Review of Industrial and Development Corridors in India

Hariharan Ramachandran

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ISID
Institute for Studies in Industrial Development
4, Institutional Area, Vasant Kunj Phase II, New Delhi - 110 070
Phone: +91 11 2676 4600 / 2689 1111*; Fax:* +91 11 2612 2448
E-mail: info@isid.org.in; *Website:* http://isid.org.in

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List of Abbreviations

ADB	Asian Development Bank
AKIC	Amritsar–Kolkata Industrial Corridor
BIP	Bureau of Investment Promotion
BMEC	Bengaluru–Mumbai Economic Corridor
CBIC	Chennai–Bengaluru Industrial Corridor
CMD	Chairman and Managing Director
DFC	Dedicated Freight Corridor
DFCCIL	Dedicated Freight Corridor Corporation of India Limited
DIPP	Department of Industrial Policy and Promotion
DMIC	Delhi–Mumbai Industrial Corridor
DMICDC	Delhi–Mumbai Industrial Corridor Development Corporation
ECEC	East Coast Economic Corridor
EPZ	Export Processing Zone
EU	European Union
GIDB	Gujarat Industrial Development Board
HSIIDC	Haryana State Industrial & Infrastructure Development Corporation
LARR	Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement
MW	Megawatt
NCT	National Capital Territory
RVL	Reliance Ventures Limited
SAARC	South Asian Association for Regional Cooperation
SASEC	South Asia Sub-regional Economic Cooperation
SEZ	Special Economic Zone
ULBs	Urban Local Bodies
VCIC	Visakhapatnam–Chennai Industrial Corridor

Review of Industrial and Development Corridors in India

H. Ramachandran[*]

[***Abstract***: *In India, five planned corridors have been proposed. All though each of these passes through several states, the capacity of different states to take advantage of opportunities offered by the corridor varies substantially. The corridors are: Delhi-Mumbai Industrial Corridor (DMIC); Bengaluru-Mumbai Economic Corridor (BMEC); Chennai-Bengaluru Industrial Corridor (CBIC); Visakhapatnam-Chennai Industrial Corridor (VCIC); and Amritsar-Kolkata Industrial Corridor (AKIC). The corridors are at different stages of implementation; of the proposed five corridors, some such as the DMIC and CBIC corridor are in the early phase of implementation, whereas others are at or just out of the concept stage. Although the corridor development may be perceived as a single initiative, it is not a single project. It is a complex combination of many projects that are initiated at various points of time with different durations in the influence area of the corridors. Economic hubs planned on the corridors are important drivers of regional development. It is not clear what specific advantages accrue by vesting the responsibility of developing both corridors and economic hubs in a Corridor Authority. The issues discussed in this paper draw largely from the DMIC, and include the following: (a) corridors as instruments of aiding the suction process and as instruments of regional development; (b) land acquisition and direct purchase of land by the investor; and (c) combining development of industrial hubs with urban development.*]

Keywords: Industrial Corridor, economic hub, regional development.

1. Introduction

I have argued earlier that whatever the nature of urbanization—'top heavy', 'tertiarized', or 'sans industrialisation'—India needs to promote urbanization since we can demonstrate that poverty is better fought through urbanization than by focussing only on the population living in 6,00,000 small and scattered villages and hamlets which are unlikely to attract substantial investment in infrastructure (Ramachandran, 2009; Ramachandran, 2015) I had argued therein that there is a need to shift the policy focus to promoting urban growth. While rural development programmes continue to be the centrepiece of our antipoverty strategy, two proactive urban–industry policies were introduced in the last

[*] Visiting Professor, Institute for Studies in Industrial Development, New Delhi, Email: hariharan_ramachandran@hotmail.com

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decade pertaining to: (a) Special Economic Zones (SEZs), and (b) Industrial and Economic Corridors. There is a strong interdependence among these two models. Corridors are transport arteries—railways, roads, canals, and rivers that require long strips of linear physical space passing through many administrative jurisdictions. On the other hand, geo-spatial industrial clusters are compact spaces—usually within a state. While an industrial corridor such as the Delhi–Mumbai Industrial Corridor (DMIC) is planned and monitored by the Delhi–Mumbai Industrial Corridor Development Corporation (DMICDC), SEZs are overseen by the Ministry of Commerce and Industry.

Historically, industrial estates have been created—usually at the then peripheries of large towns—much before export processing zones (EPZs) and SEZs were conceptualized. In all such cases, land has been acquired by various governments and allotted to private companies to establish manufacturing facilities. The major difference between the industrial estate and the EPZ/SEZ is that the former is within the ambit of city planning authorities, and the latter outside the purview of such authorities. In addition, a conditionality of export focus is attached to the latter.

Economic and industrial corridors have been viewed following dependency theories of regional development; for example, the broad gauge railway lines connecting the rural hinterland—cotton-producing and mineral-rich regions—with ports, resulting in a suction process of draining raw materials and natural resources from the hinterland into the metropolitan economy during the colonial era (Chattopadhyay and Raza, 1975. Such an analytical framework is valid to a large extent when dealing with development issues in the context of political colonization wherein the colony was the economic hinterland and the metropolitan economy was the colonizer. This model was empirically tested in the postcolonial period (Ramachandran, 1983). An alternative analytical framework is to view corridors as agents of regional development and as agents to reduce regional disparities. This paper steers clear of this bipolar viewpoint, and proceeds with the latter framework since the government views corridors as instruments of regional development.

This paper presents the basic facts relating to planned corridors, which is followed by sections that deal with the issues confronting corridor development approaches. The issues discussed are: (a) bottlenecks—including land acquisition in the case of corridors and direct purchase of land by investors in industrial hubs/SEZs vis-à-vis land acquisition, (b) urban–industrial disconnect in planning, and (c) combining development of industrial hubs (usually intrastate) with corridors that involve more than one state.

2. Industrial and Economic Corridors

There is no standard definition of what industrial corridors are. An industrial corridor is expected to attract large investments in manufacturing and generate substantial employment in a contiguous region on nodes along a transportation corridor. The efficiency of transportation corridors increases competitiveness by substantially reducing distribution costs. A more comprehensive model is an economic corridor that integrates

transport network development and investment in manufacturing, trade, and real estate with necessary regulation to address environmental safeguards. The corridors provide critical connections between urban centres wherein each urban centre is not a standalone hub of development but a part of the regional network. The Asian Development Bank (ADB) has been in the forefront among the promoters of the development corridor concept, and has the experience of monitoring planned corridors in African and Latin American countries (see, for example, Brunner, 2013). The working paper of the ADB (Brunner, 2013) also includes case studies of some corridors—the Baltics—Structural Investment within Regional Cohesion, EU Corridor from Latvia to Frankfurt, the Leipzig to Frankfurt Economic Corridor, the GMS (Transport) Corridors, and the SASEC–SAARC (South Asia Sub-regional Economic Cooperation–South Asian Association for Regional Cooperation) Corridors. While the positive and potential impacts of these on regional economy and improved mobility are noted—in the corridors that cross international borders—a lot of time gained through improved transportation is lost due to border formalities (Brookings Report, 2013).

