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# Urban Transit Projects and Internal Displacement: A case study on Kerala's Silverline Corridor

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## Abstract

A semi-high-speed rail corridor connecting the northern part of Kerala from Kasaragod to the southern part of Kerala in Thiruvananthapuram through a single railway corridor has recently been proposed. The objectives of the project are to advance accessibility and mobility between northern and southern Kerala. Nonetheless, significant protests and resistance have been recorded against the project. Infrastructural projects with no consideration for environmental contexts and vulnerabilities will seriously affect the already vulnerable environment of the state, deepen inequalities and jeopardize the capacities, assets, and activities that sustain the means of living. The objective of the study is to record the impact of large-scale urban transit projects on the environment and people. This paper ponders two questions; firstly, why there are enormous protests and serious resistance against a supposedly valuable infrastructural project? and secondly, can this project, as the protestors reiterate, lead to the internal displacement of people across the eleven districts through which the proposed rail corridor passes?

The study suggests a renewed approach that implies a detailed evaluation of the project's feasibility and viability dimensions required to be undertaken before acquiring land and properties from people. The implementation of this policy, in tune with the environmental contexts of the state, is vital to protect livelihoods and promote healthy development.

**Keywords:** K-Rail, Silverline, DPR, Environmental Vulnerability, Floods, Development, Internal Displacement

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## Introduction

Transportation infrastructures such as roads and railways contribute to national and regional economic, social and cultural integration. The movement of people and goods from one place to another through various modes of transportation has contributed significantly to the socio-economic and cultural growth of regions that are not otherwise connected with each other. In Kerala, road networks have been in use to connect with other modes of transportation, be it railways or shipyards, or even waterways. The roads facilitate better connectivity with all the other modes of transportation. Nonetheless, existing road networks in Kerala suffer severe drawbacks in terms of increased vehicle traffic causing congestion at peak hours in cities and lack of proper maintenance of the highways resulting in accidents and damages to the vehicles. The advent of sophisticated technologies and improved infrastructure facilities in cities have attracted people and jobs from rural to urban spaces but the existing constraints in the present system have considerably affected the growth potential of these emerging systems (K-rail, 2022). In order to support and improve the ailing system governments and other decision-making bodies have considered high-speed corridors in the past such as expressways and elevated ways. The newest addition to this club of decorated corridors is the proposed silver line corridor, connecting Kasaragod and Thiruvananthapuram through a single semi-high-speed rail corridor.

## Research Methodology

The paper is a historical and contextual analysis of the Silverline corridor proposed by the government of Kerala and the study area is limited to the geographical boundaries within which the present corridor is envisaged to be operating. Detailed project information, debates, and public opinions were recorded and uploaded on the YouTube channel operated by K-rail (https://www.youtube.com/c/KRail/videos), which has been a tremendous source of opinion and arguments from the government's perspective as well as experts in the field, which were studied fully. This is a descriptive paper majorly depending on the reviewed literature and data collected from the official ministries of the government that was accessible via the internet. The study has made all the efforts to focus on the impact of this project on the people, ecology, and social environment in Kerala.

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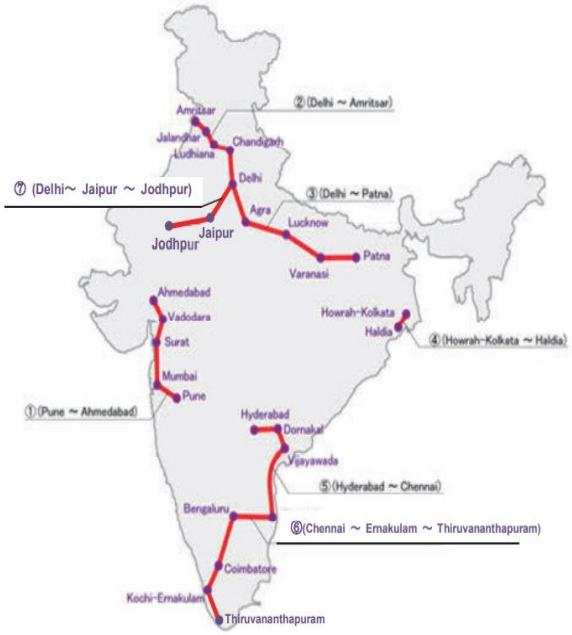
## High Speed Rail Corridors

