

**“INDIA’S SHENZHEN” – A MIRACLE?
CRITICAL REFLECTIONS ON NEW ECONOMIC GEOGRAPHY, WITH EMPIRICAL
EVIDENCE FROM PERI-URBAN CHENNAI**

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With 3 figures, 4 tables and 3 photos

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Summary: Building on arguments from New Economic Geography the World Bank’s 2009 World Development Report “Reshaping Economic Geography” reconsidered the predominant policy debates on agglomeration processes. The Report argues that on a global scale, production will have to be concentrated in a few mega-urban core regions. Sriperumbudur – “India’s Shenzhen” – a small town in peri-urban Chennai, is highlighted as a successful example. This example is empirically revisited in this paper to reveal the bias of New Economic Geography, as applied in the Report, to neglect questions of inclusive development and access to economic opportunities and ecosystem services. In a first section, the reasoning of the Report is outlined. Second, the actual formation of a new industrial landscape in peri-urban Chennai is presented. In a third section we analyze what is left out by the perspective of the Report: land issues, labour markets and a perspective of access and inclusive development. A fourth part reflects the implications that our evidence has for urbanization research and policies, in general, and for inclusive development, in particular.

Zusammenfassung: Mit Argumenten der New Economic Geography richtete der von der Weltbank 2009 veröffentlichte Weltentwicklungsbericht „Reshaping Economic Geography“ die politische Debatte zur weltweiten Urbanisierung neu aus. Der Bericht argumentiert, dass sich Produktion im globalen Maßstab in wenigen mega-urbanen Zentren konzentrieren sollte. Sriperumbudur – „India’s Shenzhen“ – eine Kleinstadt im peri-urbanen Chennai, wird hierfür als erfolgreiches Beispiel hervorgehoben. Dieses Beispiel wird hier empirisch aufgegriffen, um aufzuzeigen, inwiefern die New Economic Geography Fragen inklusiver Entwicklung und Zugang zu wirtschaftlichen Chancen und ökologischen Ressourcen systematisch vernachlässigt. Ein erster Abschnitt legt hierfür die Argumentation des Reports dar. Ein zweiter untersucht die Herausbildung einer neuen Industrielandschaft im peri-urbanen Chennai. Im dritten Abschnitt wird aufgezeigt, was die Perspektive des Reports auslässt: Landfragen, Arbeitsmärkte und eine Perspektive von Zugang und inklusiver Entwicklung. Ein vierter Abschnitt präsentiert aus unserer Fallstudie hervorgehende Schlussfolgerungen für Forschung und politischen Strategien zur Urbanisierung, insbesondere hinsichtlich inklusiver Entwicklung.

Keywords: New Economic Geography, peri-urban spaces, India, globalization, industrial geography

1 Telling a new story: how the World Bank applied New Economic Geography to reframe development in terms of density, distance and division (“3-D”)

The paper aims to reveal limitations of applying arguments of New Economic Geography to the analysis of agglomeration processes in the Global South. This is illustrated by revisiting the World Bank’s influential 2009 World Development Report “Reshaping Economic Geography” and in particular the example of Sriperumbudur in peri-urban Chennai, referred to as “India’s Shenzhen” in the Indian press. The Report builds on arguments derived from New Economic Geography and PAUL KRUGMAN, who established this new school of eco-

omic thinking (KRUGMAN 1991). Our critical assessment of the 2009 Report highlights the shortcomings of uncritically transposing arguments inherent in New Economic Geography to reframe agglomeration policies and industrial transformation processes in the Global South.

1.1 New Economic Geography – a “new” school of economic thinking

The focus of “New Economic Geography” (NEG) is on economies of agglomeration and urbanization in the context of globalization. New Economic Geography interprets urban agglomerations as the outcome of increasing returns, trade costs and fac-

tor price differences (BEHRENS and ROBERT-NICOUD 2009). It is argued that, in a cumulative way, those economic regions with most production will be more profitable and will therefore attract even more production (STERNBERG 2001, 163). On a global scale, production will thus tend to concentrate in a few core regions, which will become densely populated (in terms of megacities, mega-urban agglomerations) and will eventually generate higher levels of income.

The World Bank applied these arguments to the 2009 World Development Report and drastically re-framed the predominant policy debates on urbanization, territorial development, and regional integration (WORLD BANK 2009, XIII). The Report stresses the positive notion of spatial concentration and argues that rising densities of human settlements (e.g. in terms of megacities), large-scale migration and new transport technologies to reduce distance to market, as well as trade and specialization facilitated by fewer international divisions are central to global economic development. The transformation (“re-shaping”) of the global economy along these lines – density, distance and division – are said to be most noticeable in the countries of the Global North, but dynamic countries in Asia, particularly China and India, are changing in ways similar in scope and speed.

1.2 The World Development Report (2009) at a glance: “Seeing development in 3-D”

Based on this understanding of development the Report formulates a new perspective on agglomeration and economic development. It is argued that spatial transformations in terms of urban agglomerations with high population densities and dynamic economic growth are essential, and that they should be actively encouraged by economic policies. This conclusion stands in sharp contrast to predominant views on global urbanization, particularly on the megacity-type of urban development in the Global South (HEINRICHs et al. 2012; KRAAS 2008) that stress the risks of such developments. Earlier World Bank publications on agglomeration economies have been formulated more cautiously. A policy research report entitled ‘Globalization, growth, and poverty’ notes: “[...] while agglomeration economies are good news for those in the clusters, they are bad news for those left out” (COLLIER and DOLLAR 2002, 27). Slum dwellers now number nearly a billion people globally, but the rush to megacities continues. High poverty persists among the cities’ “bottom billion” (WORLD

BANK 2009, 4), while social and spatial disparities are growing immensely. Concern for this billion has generally come with the prescription that mega-urban growth must be made spatially and socially balanced (UN-HABITAT 2010). The Report has a different message: economic growth is rarely spatially balanced, and efforts to spread it out will jeopardize global economic progress.