3. Planned Development Corridors in India

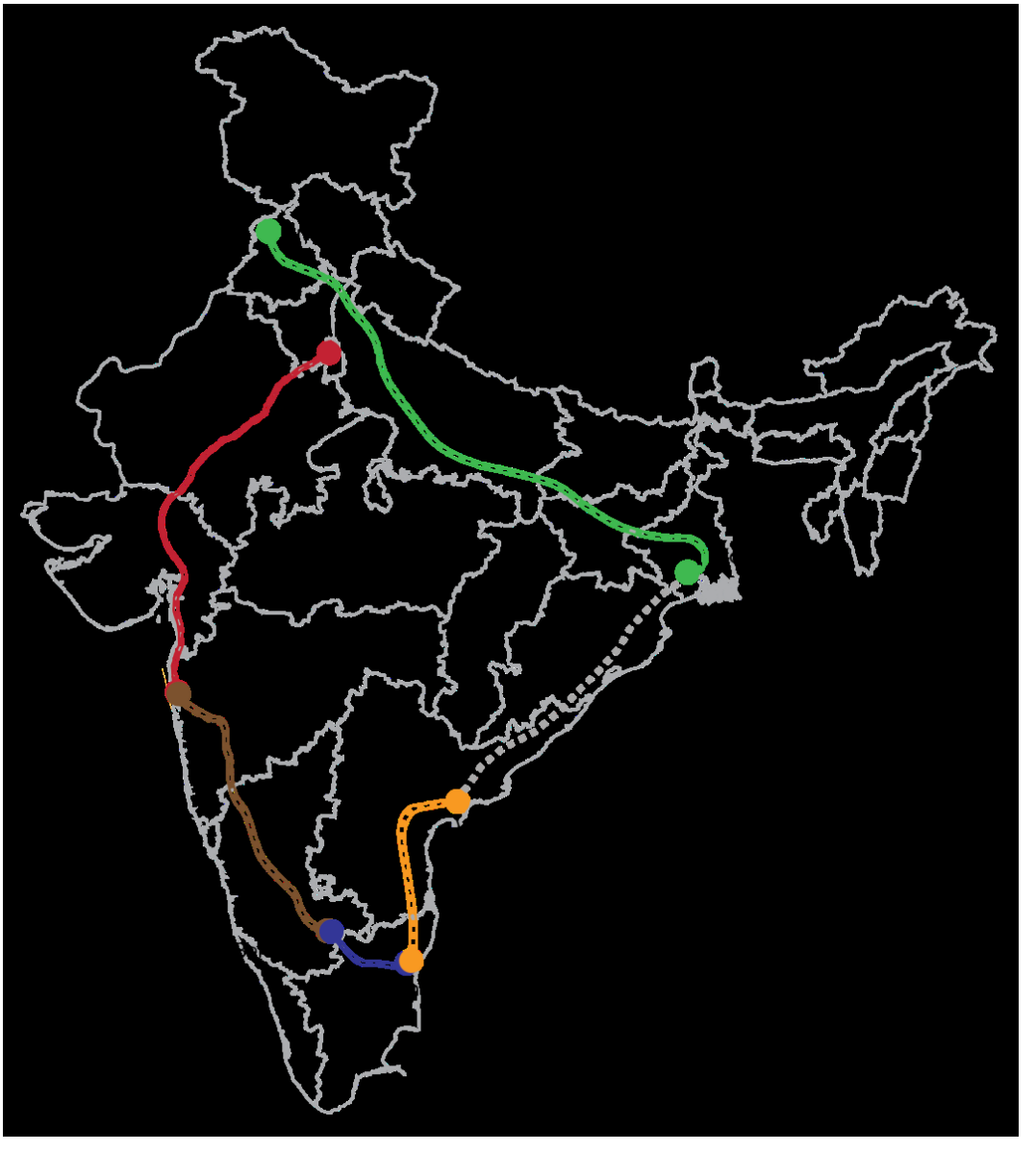
In India, five planned corridors have been proposed, each of which pass through several states, and are all at different stages of implementation (Figure 1). The corridors are—the DMIC; Bengaluru–Mumbai Economic Corridor (BMEC); Chennai–Bengaluru Industrial Corridor (CBIC); Visakhapatnam–Chennai Industrial Corridor (VCIC), and Amritsar–Kolkata Industrial Corridor (AKIC). The ADB and the Government of India signed an agreement in 2017 relating to loans and grants to develop the 800-kilometer VCIC, which is the first phase of a planned 2,500-kilometre-long East Coast Economic Corridor (ECEC). While the corridor policy is a centrally led policy, states have to compete to attract industries. Environmental, labour, and land acquisition regulations among others are enforced differently in different states in order to increase competitiveness. Such a competition has also led to what may be termed as an 'interstate war of concessions' that began with economic liberalization.

Two of the five corridors are Dedicated Railway Freight Corridors (DFCs) while the others are based on Roads. Of the five corridors, the DMIC, based on DFC, has gone beyond the drawing board stage. The BMEC is expected to pass through different cities — Pune, Satara, Kolhapur (Maharashtra), Belgaum, Dharwad, Davanagere, Haveri, Chitradurga, and Tumkur (Karnataka). The government has envisaged at least four new cities to boost manufacturing activity along the corridor for which the detailed plan is yet to be worked out.

The Department of Industrial Policy and Promotion and Japan International Cooperation Agency are currently preparing a comprehensive plan to develop the CBIC. The corridor is essentially to promote trade with East Asia by promoting industrial hubs, and to enable faster movement of goods from this hinterland to the Chennai and Ennore ports on a 260-

kilometre expressway. Much of the corridor falls in regions of dry land agriculture. Some such as the DMIC and CBIC corridors are in the early phases of implementation, whereas the others are at or have moved just beyond the conceptual level.