### A. Vision 2020

India is the second most populous country in the world with a population of 1.3 billion (Census 2011). Railways have woven India together under a single transport network by providing mobility and being a critical facilitator of goods carriage across the nation at the cheapest cost incurred. In 2009, the Ministry of Railways, Government of India, brought out its vision 2020 document through which the ministry envisaged the future prospects of railways in India. The main strategic goals set out to achieve were: 1) Inclusive development, both geographically and socially; 2) Strengthening national integration; 3) Large-scale generation of productive employment, and 4) Environmental sustainability (Railway Board, 2009). The document further emphasized the need to increase revenue and expand networks also attracting more investments so as to further enhance passenger services and improve freight carriage across the major cities and economic zones which have developed over time. The document proposed six new High-Speed Rail (HSR) corridors across various states in India connecting all the major economic hubs and they are shown in figure 1.

**Figure 1: The six proposed HSR corridors by the Indian Railways**




. *1. Delhi-Chandigarh-Amritsar;*

*2. Pune-Mumbai-Ahmedabad;*

*3. Hyderabad-Dornakal-Vijayawada-Chennai;*

*4. Howrah-Haldia;*

*5. Chennai-Bangalore-Coimbatore-Ernakulam;*

*6. Delhi-Agra-Lucknow-Varanasi-Patna.*

Image Source: ((NHSRCL, 2015)

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### B. Kerala's High Speed Rail Corridors

Kerala is one of the most densely populated states (860 people per square kilometer) in India, having a population of 3.34 crore, with an average population growth of 4.86% (Census 2011). In the 2009-10 Kerala budget the then finance minister Dr. Thomas Issac of the LDF government proposed a high-speed rail corridor between Thiruvananthapuram and Kasaragod and suggested the formation of Kerala Rail Development Cooperation Ltd (Issac, 2009) with an initial capital of 20 crores, which culminated in the formation of the Kerala High Speed Rail Cooperation Ltd (KHSRCL) on 13$^{th}$ September 2011, under the UDF government. The Delhi Metro Rail Cooperation Ltd (DMRCL) was tasked to conduct a feasibility study for the project and submit its report to the government. The promise was to travel between south and north at a speed of 350 km/h and cover the distance of 525 km in 142 minutes and the estimated cost of the project at 2011 price levels was 1.18 lakh crore (Amita, 2014). Despite cabinet approval, the project was revamped owing to large protests by people and other political parties across the state against land acquisition for the said project which involved the acquisition of 242 hectares of land in the Thiruvananthapuram-Kochi segment and 552 hectares on the Kochi-Kasaragod stretch (Ibid). In the 2019-20 budget again the finance minister proposed a north-south elevated corridor and the coast was estimated at 55000 crores (Issac, 2019). There is no logical explanation provided so as to how the estimated cost of the project has been curbed to such a low amount than the previous project proposal. The new project too remained in-paper as High-Speed rail corridors are proven to be not viable for the state. Thus in 10 years, the Kerala state had proposed two high-speed rail corridor plans and neither of them materialized.

### C. K-Rail

Urban policy experts criticize the transport infrastructure in Kerala and especially the rail infrastructure (which are slower than that of the neighboring states) as one incapable of meeting the demands of the future (Varma 2021); it has become a crucial junction of political involvement and detailed planning to find a palpable solution to bring about a marked reduction in travel time taken between major cities from the capital.

Kerala Rail Development Cooperation Ltd (KRDCL) is a joint venture of the Government of Kerala and the Ministry of Railways, Government of India, entrusted to adapt sophisticated and improved methods to better the railway infrastructure in the State. It aims to upgrade the existing infrastructure and aspire to supply high safety standards and value-added services through a sound financial strategy for optimum utilization of resources (HOME - K-Rail).