The Report essentially argues that some places are doing well because they have promoted transformations along the following three dimensions (“3-D”) of economic geography (part one of the Report):

1. Higher densities, as seen in the growth of cities and production sites;
2. Shorter distances, as workers and business migrate closer to agglomerations;
3. Fewer divisions, as countries thin their economic borders and enter world markets to take advantage of economies of scale and specialization.

This understanding of development and the suggested set of analytical categories to frame development rests on the economic reasoning found in New Economic Geography and its positive notion of economic concentration and open markets. We suggest that this approach has an inherent bias to neglect questions of inclusive development and actual access to economic opportunities and ecosystem services.

1.3 What the World Bank misses to tell

When addressing the Global South, the Report highlights evidence from China and India to elaborate its arguments on new agglomeration policies and economic growth. The huge agglomeration of Shenzhen in Guangdong province/China which has become a “global factory” during the past twenty years is proposed as a showpiece for the highly dynamic economic development path that has characterized China’s growth. Shenzhen is regarded as a model of agglomeration economies for Asia by the Report and, with some hesitation, also for African countries (WORLD BANK 2009, 13). The Report argues that the story of Shenzhen is now being replayed in peri-urban Chennai, in the South Indian State of Tamil Nadu: “In 1990 Sriperumbudur was known mostly as the place where Prime Minister Rajiv Gandhi was assassinated. In 2006 his widow, Sonia Gandhi, watched as Nokia’s telephone plant churned out its 20-millionth handset. The plant had begun production just earlier that year. With neither Shenzhen’s favoured administrative status nor its infrastructure, Sriperumbudur may be on its way

to becoming a national, perhaps even regional, hub for electronic goods. The key is the town's proximity to Chennai, just as Shenzhen's proximity to Hong Kong, China, was instrumental in its growth" (WORLD BANK 2009, 13).

These cases of economic development are indeed impressive but we argue that the criteria of success are somewhat limited and rest on a narrow economic framing of the situation. There is no look at how space, economic activity, access to benefits and social exclusions intersect (RIGG et al. 2009, 132). The Report not only omits the social dimensions of the industrial transformation, but also, in a deliberate way, the environmental context in which it is embedded: "to keep the Report focused, several important aspects of the spatial transformation do not get the attention they would in a fuller study. The main aspects not considered [...] are the **social and environmental effects** of a changing economic geography" (WORLD BANK 2009, 34; emphasis in original). We suggest that these omissions are based on the application of NEG as a too narrow analytical framework. This results in the neglect of factors outside the economic sphere that determine access to economic opportunities and ecosystem services for large parts of the population living in the area undergoing the transformations. This paper therefore revisits one of the success stories cited in the Report. It refers to Sriperumbudur, in the peri-urban fringe of Chennai, to point out in particular three shortcomings of the approach suggested by the World Bank. These three shortcomings include: i) the exclusion of politics and existing institutions that shape the configuration of access to economic opportunities; ii) the neglect of structural conditions and new mechanism of exclusion in particular regarding access to the job market; iii) the omission of environmental issues related to industrial development and agglomeration. They each will be illustrated separately with empirical material in the third section.

For an empirically-based critical assessment, the findings of our field research will be structured as follows. In the second section, we will demonstrate that, in peri-urban Chennai, the story that the Report tells has in fact come true. This is a story about special economic zones and industrial parks, on IT-corridors, on power plants and new ports, on accumulation of wealth, and on glittering "world-class" residential estates in "India's Shenzhen". It is in the third section that we address the shortcomings and tell the stories that the Report does not tell. In conclusion, we will finally address the im-

plications that our evidence has for urbanization research and policies, in general, and for inclusive development, in particular.

2 The story that the Report tells comes true: the formation of a new industrial landscape in peri-urban Chennai, 2000–2012

2.1 New industrial policies accelerate "3-D" development

The Indian Federal State of Tamil Nadu with its capital town of Chennai (formerly Madras) started its own industrial policy nearly fifty years ago. In 1965, the Tamil Nadu Industrial Development Corporation (TIDCO) was created; in 1972, the State Industries Promotion Corporation of Tamil Nadu (SIPCOT) came into being. The industrial development of the state, however, remained rather inefficient and fragmented, primarily because of lack of political will, funding, and segmented governance structures. The interaction between the new corporations and the private industrial sector was inefficient.

It was mainly two new development strategies that started to foster industrial growth in Tamil Nadu. In 2002, as one of the first states in India (with the exemption of Karnataka/Bangalore (DITTRICH 2004; HEITZMAN 2004)), the Tamil Nadu state government released a comprehensive new IT-policy which should serve as an engine of growth in the South. On the basis of a relatively large educated work force and a rather efficient administration, IT-parks were established, promoted by state subsidies and tax exemptions. This policy showed rapid success. A new IT-corridor emerged in the South of Chennai (Fig. 1), with the state further promoting this development by providing infrastructural back-ups such as a light railway that connects the city with the IT-corridor. The major feature of this development strategy was the establishment of "IT-parks" that offer facilities both to established international IT-corporations and to national start-up companies. The most prominent IT-park of peri-urban Chennai is the TIDEL-Park at Taramani/Chennai, with more than 50 Million Euro of investments to create nearly 130,000 m² of business space. On the national level, a breakthrough in industrial policies was achieved in 2006 in terms of a comprehensive new National Special Economic Zones Act. In the State of Tamil Nadu, 65 Special Economic Zones (SEZs) were created and formally approved until 2012, all of them under the umbrella of SIPCOT. Under this policy, spe-