Figure 1: Proposed Industrial/Economic Corridors in India



4. Delhi–Mumbai Industrial Corridor

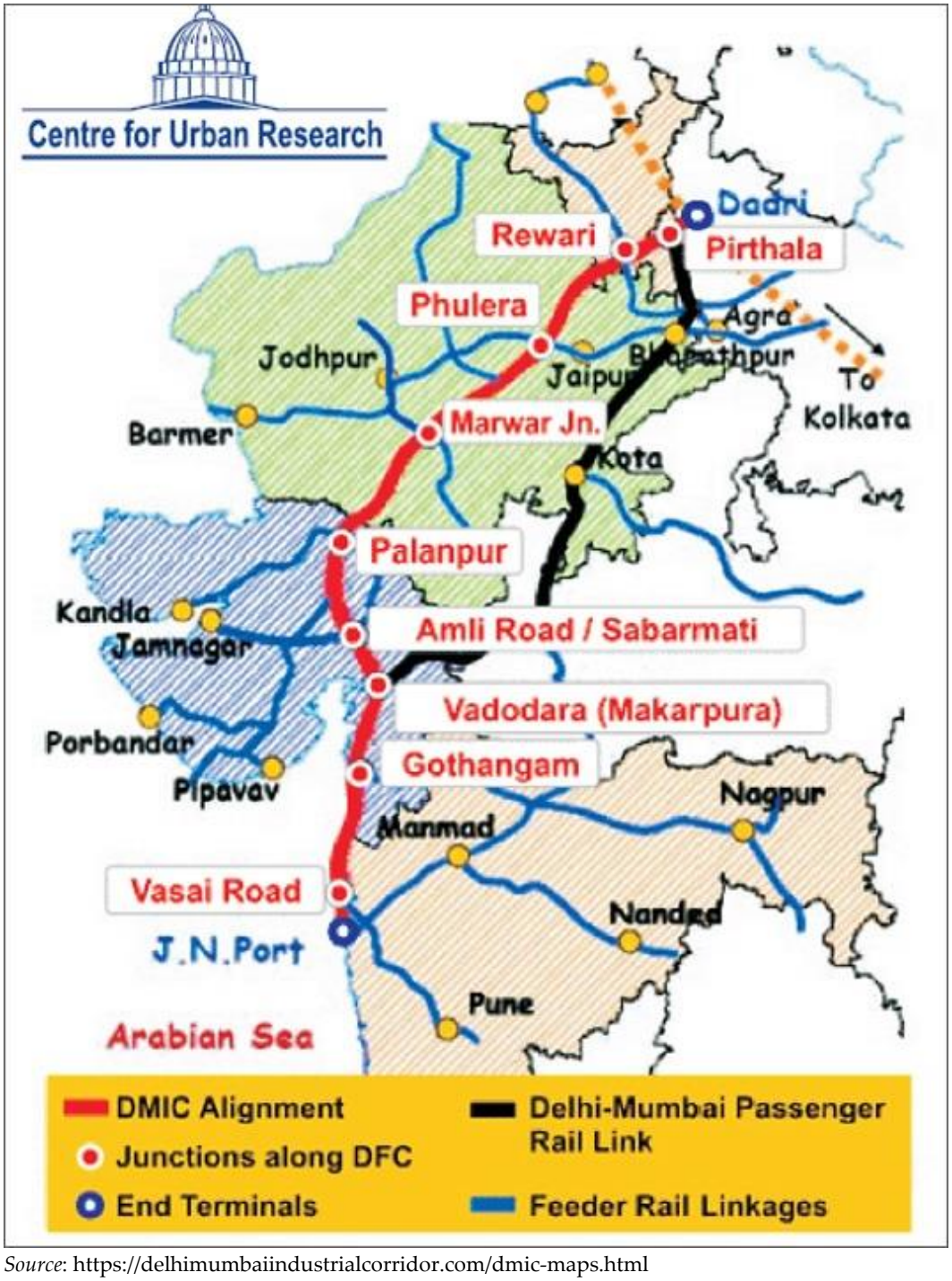
The DMIC Project is a government promoted project aimed at developing an Industrial Zone covering parts of six states—the National Capital Territory (NCT) of Delhi, Western Uttar Pradesh, Southern Haryana, Eastern Rajasthan, Eastern Gujarat, and Western Maharashtra (Figure 2). The backbone of the corridor is the DFC connecting Jawaharlal Nehru Port near Mumbai to Dadri near Delhi which was expected to be completed by 2017, but is unlikely to be completed before 2023. The DFC will allow high speed connectivity for high axle load wagons (25 tons) of double stacked container trains supported by high power locomotives. It is also envisaged that the alignment of the proposed corridor will have nine junction stations for exchange of traffic between the existing railway system and the DFC (Figure 2). The junctions are—Vasai Road, Gothangam, Makarpura (Vadodara), Amli Road (Sabarmati), Palanpur, Marwar Junction, Phulera, Rewari, and Pirthala (Tughlakabad).

The implementation of the DMIC is envisaged through a four-tier decision-making system: (1) at the apex, a body headed by the finance minister, with concerned central ministers and chief ministers of the DMIC states as members for overall planning and approvals, (2) a corporate entity—the DMICDC to coordinate, finance, and implement the project. The Corporation is headed by a full-time chairman and managing director (CMD) and the management board has representatives from the central and state governments and financial institutions, (3) a state-level coordination/nodal agency for coordinating the activities of the DMICDC, state government entities, and special purpose vehicles, and (4) project-specific special purpose vehicles which would actually implement the project.

The management of the project at the state level is undertaken by nodal agencies appointed by state governments, for example, the Gujarat Infrastructure Development Board (GIDB) in Gujarat, or the Bureau of Investment Promotion (BIP) in Rajasthan. The Central Government, through the DMICDC, co-ordinates DMIC development across the six-state project influence area. Furthermore, the DMICDC acts as a financial intermediary, developing and disseminating financial instruments, negotiating loans and advances, as well as formulating schemes for the mobilization of resources and extension of credit for infrastructure. State government agencies have also received central assistance for the planning of these projects through consultants who are hired and paid for by the DMICDC.

Some assorted seemingly disjointed preliminary projects have been finalized for all DMIC states by the Government of India. Among others, these projects include an expressway (Gujarat), a water supply project (Madhya Pradesh), exhibition-cum-convention centres (Haryana and Maharashtra), a multi-modal logistics hub (Uttar Pradesh), and road links (Rajasthan). According to information available on website of the Department of Industrial Policy and Promotion (DIPP) as of 31st July 2015, perspective planning of the overall DMIC region has been completed and approved. The DMIC Project Implementation Trust Fund was created, which has been re-constituted to cater to four other such corridors planned

Figure 2: Delhi–Mumbai Industrial Corridor with Feeder Lines



Source: https://delhimumbaiindustrialcorridor.com/dmic-maps.html

across India. In March 2017, the DMIC Project Implementation Trust was rechristened as the National Industrial Corridor Development and Implementation Trust.

