to pre-project standards is a crucial aspect of rehabilitating communities impacted by the project. The project policy includes numerous measures to help affected individuals improve their socioeconomic status. Furthermore, the project needs to assist in maximizing the benefits of government schemes for those affected. The NGO will work closely with different departments to ensure smooth integration with the overall project plan. Additionally, the project offers training opportunities to

enhance skills and one-time economic rehabilitation grants to vulnerable families, enabling them to rebuild their economic stability.

C. Measures to Address Gender Issues

The project has implemented gender-sensitive measures to maximize positive impacts and minimize any potential negative effects. During the planning and design phase, the project has shifted from a minimal compliance approach to one that promotes empowerment, allowing women to participate in the consultation process. Additionally, steps have been taken to provide job opportunities for women in the construction, operation, and maintenance of the metro rail system, as well as ensuring equal wages, training, and access to livelihood restoration programs. The project also includes specific provisions for women residing in the construction camp, such as temporary housing, healthcare, daycare facilities, and proper scheduling of construction work to prevent child labor. These measures have been carefully considered to benefit all women and children living in the construction camp.

D. Provisions for Schedule Caste and Scheduled Tribe

About 17% and 26% of total project-affected families are from scheduled tribes and scheduled castes respectively. Tribals found in the project area no longer live in forests/hills. The tribal population has been integrated with the mainstream population. However, a small number of them still fall under the category of below the poverty line. To improve the economic conditions of the affected scheduled tribes and castes, the Resettlement Plan (RP) has been designed under the RFCTLARR Act, 2013. Additionally, there are several State and Central Government schemes aimed at the development of these populations, with an annual budget allocation for their implementation. The project proponent has a crucial role in connecting these welfare schemes to the development of the affected tribal communities. Suppose any negative impacts on the tribal people are identified during the project's implementation. In that case, the project proponent must ensure that an indigenous people's plan is prepared under the RFCTLARR Act, 2013, and JICA's Involuntary Resettlement Policy. This plan must be approved by the Government of Gujarat and JICA before awarding any civil works contracts.

E. Provision for the Mobility of Disabled People

Ensuring accessibility for the elderly and disabled is a crucial factor in any urban transportation project. In accordance with the guidelines set by the Ministry of Urban Development, measures will be taken to make both stations and rolling stock disability friendly. These provisions, included in the project's DPR, will be implemented. Entry to the stations will be available from both sides of the road, with a gently sloping ramp to aid the mobility of individuals with disabilities and the visually impaired. Furthermore, lifts designed for the disabled, tactile flooring, and other necessary features will be installed to facilitate access to the platform and designated areas on the train, located near the driver's cab (MEGA 2015).

F. Provision of Community and Religious Structures

It is essential to involve the community in the replacement of affected communities and religious structures. In cases where replacement is not possible, fair compensation or replacement with a comparable or superior resource must be provided to offset any losses incurred.

G. Provision of Training for Capacity Building

The success in implementation of the resettlement plan hinges on the abilities of both management personnel and affected persons of the project. As such, it is recommended that a thorough training and capacity-building program be implemented for all key stakeholders involved in the execution and oversight of the project's resettlement plan. This should include various stakeholders responsible for the implementation and management of the resettlement plan of the project.

H. Stakeholders Engagement During Project Implementation

The agency responsible for implementing the project must hold information-sharing sessions in the designated project location, seek assistance from local community members and leaders, and encourage the participation of those affected in implementation of the resettlement plan. It is necessary to conduct consultations and focus group discussions with stakeholders in the affected areas, specifically targeting vulnerable groups such as women, families living below the poverty line, and individuals with disabilities, to ensure that their unique needs are taken into consideration. The implementing agency, in collaboration with NGOs, should also arrange public gatherings to inform the community of the progress of the resettlement plan. Furthermore, updates on the resettlement component of the project should be regularly displayed at the project offices for public awareness.

I. Implementation of Grievance Redressal Mechanism

An efficient grievance redressal mechanism has been proposed to address the grievances and complaints of the affected persons. Initially, the affected person's grievance will be handled by the field-level staff of the implementing agency. In case the staff is unable to resolve the grievances, they will be escalated to the Grievance Redressal Committee (GRC). The GRC has the following responsibilities: (i) providing assistance to affected persons regarding issues related to land/property acquisition, (ii) recording, categorizing, and prioritizing grievances for resolution, (iii) promptly informing about serious cases, and (iv) updating affected persons on the status of their grievances and decisions made by the GRC. Additionally, the GRC will also review complaints related to all types of assistance, such as replacement costs, relocation, compensation, and resettlement benefits, except for legal disputes over ownership rights. Any complaints raised with the field-level staff must be resolved within 15 days of filing.