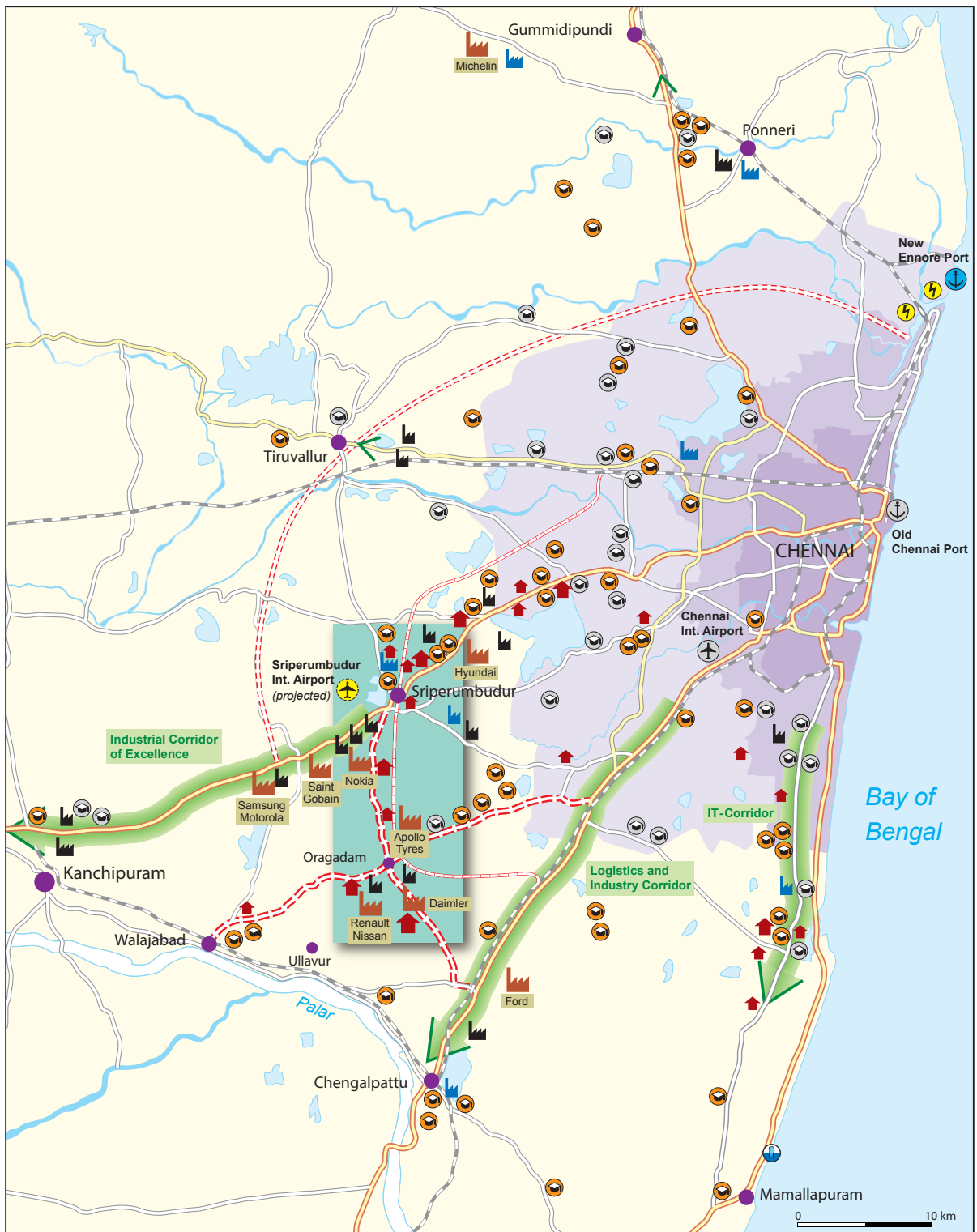
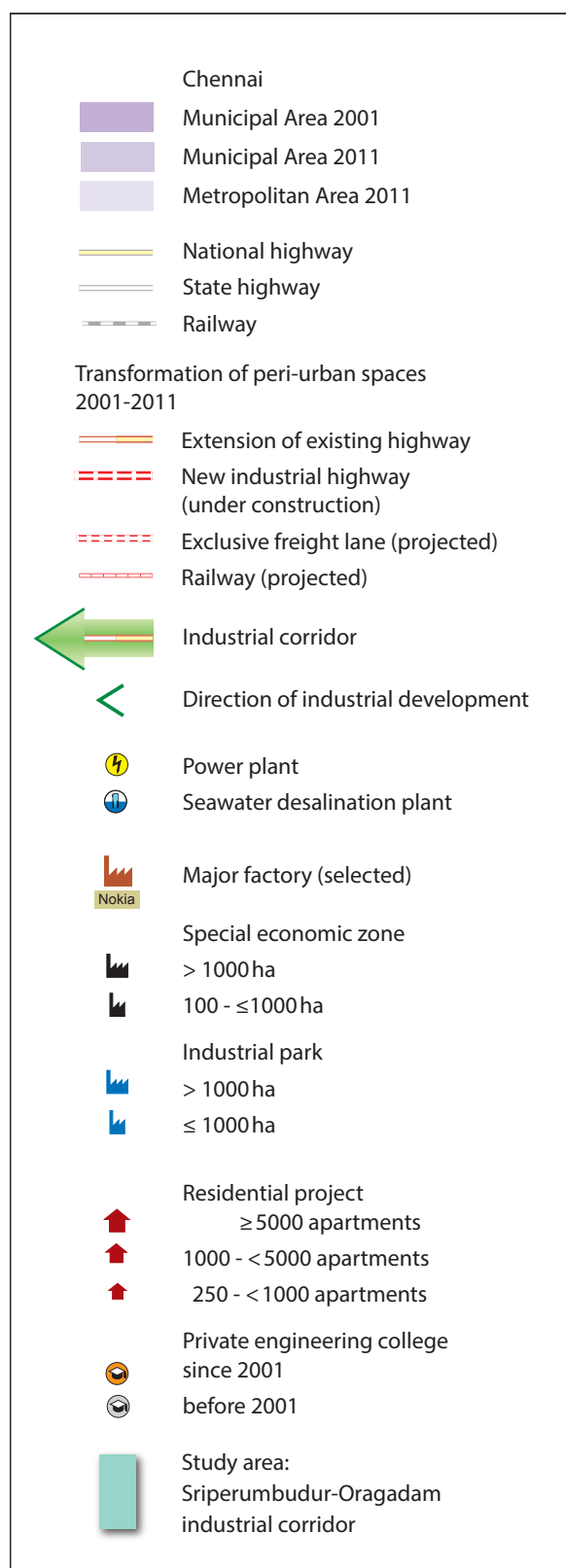