The DMIC is expected to span a length of about 1540 kilometres much of which falls in Rajasthan and Gujarat (about 75 per cent of the corridor). Gujarat and Rajasthan are considerably different in terms of levels of economic development and their institutional and governance mechanisms. Gujarat has been noted for its model of development which promoted large scale industrialization. Gujarat has historically been a fairly industrialized state, and has certain mechanisms and policies in place to facilitate this.

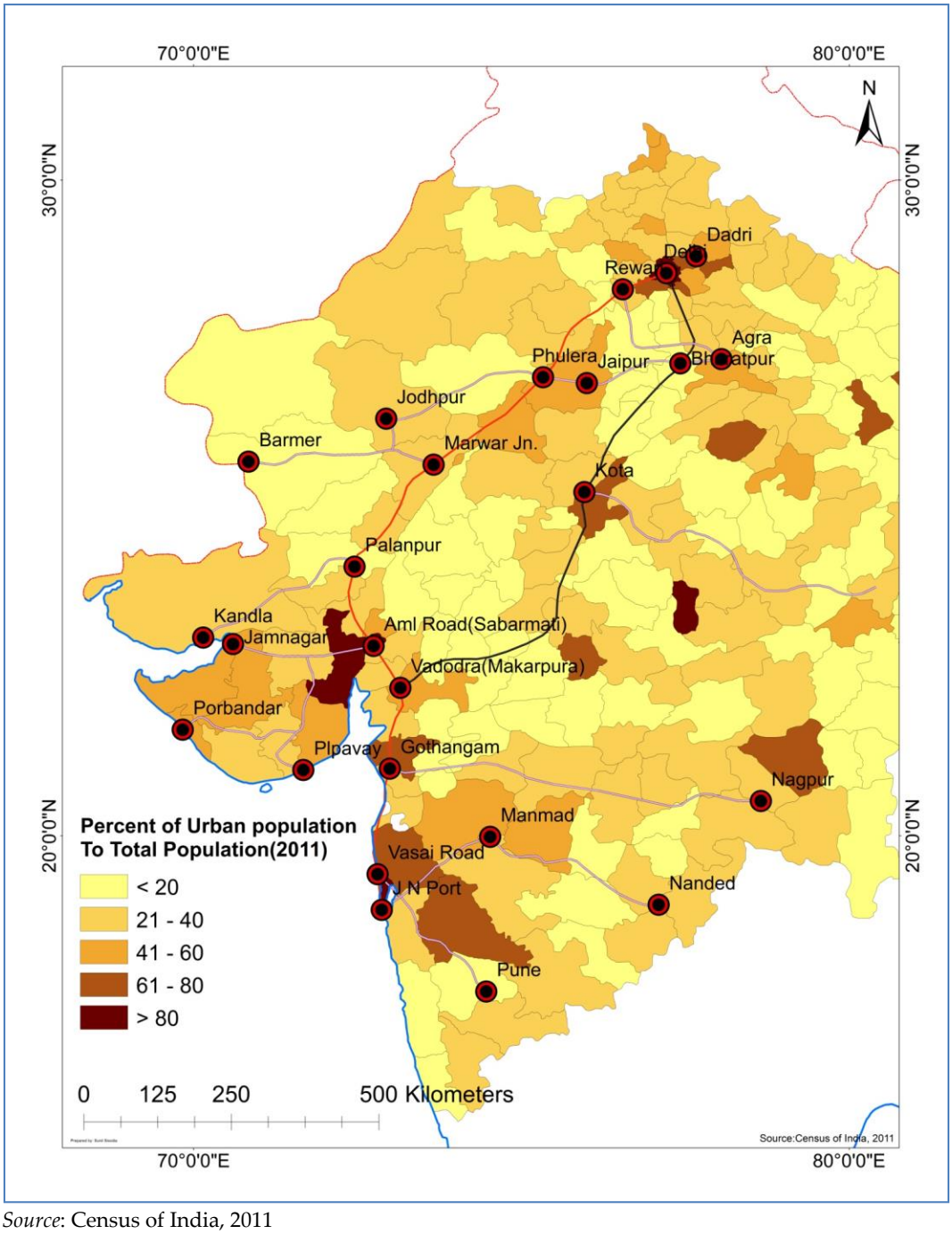
The corridor would have six investment hubs spanning 1200 square kilometres. Six investment regions and five industrial areas have been shortlisted. The former include: (1) Dadri–Noida–Ghaziabad in Uttar Pradesh, (2) the Manesar–Bawal region in Haryana, (3) Khushkhera–Biwadi–Neemrana in Rajasthan, (4) Pitampura–Dhar–Mhow in Madhya Pradesh, (5) Bharuch–Daheri in Gujarat, and (6) Igtapuri–Nashik–Sinnar in Maharashtra. The latter include: (1) Meerut–Muzaffarnagar (Uttar Pradesh), (2) Faridabad–Palwal (Haryana), (3) Jaipur–Dausa (Rajasthan), (4) Neemuch–Nayagaon in Madhya Pradesh, and (5) Alewadi/Dighi in Maharashtra.

Many of these, as can be noted, are existing industrial–urban complexes or to be developed in the periphery of already established complexes. However, industrial agglomeration is shaped by forward and backward linkages. If the location of an industry is such that it generates a high demand for goods, it offers a high backward linkage. Firms may also need access to inputs, and if the location provides a variety of goods as input, it offers forward linkage. There are some forces that act against agglomeration forces— a highly populated region offers a strong backward linkage, but land costs and rents, as well as the wage rates of skilled labour, are also high. If the forward and backward linkages are strong enough to overweigh the negative location effects, industrial agglomeration takes place (Srivastava, 2011).

From the website of the DMIC, one finds that the corridor would span an area of 1 kilometre on either side of the 1543-kilometre-long corridor. This would amount to over 3,000 square kilometres in one of the five proposed corridors as against the entire urban area in India of about 100,000 square kilometres.