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KRDCL is the responsible agency for constructing, managing, and maintaining future railway projects in Kerala while aiming to become a leading organization in the country, ensuring international standards in the amenities provided to its commuters (HOME - Welcome to K-Rail).

Nevertheless, this new proposal to construct semi-high-speed rail has raised significant protests and resistance across the State from the (supposed to be) beneficiaries of the project. It is crucial to examine the nature of this resistance, often discarded as 'anti-developmental. Concerns of the citizenry, those whom this project might impact, arise from fear, of losing livelihood, being displaced, and losing social networks. The danger of environmental deterioration, land degradation, loss of resources, or the scarcity of resources together shows that the K-rail project effectively accentuates a sense of 'insecurity' (displacement) among ordinary citizens.

**Who Will Benefit from K- Rail and Who Will Not**

The DPR by the K-Rail provides data on the cost and the benefits of the project. The benefits primarily focus on the advancement it would manifest in the slow pace of traffic, the ease of connectivity between significant hubs of economic activity, reducing road accidents, and the improvements it would bring about in air quality (KRDCL, 2022).

Development is a social process that sees itself as a facilitator expanding fundamental freedoms. (Sen, 2001). The fruits of it are to be benefited and enjoyed by all. That be the view; however, the Silverline project needs a raincheck. KRDCL, in their project report (DPR. 2020), has published the ridership (expected) estimations, calculating the optimum fare for Silverline is assessed as Rs. 2.75 per kilometer at the 2020 level, whereas the basic fare for a sleeper class travel is 0.62 per km. A quick read of these figures gives us the following information. The number of commuters expected to shift to the new rail facility follows. Since the base fare exceeds the standard sleeper class travel, we assume the possibility of shifting to the new transport mode is less for those who use 2nd class travel.

Table 1 shows the estimates already assessed for the project; a detailed look at the figures in the table gives clarity regarding the people who would not be using the silver line and continue with their already existing means of transport. Historically oppressed persons or groups, children, physically challenged, senior citizens, and seasonal tourists (Kunjikkannan, 2021). More importantly, the poor and most vulnerable who stand a chance to lose their livelihood options would never be able to use this new speed rail as it would not be cost-efficient with

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their low-income levels. Those who are recipients of considerations from the railway will have to forfeit it against the new Silverline project, which will be going ahead whistling at high

**Table 1. Estimated number of commuters shifting to K- Rail as per the DPR**

| Sl No | Commuters | Number | Percentage |
|---|---|---|---|
| 1 | First Class A/C | 19133 | 24.0 |
| 2 | Bus | 19583 | 24.5 |
| 3 | Car | 26623 | 33.3 |
| 4 | Air | 6440 | 8.0 |
| 5 | Through new Add-on facilities | 4888 | 6.1 |
| 6 | Future Economic Growth | 3267 | 4.1 |
| Total | | 79934 | 100 |

Source: (Kunjikkannan, 2021)

speed as Kerala moves faster with international standard speed and outlook. The denial of access to service after having forcefully (almost) paid its cost is against the democratic and sustainable promises the State made, indicating the need to rethink the project's prospects. The analysis further makes it evident that this proposed new semi-high-speed rail will only increase the already existing economic divide and benefit the elite class (those at higher income levels) in society. The poor and economically disadvantaged have no access to the service, although their village, house, and resources are at stake with this new urban transport project. The environmental and social impacts this project causes will have to be borne by them, who lost land for a project that they will never be able to use.

**Breaking the claims**

Some of the claims raised by Silverline advocates and concerned citizens are examined in this section. Here we are attempting to examine the cause for resistance and the scope for this project.