V. DISCUSSION

The main goal of the project is to construct a metro rail system that adheres to appropriate environmental regulations to safeguard both the community and the natural surroundings. The SIA study was applied to assess how the project's social impacts would affect the local population and community and to identify ways to maximize positive impacts while minimizing negative ones.

The primary results of this review include: (a) the SIA team diligently analyzed the SIA rules and regulations outlined in the RFCTLARR Act, 2013, evaluated social impacts, and devised effective social mitigation measures by utilizing a variety of established social research methods; (b) the impacted community was given ample opportunity to engage in the SIA process and offer valuable recommendations to address various social concerns; (c) the study demonstrated that community perspectives and values gathered during the SIA greatly influenced the outcome of the process. This study affirms that the implementation of SIA is crucial in ensuring the success of infrastructure development projects.

VI. CONCLUSION

The construction of the metro rail in Ahmedabad City is an important project of the State Government. The project requires land mainly for the development of station buildings, platforms, traffic integration facilities, staff quarters, office complexes, and operation control center, etc. In compliance with the RFCTLARR Act, it is mandatory to conduct an SIA study to acquire any land. Accordingly, a SIA study for the proposed metro rail project was conducted. Stakeholder consultation was considered fundamental for effectively addressing social issues in the planning and design stage of the project. The study highlights both positive and negative impacts of the project. To address adverse negative impacts and maximising positive impacts, a project-specific resettlement plan including income restoration, grievance redressal mechanism, and monitoring and evaluation mechanism for implementation of this plan has been prepared based on the SIA study. It is learned from the study that the SIA process allowed affected persons and communities to have a voice in the development process and the findings of the SIA report influenced Government's final decision about the metro project. Sharing the SIA report after the completion of the SIA study with affected persons and communities made it participative and created confidence among them concerning the government. The SIA report also helps the project-affected persons (PAPs) to receive fair compensation as per the RFCTLARR Act. Hence, for the successful completion of any infrastructure development project, it is required to identify and address social issues at an early stage of the project through an SIA study.

REFERENCES

- [1]. Cities Alliance (2023), India: Improving Comfort in Community Buildings in Informal Settlements. Retrieved from <https://www.citiesalliance.org/newsroom/news/urban-news/india-improving-thermal-comfort-community-buildings-informal-settlements>.
- [2]. Government of India (2007), The National Rehabilitation and Resettlement Policy 2007 New Delhi: Ministry of Rural Development.
- [3]. Government of India (2013), Press Note on Poverty Estimates 2011-12 New Delhi: Planning Commission.
- [4]. Government of India (2013), The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act 2013, New Delhi: Ministry of Rural Development.
- [5]. Government of India (2014), The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement (Social Impact Assessment and Consent) Rules 2014, New Delhi: Ministry of Rural Development.
- [6]. Mathur, H.M. 2016(ed), “Assessing the Social Impact of Development Projects: Experience in India and other Asian Countries”. Springer International Publishing.
- [7]. Metrolink Express for Gandhinagar and Ahmedabad (MEGA) Company Ltd. (2014), Social Impact Assessment for Ahmedabad Metro Rail Project (Phase-1), Ahmedabad.
- [8]. Metrolink Express for Gandhinagar and Ahmedabad (MEGA) Company Ltd. (2015), Detailed Project Report for Ahmedabad Metro Rail Project (Phase-1), Ahmedabad.
- [9]. MoRTH (2016) Government of India, Steps taken to Improve Public Transport in Cities. Retrieved from <http://pib.nic.in/newsite/mbErel.aspx?relid=147463>.
- [10]. Pradhan, S. (2014), “Development Projects and Displacement of Tribals”, in Paul N. (Ed), Development, Displacement and Marginalization, VSS Publication.
- [11]. United Nations (2018), Department of Economic and Social Affairs, Population Division (2018). World Urbanization Prospects, Retrieved from <https://population.un.org/wup/>.
- [12]. Ahmedabad. The Times of India. 17 October 2014. Retrieved from <https://timesofindia.indiatimes.com/city/ahmedabad/Ahmedabad-Metro-project-gets-green-signal/articleshow/44870418.cms>.