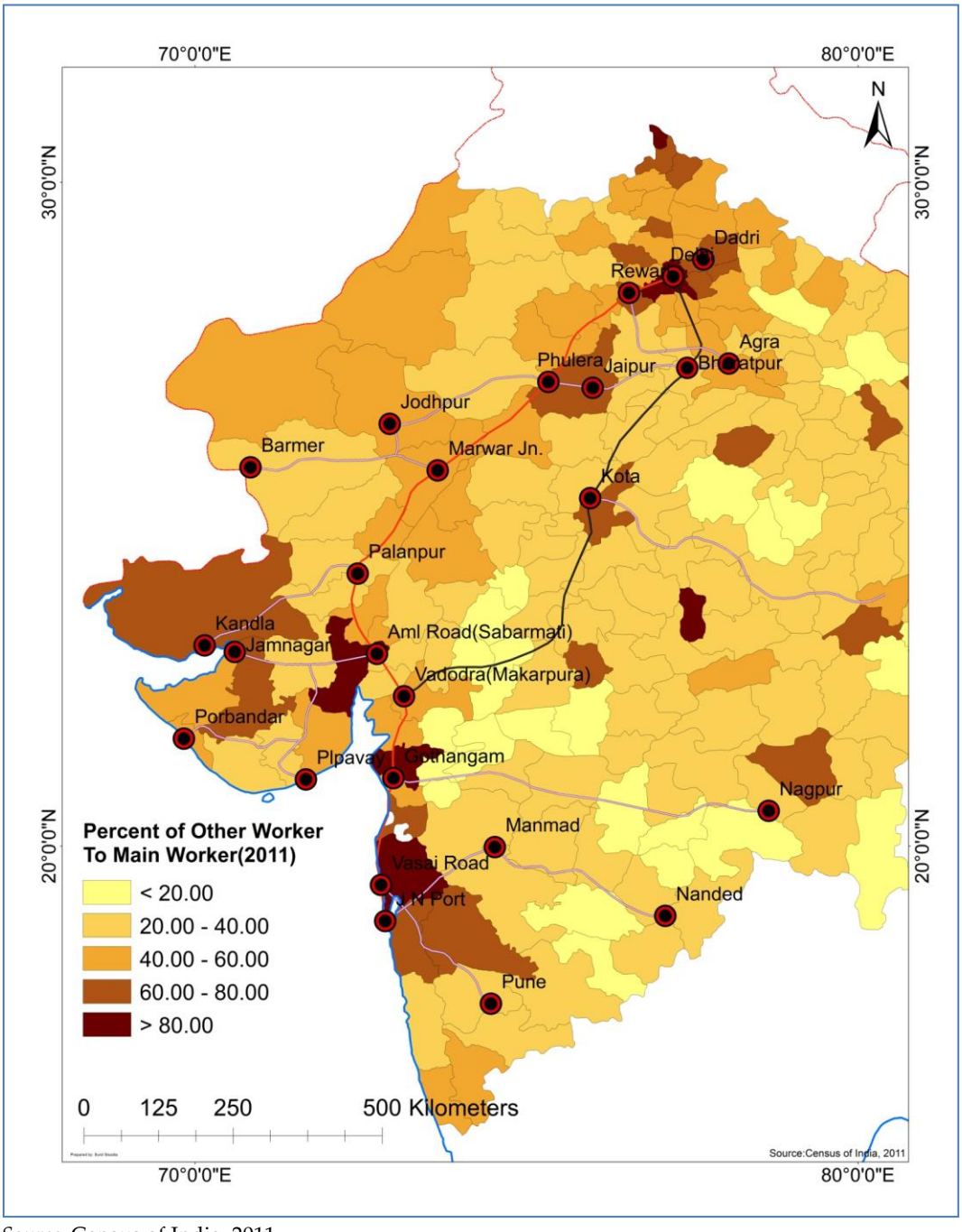
There are attributes of the influence zone which appear to be conducive to urban growth of existing towns and new urban centres. The districts in the influence zone of this corridor and the feeder lines of about 150 kilometres on either side of the DFC are characterized by medium to low levels of urban population (Figure 3), giving scope for increased urbanization. Much of the land along the corridor is characterized by rain-fed agriculture. As a result, a substantial proportion of the workforce is engaged in non-agricultural activities—presumably in the tertiary sector in the region (Figures 4 & 5).