Fig. 1: Peri-urban Chennai: transformation 2001–2011

Draft: SEBASTIAN HOMM, HANS-GEORG BOHLE; cartography: MARTIN GREIF; sources: <https://maps.google.de/>; <http://www.collegesintamilnadu.com/>; http://www.sipcot.com/industrial_complexes.htm; <http://www.sezindiainvest.com/>; <http://www.chennaicorporation.gov.in/>; <http://www.cmdachennai.gov.in/>; Sriperumbudur – City Development Plan (2010); own field research



cial SEZs were defined as “a specifically delineated duty free enclave that shall be deemed to be foreign territory for the purposes of trade operations and duties and tariffs. This policy intends to make SEZs an engine for economic growth supported by quality infrastructure complemented by an attractive fiscal package, both at the Centre and the State level, with the minimum possible regulations” (MINISTRY OF LAW AND JUSTICE 2012). Accordingly, the key objective of this policy was not primarily to earn taxes but to provide job opportunities and to promote overall economic activities. In peri-urban Chennai alone, more than 30 such SEZs emerged until 2012, of which 17 cover an area larger than 100 hectare (see Fig. 1). The second pillar of industrial development was the establishment of Industrial Parks (IPs). Under the umbrella of the Tamil Nadu Small Industries Development Corporation, large ready-built industrial estates were developed to cater for the needs of small-scale industries. In peri-urban Chennai, ten such IPs emerged until 2012. The best known examples are the IPs in Irungattukottai and Sripurumbudur.

In combination, IT-corridors, SEZs, and IPs have stimulated extremely dynamic industrial growth in peri-urban Chennai. Between 2007 and 2010 alone 214,000 new jobs were created (TAMIL NADU INDUSTRIES DEPARTMENT 2010, 1). As figure 1 shows, an entirely new industrial landscape emerged in peri-urban Chennai. In addition to the new institutional setup, the state invested large sums in infrastructural development which, till the present day, has remained the major bottleneck for even more dynamic development. In addition to new highways and railway lines, a new privately operated port was built in Ennore, to facilitate imports of coal and liquid gas for new thermal power plants to cater for the energy needs of the industrial development. The major highways were expanded to four or even six lane express ways, to link the peri-urban spaces to the city, the port, and the international airport.

2.2 Sripurumbudur: “India’s Shenzhen” gets bigger

As mentioned before, the small town of Sripurumbudur (16,156 inhabitants in 2001; 29,710 in 2010) (TUFIDCO 2010) which is located 40 km from the city of Chennai on the Chennai-Bangalore highway has become a symbol of Chennai’s industrial success story. In the industrial corridor between Sripurumbudur and the village of Oragadam (822 in-

habitants in 2001), an extremely dense cluster of industrial plants has emerged (Fig. 1). During the past ten years, in this corridor alone, 23 globally acting firms were established (Tab. 1). Eight of the firms are US-based, six are Indian enterprises, three from Japan, two from Germany, and others from Finland, France, and Canada. To provide an overview on these extremely dynamic developments the authors have gathered information from various sources including government reports and private sector websites (see Fig. 1). All data were carefully reviewed and processed to create a comprehensive thematic map of the transformations reshaping peri-urban Chennai. It shows how industrial development rests on the extension of infrastructure, SEZs and IPs and instigates a surge in private education facilities and residential projects.

Another element that is profoundly transforming the peri-urban landscape are large prestigious residential projects (see Fig. 2) mainly to cater for the needs of the professional work force from India and abroad. Around Oragadam village alone, eight comprehensive residential projects have started (see Tab. 2).

In their appearance (and nomenclature), they stretch from Moroccan-style housings (“ACROPOLE”)

over huge apartment towns (“CRESCENT LAKE HOMES”) and “world-class” gated communities (“TEMPLE GREEN”, see Fig. 2) to entire new townships that will integrate industrial, commercial, residential, cultural, educational and recreational functions (“HIRCO PALACE GARDENS”).

In SIPCOT’s view, the Sriperumbudur-Oragadam corridor “offers all facilities that the international industrial giants want for their business to operate in the country”. Sriperumbudur is in fact on its way to become India’s “New Shenzhen” (Fig. 3), and Oragadam, according to SIPCOT, “will soon become one of the largest automobile hubs in the world”.

Accordingly, the Indian national press has reported enthusiastically on the new production boom in the peri-urban fringe of Chennai. Just like the Report, the press compared the highly dynamic transformation of Chennai’s transitional spaces to China’s Shenzhen (see Fig. 3, “India’s Shenzhen gets bigger”, *Times of India*, 05.09.2009). The press proudly acknowledges that the provincial government of Tamil Nadu has invested enormously to launch its industrial development program, to establish special economic zones, and to attract global investors.