**a. Heavy traffic congestion has caused a decline effect on the arrival of tourists**

One prominent claim observed during debates on the need for a semi-high-speed rail was that the increasing vehicular traffic and congestion on the highways cause visitors to endure more

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time in the traffic rather than seeing or visiting places of attraction for which they are in the region primarily. Such discomfortable experiences certainly affect the choices made the next time and as a result, this has resulted in tourists, (domestic and international) choosing to reduce their visit days or opting for short trips (K-rail, 2022). However, such claims are not only false and are promoting misrepresented facts. Foreign tourist arrival to the state during the year 2019 shows an increase of 8.52% than the previous year and domestic tourists to Kerala shows an increase of 17.81% from the previous year (Department of Tourism, 2021). Data on both foreign and domestic tourist arrival to the state of Kerala shows an increase and the flow remained unaffected until the COVID-19 restrictions were invoked and travel restrictions were in place. Nevertheless, it is observed that roads in the state require immediate attention as dents and potholes in the existing national highways and other PWD roads in the state have caused an increase in accidents and damages to vehicles.

**b. Strategic Relevance**

The networks of roads and railways are a critical facilitator of cargo transport, these networks have a significant role in ensuring food security by transporting commodities across the nation in a timely manner. The vision 2020 document (Railway Board, 2009) addresses the strategic role of the railway and the proposed corridors are on par with achieving this objective. The dedicated freight corridors (DFC) such as the Mumbai-Ahmedabad corridor, Delhi-Patna corridor, and Chennai-Bangalore-Ernakulam corridor (figure 1) are proposed in line with the same strategic objective. The Mumbai-Ahmedabad corridor is already being built by the ministry of railways and the Japan International Cooperation Agency through a special purpose vehicle (SPV), the National Highspeed Rail Cooperation Ltd (NHRCL, 2015). This high profile bullet train corridor connects the two cities with a travel time 2hrs 58 minutes. There is no proposed routes between Mumbai-Mangalore or vice-versa, thus the new project by the state of Kerala is a standalone project which will essentially be a stand-alone corridor parallel to the existing rail corridor. Here, we can observe that unless this new project is integrated with the existing networks, there is no financial viability for the proposed project especially when the state of Kerala is not a great performer in business indices at current standards (Rajendran, 2021). If regional integration and connectivity are not achieved through better transit platforms these projects will just be an additional burden on the taxpayer.

**c. Land Acquisition Complexities**

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Any new infrastructural development project involves a significant amount of land acquisition and the previous projects proposed by the state such as the expressway or the elevated way were dropped owing to the constraints faced while the acquisition of land from people was demanded. 1383Ha of land requires to be acquired for the said project and which involves 185 Ha of Railway land and 1198 Ha of private land (DPR, 2020). The government is facing a serious backlash against the way the KRDCL carried out the land acquisition procedure (Jha, 2020). Federal institutions have a democratic responsibility to protect the living habitat and ensure safe rehabilitation procedures in the case of acquiring land for a development purpose (Government of India, 2013). The major reason for the weighty protests against the project is observed to be of the dubious and hidden land acquisition procedures entertain by the said agency.

Efficient mobility platforms ensure progressive development for modern civilization, nevertheless inefficient executive strategies would function counterproductive if the said platforms have entertained hidden agendas and engaged in dubious land grabbing strategies.

Having discussed this the next section explores the environmental vulnerability context and the need for an EIA appraisal for the proposed project.

**The Need for Impact Assessment**

Environmental Impact Assessment (EIA) came into force as part of the Environmental Protection Act (1986); the EIA process focuses on problems, conflicts, and natural resource constraints that stand a chance of being affected by the realization of the project's viability (Murthy and Patra 2005). It studies the impact or harm of the proposed project to people, their land/house/livelihood. In essence, EIA is a process of identifying, predicting, evaluating, and mitigating the development proposal's biophysical, social, and other relevant effects prior to significant decisions being taken and commitments being made. The public hearing is an integral part of the EIA process. It ensures a quality opportunity for those affected by the proposed project to voice their concerns and register dissent and resistance.