Figure 3: DMIC Influence Region: Per Cent Urban Population 2011



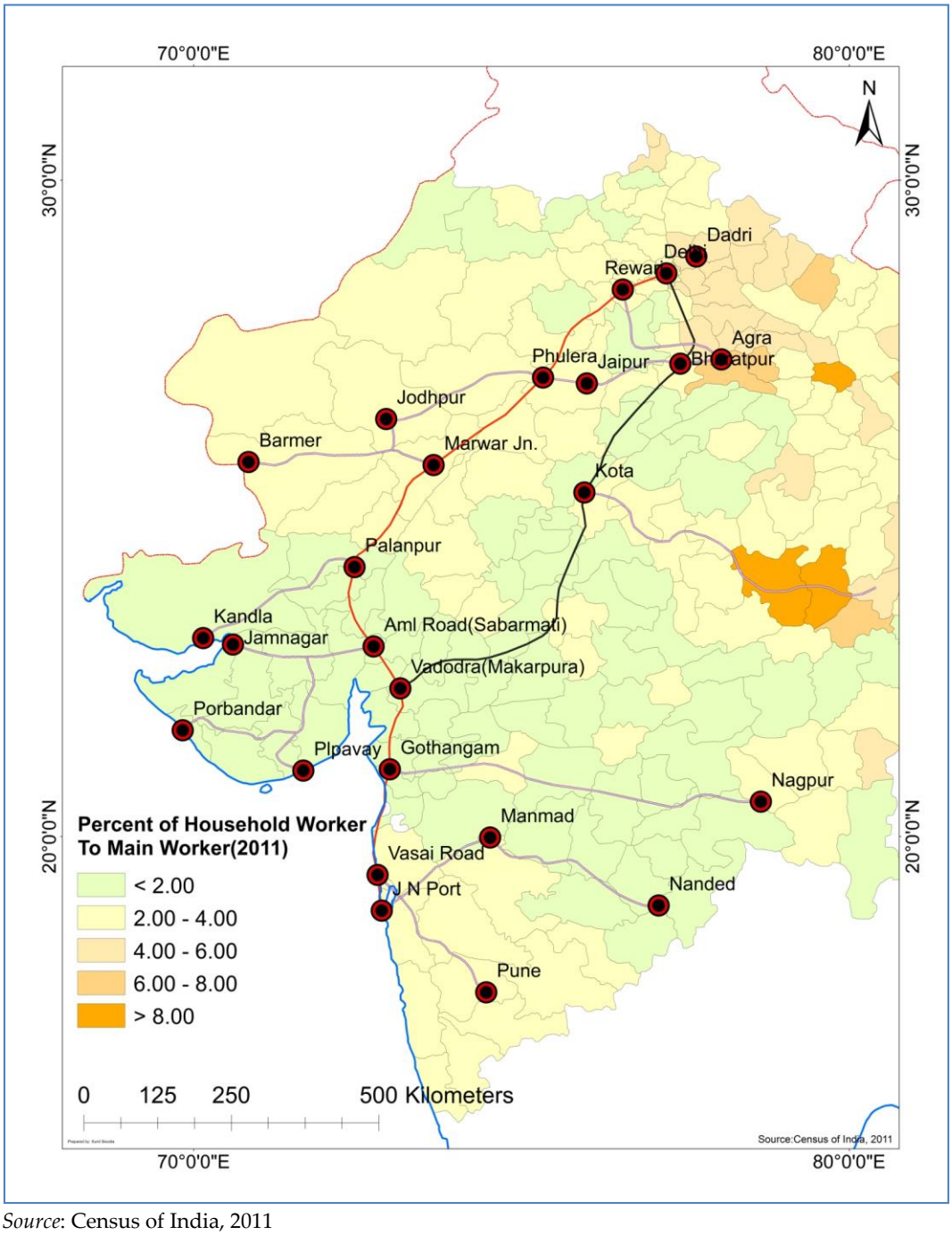
Source: Census of India, 2011

Figure 4: DMIC Influence Region: Per Cent Main Workers other than those in Agriculture and Household Industry



Source: Census of India, 2011

Figure 5: DMIC Influence Region: Per Cent Main Workers in Household Industry to Total Main Workers



Source: Census of India, 2011

5. Bottlenecks in DMIC Development

Many questions have been raised about these corridors—particularly about the DMIC. Some of the issues such as land acquisition and related concerns of rehabilitation and compensation, delays, and abandoned projects are common to the debate on SEZs and other proposed industrial hubs as well as corridors.

Firstly, the DMIC's success in many ways is presumably tied to the completion of the 1504-kilometre-long DFC being executed by the Indian Railways. The Dedicated Freight Corridor Corporation of India Limited (DFCCIL) was set up as a company in 2006 under the administrative control of the Ministry of Railways to mobilize financial resources, and plan, construct, and maintain the operation of DFCs. Delays in operationalizing the DFC would cause delays in developing the DMIC. The progress of the DFC between Delhi and Mumbai has been behind schedule. Approval for building the corridor was accorded by the Cabinet in 2008. According to the DFCCIL, contracts for 41 per cent of the 1504-kilometre railway line and for 12 bridges over various stretches of rivers were given only in 2015–16. All of this has to be completed by October 2019, which is the revised deadline for the entire Freight Corridor. It is unlikely that the work would be completed by the revised deadline. The contract for the design and construction of 'signalling and telecom works' for an about 1000-kilometre stretch comprising almost two-thirds of the entire corridor commenced in January 2016. The deadline for finishing the work was about 7 years.

Secondly, there are the bottlenecks pertaining to the DMIC itself. The progress of work in the DMIC project—one of the largest infrastructure development projects—continues to see a number of difficulties arising out of coordinating decision-making and necessary actions across six states, as well as budget constraints of different states. Delays have caused some of the potential investors to withdraw.

Thirdly, there are bottlenecks created because of bad planning. 'Nothing exemplifies the DMIC conundrum better than a decision taken by its board on November 16, 2016 to return land to the respective state governments because gas fired power plants were abandoned (due to non-availability). These 1000 megawatt (MW) power plants were to be set-up at Guna in Madhya Pradesh, Ville Bhagad and Indrapur in Maharashtra and Vaghel in Gujarat' (Sai, 2018). Abandoning basic infrastructure projects such as electricity would impact the success of the corridor project as a whole.

Fourthly, while the work on the DMIC has started picking up momentum from about 2018, the government has diluted its focus on this corridor. As mentioned earlier, the fund was meant only for the DMIC but now it would be shared with four other such planned corridors across India. The difference between master plans on the drawing board and progress on the ground indicates that the concept has not been thought through.

It is not clear what advantages would accrue by placing the responsibility of development of investment regions and industrial hubs (each of which falls under the jurisdiction of an

individual project state) on the DMICDC which has a cumbersome five-tier interstate management structure. Delays in decision making have caused some of the potential investors to back out. For example, 'Hindustan Construction Company Ltd. signed two separate agreements in 2009 and 2011 with Gujarat to invest roughly $8 billion for a waterfront city and a renewable energy park. Later the company abandoned the plans. Development beyond the initial 22.5 square kilometre area in Dholera remains uncertain as farmers opposing land sales have a case pending in the Gujarat High Court demanding the government scrap its plans' (Pradhan and Marlow, 2017).

6. Land for Corridors and Urban–Industrial Complexes

Historically, various governments in India have been acquiring land for 'public purposes' such as irrigation schemes, roads, railways, and urban–industrial uses. Land acquisition by governments has also faced public protests and litigation for many decades across most states in India. Several studies including those by Levien (2011), Raghuram, et al. (2011), and Patil, et al. (2013) have shown that land acquisition processes (along with environmental clearances) are often held to be primarily responsible for the delays in project completion. The India Infrastructure Report 2009 notes that 70 per cent of delays in infrastructure and other development were caused due to issues related to land acquisition (Infrastructure Development Finance Company Limited, 2009).

Protests and litigations have revolved largely around the issue of monetary compensation for land acquired, and resettlement and rehabilitation of the affected population. Among the affected rural population, the most vulnerable are those who do not own land but are dependent on cultivation for their livelihood, be it share croppers, tenants, or agricultural labourers. The debate has also focused on the purpose being public or otherwise in the context of SEZs.

The corridors themselves would come under the category of public purpose and as such land can be acquired by the government. If all the five corridors being proposed are developed, the estimated land to be converted could be of the order of about 10,000 square kilometres. There is however a debate about the proposed industrial hubs and SEZs as to whether they fall under the category of 'public purpose'. Two different routes are available for provision of land for urban industrial use: (a) largely direct purchase of land by the investors and (b) partial land acquisition by the Government to enable geo-spatial contiguity in urban industrial development.

If farming is uneconomical, unviable, and farmers are facing unreliable prices, it is not clear why should they be forced to cling on to small parcels of land that are believed to give a return of about Rs 15,000 for an acre annually. The reasons according to the well-wishers of farmers are, (a) farming is a way of life, (b) the farmer including agricultural labour dependent on him have no other skills to find employment in non-agricultural sectors, and (c) the farmers are not trained to manage large funds that would accrue because of sale/acquisition of land.