Tab. 1: List of companies at Sriperumbudur-Oragadam industrial corridor

Company	Products	Corporate headquarter
1. Allison	automatic transmission	US
2. Apollo	tires	India
3. Asian Paints	paints	India
4. Axon	electronic music systems	Germany
5. Daimler India	commercial vehicles	Germany
6. Delphi	automotive systems	US
7. GARC	automotive testing	India
8. JCBL	multiaxle trailers	France
9. KUBS	safes and locks	India
10. Komatsu	construction equipment	Japan
11. Mohan Mutha	building materials	India
12. Momentive	chemicals	US
13. Mothersons	automotive elastomers	India
14. Nokia Siemens	telecommunications	Finland
15. Nokia	telecommunications	Finland
16. Praxair	industrial gases	US
17. Proscio-ICPC	chemicals	US
18. Renault-Nissan	automobiles	Japan
19. Samina-SCI	car electronics	US
20. SDP Telecom	wireless telecommunications	Canada
21. Sundaram	hydraulics	US
22. Sundaram	automotive plastics	US
23. Unipres	automotive parts	Japan

Source: SIPCOT, internet research, May 2012



Fig. 2: TEMPLE GREEN layout projection. Source: <http://blogs.placetolive.in/2010/06/arun-excello-temple-green-near-oragadam.html>

From 2004 to 2009 alone, according to *Times of India* (05.09.2009), foreign investments in Sriperumbudur and neighbouring Oragadam summed up to more than 2.8 billion US-\$, just for the eight largest industrial plants in this corridor.

To sum up, all the expectations that the World Bank, in its 2009 Report, had formulated for little Sriperumbudur, have even been surpassed in a spectacular way in reality. It is only when the transformations in peri-urban Chennai are considered with a more comprehensive perspective that the backside of this success becomes evident and the shortcomings of the analytical approach followed in the Report are revealed.

3 The stories behind the story: what the World Bank misses to tell

This section is focused on what the Report excludes, simplifies and misses. Critical issues not addressed are the social and environmental dimensions of "3-D" development and their embedded-

ness in specific political, cultural and historical contexts at the local level. Photo 1 illustrates this intersection of new economic aspirations and local realities.

In order to examine these issues in the peri-urban area of Chennai the authors have undertaken in-depth empirical field work from 2010 to 2012. The assessment was focused on a transect covering the Sriperumbudur-Oragadam industrial corridor as this area is a focal point of industrial development (see Fig. 1) and Sriperumbudur is highlighted in the Report. The methods to assess the transformation were mainly qualitative interviews (semi-structured and narrative), a village survey and newspaper and literature review. Interviews were held with different actor groups involved in particular aspects of the transformation process. Table 3 provides an overview of conducted interviews. In our view, the Report particularly misses to tell three stories that are currently shaping agglomeration development in peri-urban Chennai. One is about the institutional setting. We will put a focus on agrarian transformations that are embedded in pre-colonial and colonial contexts and on emerging land conflicts. A second is on the structural conditions that determine access to job opportunities in the rapidly growing industrial sector. We will concentrate on the newly emerging market for educational facilities. In a third line of argument, we will finally address the ecological effects of the industrial transformation in peri-urban Chennai. Issues of energy, water and food are key. All stories point out the importance to include considerations of access and inclusive development to gain a comprehensive picture of the consequences of the transformation for the people living in the peri-urban spaces of Chennai.

Tab. 2: Residential Projects around Oragadam (under construction)

Company	Name of Project	Type of Project	Number of apartments
South India Shelters	"ACROPOLE"	Moroccan-style housings	<i>not accessible</i>
Rich India Cityscapes	"VILLAGIO"	Row houses, independent villas	<i>not accessible</i>
Tata Housing Dev. Company	"CRESCENT LAKE HOMES"	Large complex of apartment blocks	2,200
Marg Proper Ties	"BRINDAVAN"	Gated community	2,184
Arun Excello	"TEMPLE GREEN"	"world class" gated community	2,600
Hirco	"HIRCO PALACE GARDENS"	Entire 5-sector mixed township with amenities, culture centre	10,000
Inno	"INNO GEOCITY"	New luxury township	4,000
Raga Properties	"RAGA PROPERTIES"	Four large apartment blocks	<i>not accessible</i>

Source: Internet research, June 2012

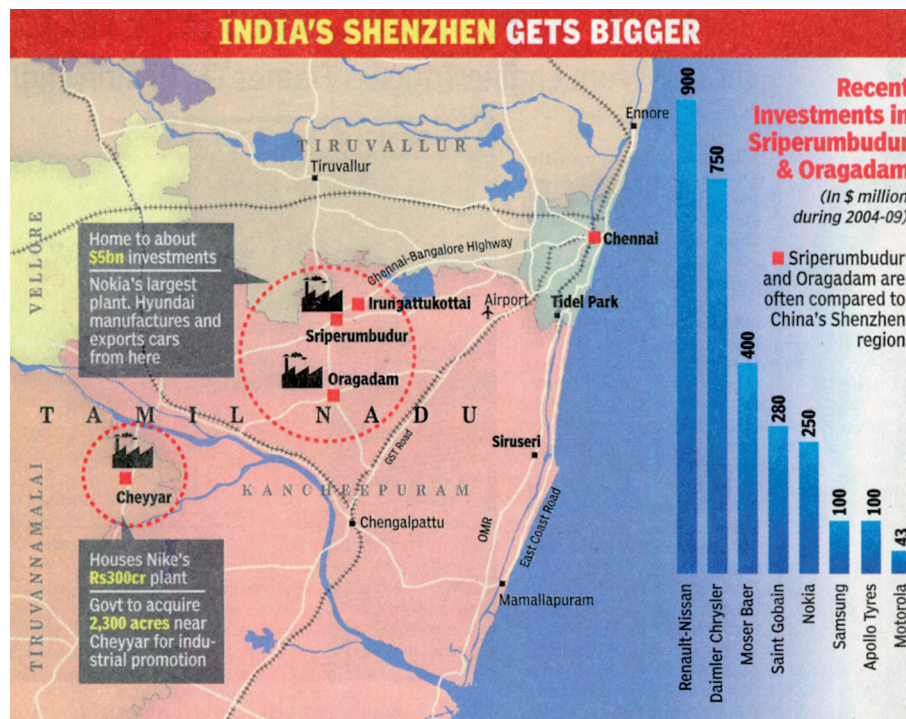


Fig. 3: "India's Shenzhen gets bigger". Source: Times of India, 05.09.2009

3.1 The stories behind the story I: land markets and the selling out of ancient agrarian spaces

This section reflects on the exclusion of politics and institutions that shape the configuration of access to benefits from the emerging land market. As will be illustrated, the current regime of access emerges from a historic background of deeply entrenched institutions.