The EIA process is vital in analyzing the environmental viability of any proposed infrastructure projects. Kerala's vulnerability in the face of natural disasters and climatic dynamics is severe (Government of Kerala 2019). With a humid tropical climate, the State depends predominantly on monsoons (majorly south-west monsoon-80%) for its water needs. Due to climate change, the increased intensity of monsoon discharges fills the rivers and dams, leading to floods in the State. It is emphasized that floods and landslides are the most common natural calamities the

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state face. In addition to that, the latest assessment report by the Intergovernmental Panel on Climate Change (IPCC, 2021) predicted the recurrence of heavy rain and isolated events of extreme rainfall over central India regions and parts of Western Ghats (Roxy et al., 2017). Given the circumstances, it is expected that the State would witness floods during the north-east monsoon period, water scarcity during summer, and an increase in temperature, among other things (Government of Kerala 2019).

According to the DPR released by the KRDCL (DPR 2020); 1221 hectares of land in various villages of eleven districts in Kerala require to be acquired for the proposed semi-high-speed rail corridor project for 529.45 km. The proposed corridor will have 292.728km embankments, 11.528km tunnels, 12.991km bridges, 88.412km viaducts, 101.737km cutting, and 24.789km cut & cover. The set alignment shows that it goes through the villages and over farmlands, wetlands, paddy fields, rivers, and hills (tunnels). Disturbance to such a vast area of land could be catastrophic in the future as climate change intensifies. A claim from the advocates of the Silverline is that provided the project is realized that it would drastically improve air quality and reduce vehicle congestion on the roads. Such outright claims without the support of adequate data call for re-check. In our context, KRDCL has conducted its rapid EIA and submitted the report (Centre for Environment and Development 2020). However, this report lacks credibility. Firstly, it has considered only one season for its assessment period. Secondly, there is a significant absence of data on the estimated population affected by the proposed rail corridor. Massive developmental projects like the proposed rail corridor should undergo thorough social and environmental impact assessments. It requires the State to acquire private land to carry forward with the project, and the Land Acquisition Act (2013) demands constituting a body to undertake said studies. However, it gives exceptions to railway projects.

Given the environmental vulnerability context, any new developmental project will significantly impact the State's already fragile physical environment. In this highly vulnerable environment context, this study advocate for a detailed and open EIA process for the proposed Silverline project. The proposed rail corridor project must undertake detailed socio-economic and environmental assessments considering the experiences of the floods in the recent past and adopt a holistic approach in planning and policymaking as envisaged in the Rebuild Kerala Program.

Concerns of the population who are to be affected by developmental projects should have a dignified opportunity to voice them, and as democracies, it must be recognized as constitutional

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for it comes directly under Article 21 of the Constitution of India, the Right to Life. However, they are often dismissed as majoritarian governments choose to patronize and begin to see people away from the governing process, outrightly discarding the notion of transparency and participative democracy. In this context, the dream mega-project of the State of Kerala, the Semi High-Speed Rail (Silverline) Corridor, must undergo a detailed study of the environmental and socio-economic impacts it would burden its population with.

**Development and Displacement**

In 1994, studying the World Bank assisted developmental projects from 1986-to 1993, which greatly entailed population displacement, found most were in transportation, water supply, and urban infrastructure projects (World Bank, 1996). Population displacement due to a developmental project is a serious concern requiring to be addressed and solutions prepared. Today development-induced displacement is global and gaining faster momentum, yet evidence suggests that the cost is disproportionately borne by the poor and vulnerable, given the numerous beneficiaries (Robinson, 2003). World Bank-sponsored assessments have calculated that since 1990 infrastructural projects are contributing steadily to the growing numbers of internally displaced persons (Cernea and McDowell 2000). Displacement is often forced and sometimes voluntary; however, the line between them is narrowed as policy and legal frameworks change and become more development-friendly than the environment or the people.

For a long time, the perceptions of development were seen through income levels (Barder, 2012). Those views have undergone tremendous change since the post-cold war period and with the advent of globalization in the developing world (Dalby, 2003). To look beyond and also to better understand the concept of development, to see development as the freedom to recognize political freedoms and transparency with people, freedom of access, and protection from poverty, Amartya Sen (2001) visualized development as a process that facilitates actual freedoms.