That there is a need for slimming the workforce in agriculture and the need for absorbing surplus labour released in non-agricultural activities, is generally accepted. Broad basing of the rural economy is a partial response. Expansion of existing cities is more likely to eat into cultivated areas in the urban–rural fringe. The acquisition of land for development can be much more difficult in existing settlements in terms of both supply and cost—there may not be enough available land for projects and available land may have high acquisition costs. Compared to this option, new town development can take place in areas that are agriculturally marginal. In either case, land under non-agricultural use would increase and such additional land will have to come from the land owning agriculturists. In any case what is clear is that conversion of land from agriculture to non-agricultural use will continue to take place, and we need a robust system in place to look at the long-term implications. This is desperately needed since once farm land is converted for urban–industrial use, it is irreversible—the land cannot be reconverted for farming.

Although land acquisition is a state subject, the Government of India enacted the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement (LARR) Act, 2013 which covers fair compensation for land acquisition for SEZs. This legislation was enacted in a background in which almost all political parties stood behind the cause of the farmers. The Act was hailed by many who apparently had farmers' interests as the focus. On the other hand, investors are concerned about the high compensation for land acquisition as per the Act.

In many states, the LARR Act is believed to have compounded problems and has therefore been diluted. Complexity further increases, where there are different rates of compensation for rural and urban areas. This has led to problems of declaring certain land as urban, for instance, statutory and census towns and the urban–rural fringes and outgrowths of towns. Another issue regarding the LARR Act is the long delays in the process of land acquisition which often takes about five years to complete.

Levien (2011) shows how, during the construction of Mahindra World City (an SEZ near Jaipur, Rajasthan), officials tried to include in the stream of benefits to farmers (whose land was purchased), by allotting small parcels of land to them around the periphery of the SEZ. Another strategy to reduce conflicts is to pay compensations at rates higher than those found in the market. The latter strategy was also included as a formal mechanism in the LARR Act by increasing the compensation rates for rural and urban land to up to four times and two times the market value of the land respectively.

Land issues such as the conflict between government acquisition and direct purchase by private parties have halted many urban–industrial projects. It is also clear that direct purchase of land is far less desirable than land acquired by the state that will result in planned development of land for non-agricultural land use.

Land acquisition problems and delays characterize various investment regions in the development corridors, manufacturing hubs on them, investment zones, and SEZs. On the DMIC, the most prominent is Dholera—an old port city which was to be converted into a

smart city. Despite the fact that a single political party has been in government for several years, the process of land acquisition has dragged on for over a decade. In 2011, the Gujarat government transferred 279.23 square kilometres of land to the regional development authority for implementing the first phase of the project. The entire investment region of around 920 square kilometres was divided into six town-planning schemes. In 2015, the government transferred another 11.79 square kilometres of land for the project. But in December 2015, the government's land acquisition was stayed by the Gujarat High Court in response to a petition filed by a local farmers' association. The matter is still in court. Even if the farmers are persuaded to sell a part of their land without wasting more time and money in courts, the land costs of the project would rise significantly. The state government has been able to transfer less than one third of the land required (about 920 square kilometres) to the DMIC. Even if the project is completed in phases as is being planned, developments could occur in bits and pieces.

While land acquisition has run into legal hurdles in Gujarat, the problem is also evident in some of the other manufacturing cities or investment zones planned on the DMIC. In the case of the Dighi Port Industrial Zone in Maharashtra, while the DMICDC had estimated 253 square kilometres of land available for development in the region, less than 10 per cent of the required land has been acquired. According to its financial statements laid before Parliament, even the land parcels which have been acquired are not contiguous and 'project development activities will be initiated only once the contiguous land is made available by the state government'.

For example, the Reliance Haryana SEZ project was approved in 2006 over two districts in Haryana—Gurugram and Jhajjar. According to Sharma (2007), Reliance Ventures Limited (RVL) started purchasing land directly from the owners at a rate of Rs 22 lakhs per acre as against the prevailing market price of Rs 3–4 lakhs. As per the agreement between the Company and the Government of Haryana, about 1400 acres previously acquired by the Haryana State Industrial & Infrastructure Development Corporation (HSIIDC) were to be transferred to Reliance Industries. The most vulnerable—the landless agricultural labourers—were negatively affected. There was no appropriate mechanism in place for resettlement and rehabilitation of project affected people. There was huge resentment and large-scale protests by farmers over transfer of acquired land by the Haryana Government to the Reliance SEZ. These were the farmers whose land was acquired earlier by the HSIIDC at nominal compensation (as against the lucrative prices offered by Reliance Industries through direct purchases). Subsequently, the project was abandoned on acquired land that was allotted to Reliance Industries. Some projects on directly purchased land have come up.

It is possible to stop conversion of agricultural land for non-agricultural purposes through law. This would lead to a situation of land not suitable for agriculture (if it is put to urban land use) fetching a higher market price than productive agricultural land. In a different context I have shown (in the case of the periphery of Bengaluru) that farmers tend to leave a piece of land fallow and subsequently claim such lands as permanent fallow and seek

conversion for non-agricultural purposes (Ramachandran, 1991). One way of addressing this issue is to make farming profitable. The answer lies in increasing farm productivity. In discussing land conversion from rural to urban, agricultural productivity is critical. As per figures of 2012, India had about 1.57 million square kilometres of land that was arable as compared to China which had 1.05 million square kilometres. Around the same time, India produced only 250 million tonnes of food grains as compared to China's production of 571 million tonnes.

7. Corridors: Urban–Industrial Linkages and Disconnects

The corridor policy represents an attempt by the Indian national government to explicitly link economic and industrial development to urbanization (Anand *et.al.*, 2015). However, the city planning authorities were involved in a very limited way in planning for the DMIC, and most of the decisions are taken at the national and state levels without involvement of town planning authorities—with reference to both green field sites and brown field sites. Instead, much of the planning and implementation is being carried out by the industrial and economic development agencies of governments in the centre and states, leading one to believe that urbanization is currently being viewed through the lens of industrialization. Although industrial hubs are by nature urban in character, the planning approach and needs are drastically different and can come into conflict with town planning byelaws. There are a number of large towns on the corridor and in the influence zone. What would be the impact of the corridor on the growth and structure of these towns has not been studied. The town planning authorities continue as though there would be no impact (Sami and Anand, 2017). Master plans of cities are formulated usually for a 20–25 year time frame, and are based on simple population projections based on past trends. Such plans do not take infrastructure projects or potential for industrial growth into account. Moreover, infrastructure projects such as highways, railways, or even industrial parks are planned by different ministries that do not coordinate with the ministry for urban development.