The peri-urban space of Chennai, particularly its Southern fringe along the Palar river, constitutes an ancient agrarian core region that, in medieval times (10th to 14th centuries) was called "Tondaimandalam" (BOHLE 1986, 30). The land, in that period, was given to dominant castes, particularly to "brahmins" and "naidus". Simultaneously, a landless class of untouchable agricultural labourers ("dalit") became settled in segregation to the dominant, land-owning castes. This historical setting was formally institutionalized by British colonial rule (1700 to 1947), when the dominant castes were given land titles ("pattas") on which they had to pay land taxes, while the untouchables were provided with small parcels of communal land that formally remained government land ("poramboke").

The new industrial transformation of peri-urban Chennai is embedded in this specific historical context. The land owners with formal land titles can now

legally sell their lands; if the state or civil institutions claim their land, they have to be financially compensated. The landless, however, are now regarded as semi-illegal settlers on government lands; they can be expelled without any compensation and at short notice (*Express Buzz*, 18.02.2009). When massive industrial investments were started in the Sriperumbudur-Oragadam corridor in 2000, the land market became extremely dynamic. As the international industrial corporation needed large consolidated stretches of land, a newly emerging group of real estate brokers started to buy the land of entire villages, to then sell it to "land developers". The average land area of a rural village there is about 500 ha. In the village of Oragadam and surroundings, for example, 664.5 ha of land were taken by SIPCOT from local brokers in 2007. The area available for agriculture was reduced to nearly 42 ha till 2011. In the village of Ullavur, about 10 km southwest of Oragadam, agricultural lands declined from about 600 to 320 ha till 2011. Land brokers usually addressed (and bribed) local village elites, for example traditional village headmen or elected members of the village assembly, to "convince" the village communities to sell out their land. A common strategy was to quickly increase the price offers and then spread rumours that prices had started to drop, in order to encourage village people to sell.



Photo 1: Advertisement for apartments and street food seller near Sriperumbudur. (Photo: SEBASTIAN HOMM 2012)

In the village of Ullavur, for example, the original price offered in 2006 was about 500 rupees/cent (about 8 Euro for 40 m²). Then offers were quickly raised to 5000 rupees/cent, and finally between 10-12000 rupees/cent were paid (about 4 Euro/m²) when the land in nearby Oragadam was taken over by SIPCOT. The land brokers made enormous profits out of their commissions. The “dalit” groups usually remained in their old segregated villages, without any access to the land resources that had remained. As many of the landless regarded themselves as the legal traditional occupants of “communal” lands, numerous conflicts and clashes emerged around land issues. The newspaper “The Hindu”, for example, reported on legal challenges to land acquisition in Oragadam (*The Hindu*, 03.05.2011) and many NGOs speak out against SEZs (SPMEI 2008).

The industrial transformation of peri-urban Chennai has created entirely new patterns in village-

level developments. Some former agrarian villages were almost entirely transformed into industrial estates. Oragadam is an example. Other villages catered for the new needs and opportunities in residential development, for example Chettipettu at the dynamic Chennai-Bangalore Highway. Still others have been sold out, and became objects of speculation. In such villages, for example Ullavur, former farmer settlements are becoming ruins, after their inhabitants have sold and left, while remaining landless communities are being seen sitting desperately in front of their houses that fall into disrepair, with no farm work remaining for their livelihoods and entire village areas becoming abandoned (Photo 2). Still other villages have been neither sold nor transformed, but many of them are also disintegrating because of the overall decline in agricultural activities. “Agriculture is going down” became almost a proverb in peri-urban Chennai. The main reason is the sharp rise in the cost of agricultural labour “after the companies came”: in Ullavur, for example, the cost of agricultural labour increased from about 65–75 rupees/day (about 1 Euro) in the 1990s to 200–250 rupees/day (about 3 Euro) in 2012. As the prices for agricultural inputs have also been rising sharply, with market prices for selling products remaining more or less stable agriculture is often no longer remunerative (NARAYANAMOORTHY 2006). Hence, job opportunities in the agricultural sector that might have compensated the landless labourers had declined instead.

These findings show that space and place have been “de-humanized” and, to a large extent de-socialized, by the perspective that the Report takes. As RIGG et al. (2009, 132) argue, space, in the view of the World Development Report, is merely a zone where economic activity occurs, or does not. The focus of the Report is therefore merely on the “mechanics” of spatial transformations, not on their origins nor their social groundings and effects: “There is no concerted attempt to look at how space, economic activity and

Tab. 3: Interviews conducted with different actor groups 2010–2012

Locations	Agric. land owner	Agric. labourer	Industry manager	Industry worker	Polit. admin.	Real estate	Business	NGO experts	Total
Oragad. & Sriperum.	5	11	4	6	5	2	8	4	45
Ullavur	13	6	0	5	3	1	1	0	29
Other peri-urban	10	6	1	2	6	0	2	3	30
Chennai	0	0	2	0	7	2	0	2	13
Total	28	23	7	13	21	5	11	9	117



Photo 2: Abandoned house in Ullavur village (Photo: SEBASTIAN HOMM 2012)

social exclusion intersect; there is little on the politics of space; and there is nothing on environmental issues and how they emerge in spatially contingent ways. We regard these absences as major omissions – paradigmatic blind spots that arise because of the way that certain forms of evidence and approach are privileged over others” (RIGG et al. 2009, 132–133).