Taking on internal displacement Walter Kalin (2014) stated that people are forced to vacate their habitual residence due to authorities or private actors choosing to implement development projects such as mines, dams, airports, and upgrading of urban areas. The effects of unplanned urbanization are often mass displacement and environmental deterioration. Achievements in rapid economic growth, investments in industrial projects, dams, roads (transport), power plants (energy), and new cities have been made possible only through the massive land

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acquisition and subsequent displacement of people. Planning infrastructure projects and the possible cost overruns are to be taken into cognizance based on the geographical location (Cantarelli, Flyvbjerg, and Buhl 2012), enhancing the project performance and reducing ambiguities and insecurities shrouded around development projects.

Asian Development Bank, in their regional overview (Prakash Mathur, 2014) stated that Rapid and often unplanned urbanization increases the risk of disaster displacement by concentrating people in areas exposed to hazards (IDMC, 2021; Prakash Mathur, 2014). The international non-governmental organization working on internal displacement, the International Displacement Monitoring Centre (IDMC), in their report, records around 40.5 million new displacements across the world in 2020; among these, disasters triggered displacements were three times more than conflict or violence did in the past. According to the report, the statistics for India are 3,856,000 displacements due to disasters and 3900 displacements due to conflict (IDMC, 2021). These figures and the disaster-prone context in a highly populous geographical area should be considered before venturing to plan new infrastructure projects, which will have severe implications on society's environmental and social life.

The studies conducted in the post-flood scenarios of Kerala had marked the environmental vulnerability of the State and new developmental initiatives must be planned in this vulnerability context (CWC, 2018; United Nations, 2018; Walia & Nusrat, 2020). The linear terrain features of Kerala, Western Ghats terrain, have steep slopes. In contrast, the rest of the terrain is rolling or plains, reducing the time required to travel the water from the farthest point to most reservoirs to two to three hours (CWC, 2018). Moreover, the high population density of 860 persons per square kilometer makes it more susceptible to disaster loss and damage. Kerala is continuously witnessing serious cases of inundation and saline water intrusion in Kuttanad, Alappuzha where cultivation is done below sea level (Aravalath & Kasim C, 2022).

## Conclusion

Any modifications to the environment will undoubtedly have repercussions caused to those who depend on it for resources and sustenance. If we have learned one thing about climate change, that it makes the poor poorer and the vulnerable more vulnerable. The State is recovering from the floods it had experienced in the past. In the context of the visible manifestation of climate change in various forms, especially in Kerala in the form of floods, cyclones, landslides, etc. the State requires to prepare itself better. Let us not forget that Kerala

is now a multi-hazard prone state and it is predicted to experience immense misery and hardship (Walia and Nusrat 2020).

Lives and livelihoods cannot be traded for mere gain received in the form of reduced travel time, which, as the analysis shows, will be helpful only for a minority section (those at higher income levels) of society. The detailed flood reports analyzed have shown that relevant data and detailed planning are required to execute a new mega-project in the light of expected and experienced climate change impacts in the form of floods and landslides.

This study is not anti-development, but it has tried to bring to light the not so looked issue of possible internal displacement and allied insecurities from a macro perspective. The analysis has made the need to discuss the internal displacement and future disaster scenarios before going ahead with the new rail corridor project. A detailed environmental impact assessment is recommended and a comprehensive social impact assessment is suggested. The State should take its population in trust and effortlessly attempt to convince the population about the need for a project that has lesser utility.

KRDCL has envisaged this project without detailed consideration with the stakeholders and a project without consulting those whom it might affect which is unconstitutional and requires judicial intervention to prevent the imperialistic nature of a single state from displacing its population at its behest. The State should look at strengthening the existing inland water navigation facility and frame detailed plans and policies to reduce the maximum risk of affecting the already fragile landmass in the State. Kerala must not forgo the lessons it had learned from the past neither it should neglect the environmental tragedy a project of this enormity could bring upon its population.

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