Urban local bodies (ULBs) in existing cities are informed only in a limited way about the project, and the ULBs themselves are not incorporating the DMIC into their future plans. The overall institutional framework for the execution of the project is much more complicated. The DMIC's Project Influence Area covers major portions of six states (some of which are the largest states in the country in terms of both size and population). This fact, combined with the federal nature of India's governance structure implies a large number of stakeholders spanning several regions that the DMICDC is required to engage with. When one puts on an urban lens, there is significant scope for people's participation in planning. People's participation is not expected when economic/industrial corridors, investment zones, industrial hubs, and SEZs are planned. The town planning department at the state level provides inputs to local urban development authorities but is not involved in areas that fall under the jurisdiction of the department of industry.

There is no evidence to show that existing cities are aware of the impact of the DMIC. Structurally the DMICDC is bound closely to nodal agencies—the GIDB and BIP among other state-level agencies. Most of the decision making is at the level of the state government, even though the project will have significant impacts at the local level. Since the existing cities were involved in a limited way in preparing the development blue print of the DMIC, they do not anticipate any immediate direct or indirect impacts within their boundaries. In large cities such as Vadodara and Jodhpur, ULBs are not planning for possible changes in regional employment patterns, migrant flows, land market impacts, and environmental consequences. Vadodara was in the process of preparing its 20-year Master Plan and obtaining its approval from the state government when the DMIC was announced in 2007. Despite the fact that city planning officials were aware of the DMIC and the city's proximity to a proposed industrial area, they had not significantly altered their Master Plan to incorporate potential externalities arising from corridor development and possible enhanced private and public investments. The state governments in the influence area are currently focusing more on the establishment of new nodes that are to be developed as industrial cities, and not on the existing cities which fall within the project influence area. Newer forms of economic settlements like SEZs, industrial townships, and large Special Investment Regions along industrial corridors are emerging as spaces of exception where the usual norms and legislation that apply in most other urban settlements are relaxed to a certain degree (Ong, 2006). This also creates a gap between planning norms used in new forms of human settlements and those in a traditional urban settlement.

The institutional framework for the DMIC does not consider involving existing cities or put in place a framework to plan for the DMIC's impacts on them. Each state has evolved specific mechanisms to implement DMIC projects within its jurisdiction. Gujarat and Rajasthan involve the state nodal agency to coordinate with a variety of governmental and non-governmental actors to execute specific projects. While the coordination mechanism between the Central Government and its agencies, particularly the DMICDC, and the state governments, has been specified in detail in the DMIC policy documents, the third tier of government (i.e., at the local/city level) has largely been ignored.

Existing urban settlements are governed by a number of planning processes, laws, rules, and regulations that may hinder or prohibit certain activities envisioned in the DMIC nodes. For instance, a 1996 Supreme Court ruling directed certain hazardous or polluting factories located in Delhi to cease operations and relocate outside the city, specifically stating that their continuing presence was not in consonance with the Delhi Master Plan. The presence of master plans and zoning laws, ULBs, and most importantly, high population densities may often entail higher costs for industrial development in existing cities. This in turn may make the move away from existing settlements attractive, particularly to regions governed by an authority such as the regional development authority that has relative freedom to formulate its own rules and regulations that can suit

industrial and economic requirements (though the SIR requires some form of adherence to existing town planning laws).

8. Concluding Observations

Based on the foregoing discussion we may flag the following issues that warrant further deliberation:

1. The terminology used in various parts of the world appears to be led primarily by the multilateral development banks that have invested in corridors. Industrial agglomeration is shaped by forward and backward linkages, in the absence of which there is no scope for an agglomeration to develop.
2. Development corridors involve conversion of agricultural land to infrastructure development which in turn increases demand for land for urban–industrial use. The five proposed corridors and approved SEZs would call for a diversion of an estimated 10,000 square kilometres when the proposals fructify. Currently, about 100,000 square kilometres fall under urban areas in India. The extent of land estimated to be converted (through Corridors and industrial hubs) is about 0.64 per cent of the arable land of India. The issue is, how much of this would be fertile agricultural land and how to avoid conversion of such land. Obviously, it is easier to restrict fertile land conversion in green field development rather than in expansion of existing urban–industrial clusters. Land acquisition by the government rather than direct purchase of land from land owners by developers and promoters would help in retaining fertile arable land.
3. In a number of cases, the Supreme Court has highlighted concerns relating to fair compensation, valuation of land, definition of public purpose, and other issues relating to land acquisition. The court has also held that the Constitution permits acquisition by the state of private property only if it is required for a public purpose. In the recent cases of land acquisition, the definition of 'public purpose' is being questioned—is privately developed land for non-agricultural uses for a public purpose?
4. For development to take place, particularly at a time when the agriculture sector is on a decline, land has to be acquired for industrial growth. Under the SEZ Act, the only purpose for which land can be acquired is for the establishment, development, and management of SEZs. While the preamble to the SEZ Act 2005 says that SEZs have been established 'for the promotion of exports', section 5 of the Act says that the Central Government will be guided by the following principles while notifying any area as a SEZ, viz.: '(a) generation of additional economic activity, (b) promotion of exports of goods and services, (c) promotion of investment from domestic and foreign sources, (d) creation of employment opportunities, [and] (e) development of infrastructure facilities.
5. Under the LARR Act, two separate procedures have been provided for acquisition of land for 'public purpose' and for 'companies.' For the former, the process

commences with the publication of a preliminary notification of the Government's intention to acquire a particular land, followed by hearing of objections, publication of declaration that it is needed for a public purpose, acquisition by the Collector, notice to persons interested, ultimately leading to enquiry and award by the Collector. For the purpose of acquisition for companies, there has to be previous consent of the appropriate Government along with an agreement executed by the Company. The question of land acquisition is still an open one, with uncertainty over the nature and structure of future processes.

6. The way forward is to address the issue of land for urban–industrial purposes more pragmatically and in a cost-effective manner that could significantly reduce unemployment levels, while at the same time making it impossible for fertile lands to be gobbled up by urban demands. More scattered spatial small clusters of industrial landscapes could significantly reduce loss of fertile land due to urban–industrial development. Comparison of sizes of SEZs in India and China, for example, is perhaps is misplaced and irrelevant.
7. Once a piece of land has been acquired or purchased, it is almost impossible to return it to the original owners either because the land owners have made use of the compensation amount received for other purposes or the land has been rendered unusable for agriculture as evidenced by the Singur experience.
8. Although city planning is partial, and beset with a number of implementation problems and aberrations, urban–industrial spaces being proposed and planned cannot be divorced from city planning byelaws.

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ISID

Institute for Studies in Industrial Development

4, Institutional Area, Vasant Kunj Phase II, New Delhi - 110 070

Phone: +91 11 2676 4600 / 2689 1111; Fax: +91 11 2612 2448

E-mail: info@isid.org.in; Website: http://isid.org.in