3.2 The stories behind the story II: labour markets and the emergence of new forms of access and exclusion

As the job opportunities in the rapidly developing industrial sector require basic educational skills from the side of the labour force, education has become key in determining access to or exclusion from labour markets. International industrial firms have established rules that offer regular “blue-collar” jobs only for those that have finished twelfth standard, and “white-collar” jobs only for graduates of engineering colleges. The twelfth standard rule has definitely provided new job opportunities for “dalit”-communities, because the government of Tamil Nadu had established various regulations for “positive discrimination” of the scheduled castes. Under these regulations, all levels of public and private schools, colleges and universities have to accommodate rather high “quota” of “dalits”, be they students or teachers. Accordingly, a relatively high proportion of untouchable communities have been qualified for the new job opportunities. This is particularly true for young male applicants.

The new regulation for access to the formal industrial labour markets has also resulted in the emergence of a fast growing private market for educational facilities. The past ten years have seen the rapid establishment of new private engineering colleges (see Fig. 1, Tab. 4 and Photo 3).

Private investments in this sector have proved highly profitable, because the students have to pay high (formal) fees and, in addition, have been urged to give large amounts of (informal) „donations“ to the respective colleges when they want to be admitted. Simultaneously, the government of Tamil Nadu has initiated a very competitive market for educational facilities by, for example, ranking the performance of each school, college or university every year and regularly publishing the results in the newspapers. Many farm families in peri-urban Chennai thus try to raise the necessary funds to at least send one of their sons to a high-standard educational facility, preferably to one of the highest ranking engineering colleges. Such investments into “human capital” are considered as excellent investments into the future of the entire family. As employment in the formal industrial sector implies high salaries, job security and a number of benefits (health insurance; old age pensions etc.), even small farmers, if not benefiting from land sales, have tried to borrow enough money to pay for the schooling fees and to raise the necessary “donations”. Access to higher positions remains limited to those who can afford the education required. The limited education prospects of the less well-off families have increasingly become the decisive mechanism to deepen their exclusion from higher earning positions in the emerging industrial economy.

For those with less education a new institutional setting has developed that regulates access to the new dynamic labour market. A particular feature is the emergence of a new class of labour contractors for different needs of the international corporations. These contractors establish nets of informal, mostly horizontal business relations that are well adapted to the rapidly changing demand structure of the labour market (for conceptual considerations see ETZOLD et al. 2009; KECK et al. 2012). Access to jobs is relatively easy but marked by profound insecurity in terms of

Tab. 4: Engineering colleges in peri-urban Chennai

Year of establishment	Funded by government	Funded privately
1940-49	2	0
1950-59	0	1
1960-69	1	0
1970-79	0	0
1980-89	0	7
1990-99	1	32
2000-09	3	74

Source: www.collegesintamilnadu.com

assignment, payment and working conditions. In the construction sector where people are usually hired on a daily or weekly basis, the contractors serve as employers. They assemble the work force, organize and pay for it. They receive bulk payments from the companies from which they take a good share as their commissions. The same is true for the formal industrial sector. For the Hyundai Company in Sriperumbudur, for example, 20 such contractors are operating. They receive rupees 220 per day per labourer from which they hand over between rupees 160-180 to the employees, thus keeping nearly 25% for their own commissions. When seasonal labour is required, job brokers recruit workers from all over India, particularly from the backward states such as Orissa or Bihar. The brokers issue contracts, and they organize accommodations by renting houses, for example in Sriperumbudur, or constructing temporary shelter close to the construction sites, as in Oragadam. Their commissions are usually about 5% of the long-term payments for salaries which the companies give straight to the brokers. That allows the companies to keep the work force cheap and informal, which not only saves tax payments, but, more importantly, saves them the obligation to provide social security to their work force. It is estimated that for every permanent worker ten workers are occupied in temporary contracts (*The Hindu*, 27.05.2012).

Although the caste system has been officially abandoned in India, in practice there is a constant need to accommodate the segregative requirements of the caste system with the daily needs of the labour market. Therefore, an apartheid-type arrangement has developed. In schools and companies, in labour shifts and offices, at bus stops or in cafeterias, different spaces have been allotted to higher versus subordinate castes (CROSS 2010). Nevertheless, the dominant castes feel uncomfortable when low caste people find employment and regular work that allows them to build new homes, occupying new spaces and demonstrate new economic and social aspirations. Higher castes openly demand that their cultural position should be "respected" by the newly better-off.

3.3 The stories behind the story III: water scarcity and the emergence of an energy crisis in peri-urban Chennai

The exclusion of environmental considerations profoundly limits the analytical scope of the approach applied in the Report. This section reflects on some ecological effects of the industrial transformation in



Photo 3: Engineering College near Sriperumbudur (Photo: SEBASTIAN HOMM 2012)

peri-urban Chennai and illustrates how the access to energy and water is reconfigured as the interests of the global players compete with less prominent consumers.

The further depletion of water resources, particularly of groundwater is one of the most severe environmental effects of the industrial boom in peri-urban Chennai. Even before the industrial transformation began and large new residential complexes were built, water had been one of the scarcest resources. Chennai had long been known as the Indian megacity with the most limited supplies of drinking water, rising cases of vector borne diseases (SEYLER et al. 2012) and with the most severe water crises to occur in drought years (ANAND 2001). However, industrial water demand alone is projected to increase by 27% till the year 2050. Thermal power plants will account for the highest proportion of water use (GOI 2005). Vast illegal pumping of ground water, particularly in the southern fringe of Chennai, had already resulted in a sharp decline of the groundwater table in the 1990ies and the intrusion of sea water into the groundwater body close to the coastline (NESTLE et al. 2005). With the additional water demand of both industrial and residential sectors, the Government of Tamil Nadu acknowledges that it has to revise its water policy with a renewed focus on conservation and groundwater regulation (*The Hindu*, 15.02.2012). The message was sent out to the industry that they could no longer rely on the unlimited use of groundwater. Nevertheless, till the present day, the Tamil Nadu Groundwater (Development and Management) Act GWDM, 2003, has not come into force.

Due to astronomical increase in energy demand in the past few years, the state currently has a deficit in power supply of around 11,9% as on February 2009. To meet the ever-increasing demand in the coming years, the Tamil Nadu Electricity Board (TNEB) has

proposed five major new generation projects for the next years to come. The combined installed capacity of the five projects will be 5.400 MW. 3000 MW alone will be generated by two large power plants in the North of Chennai: Ennore Thermal Power Station (ETPS) Annexe (600 MW) and North Chennai TPS Stages 3 (800 MW) and 4 (2 x 800 MW) (*The Hindu*, 14.11.2011), see also Fig. 1.

Coal supply is coming up as a major bottleneck. Domestic coal will be much harder to procure than expected, because the new coal mines are located in politically “troubled” areas of North-East India which witness conflicts between Maoist rebels and the regional governments. Tamil Nadu now considers to import coal from Indonesia, Australia and South Africa (*The Hindu*, 14.11.2011). Talks have started with Indian Oil Corporation to set up a new terminal for liquefied natural gas at Ennore Port (*The Hindu*, 28.02.2012). Nearly one billion Euro will be required for this investment alone. In the meantime, the global industrial players in peri-urban Chennai such as Ford Motor Company, Hyundai Motor Company and Nokia OYJ offensively urge the Government of Tamil Nadu to secure their energy needs (*Bloomberg*, 30.04.2010). In a rather desperate move, the TNEB has recently initiated what they euphemistically call “power holidays” (*The Hindu*, 25.02.2012). For this purpose, the state has been divided into six regions which will not receive electricity for one day per week. Success, however, has so far been very limited (*The Hindu*, 05.03.2012).

Water and energy are contested goods and the rapid development puts further pressure on already strained conditions. As the demands of the industrial consumers are given priority, access for poorer consumers is neglected. The “power holidays” for example are especially detrimental to the many farmers who rely on electricity for irrigating their fields. In combination with the massive conversion of agricultural land many respondents have stressed the detrimental effect of the industrial development for their food security.

4 Looking for alternative storylines: webs of access and the politics of inclusion

Our case study has shown that the exclusion of society and environment from the analysis of the industrial transformation process neglects the embeddedness of local-level transformation processes into livelihood systems and what consequences these have for people and places. In particular, the social and political origins and consequences for a more inclusive

development are missing: “[...] how can it be consistent for the flagship report of the World Bank, which has on its strap line ‘war for a world free of poverty’ to produce a product of 380 pages that largely ignores the political origins and social consequences of the processes and politics that it promotes?” (RIGG et al. 2009, 132).

The Report thus removes any notion of justice as a legitimate criterion for making policy choices. In particular, the limits of access to the benefits of the transformation process and the mechanisms that exclude large populations from that access are neglected. Any analysis of “reshaping economic geography” in peri-urban spaces that is guided by empirically-grounded work should therefore address issues of access and the mechanisms of exclusion/inclusion as suggested above. Two innovative approaches seem particularly relevant to conceptually inform such an analysis.

4.1 A theory of access

The first approach is the “theory of access” as suggested by RIBOT and PELUSO (2003). Access is defined here as the ability to derive benefits from things. The authors suggest a method of access analysis for identifying the constellations of the means, relations and processes that enable various actors to derive benefits from resources (ibid. 153). The analysis of “positionality” is key, because people and institutions are positioned differently in relation to resources at various historical moments and geographical scales. According to the authors, access analysis involves three steps (ibid. 161): firstly, identifying and mapping the flow of the particular benefit; secondly, looking for the mechanisms by which different actors gain, control, maintain or use the benefit flow and its distribution; and thirdly, analysing power relations underlying the mechanisms of access.

RIBOT and PELUSO (2003) have developed the notion of “webs of access relations” (ibid. 173). Each form of access may enable, conflict with, or complement other access mechanisms and result in complex social patterns of benefit distribution. Where and how these analytical categories (technology, capital, markets, knowledge, authority, identities, social relations, ibid. 161) fit together depends on the web of access relations in which each is embedded: “In using a model such as ours to guide empirically grounded analysis, it is important to concurrently examine the larger contexts of such political and economic relations. Policies, markets, technologies, knowledge and even identities, constitute and are constituted by these broader so-

cial forces Access analysis can be focussed on the policy environments that enable and disable different actors to gain, maintain, or control resource access or the micro-dynamics of who benefits from resources and how" (ibid. 173).

4.2 Politics of inclusion

The second approach is the politics of inclusion. Inclusive development has been defined as the process of ensuring that all marginalized/excluded groups are included in the development process (STUBBS 2009). According to the India Human Development Report (GOI 2011), development can be inclusive – and reduce poverty – only if all groups of people contribute to creating opportunities, share the benefits of development and participate in decision-making.

ANDERSON and SHIM (2004) have elaborated the notion of the politics of inclusion as follows: "Globalization poses challenges for political and social theory as well as problems for modern welfare state and democracy in that it demands the development of a new politics of redistribution and recognition [...]. The politics of inclusion – as we understand it – is the productive/innovative linkage of the politics of redistribution and the politics of recognition, which over a larger time span creates sustainable paths to economic and social development increasing the capacity to handle conflict arising from economic resources and life chances as well as conflicts about identities. The politics of empowerment concerns the agency and mobilization dimensions of social and political change" (ANDERSEN and SHIM 2004, 1).

5 Conclusion

Our case study strongly suggests that the effects of globalization cannot be adequately captured with an analytical framework that neglects aspects relating to access and inclusion. The shortcomings of such an approach are highlighted in our critic of the 2009 World Development Report. Based on New Economic Geography the Report promotes an approach that results in serious omissions and analytical limitations. The analysis of industrial transformation and agglomeration processes should instead also include access theory and the politics of inclusion to gain a more comprehensive understanding. By doing so, issues of recognition and equality, of justice and participation that are so badly neglected by the Report can be put into the centre of attention.

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