The Future of the Countryside

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1 ABSTRACT

The main assumption of Expanding Cities – Diminishing Space, is that, while, Cities are growing, agricultural land, but also natural retreats and buffer zones, are diminishing if not totally disappearing (Vacant Countryside). In what follows, I propose to challenge this central assumption. This assumption amounts to the idea that the urban condition is ubiquitous, it encloses everything; urbanization is planetary urbanization. Planetary urbanization absorbs the rural, disintegrates the hinterland and makes nature disappear; it is the urban without an outside. I will challenge this central proposition by looking briefly at India's policy of urbanization through development corridors and smart cities. Thus, the history of for instance, modern India is clear: industrialise, or perish. The government says agriculture has not done enough to generate employment and has pushed industry as a more lucrative alternative. means cities without country-side, without the nonurban (everything that is not the city). This generates a collision between the urbanizing imperative and the conditions of rurality (agrarian environments and the subjects that inhabit them). planetary urbanization tends to do without. Thus. Alternative models are needed.

Keywords: experimentation, strategic thinking, smart cities, countryside, future

2 INTRODUCTION

The main assumption of Expanding Cities – Diminishing Space, is that, while, Cities are growing, agricultural land, but also natural retreats and buffer zones, are diminishing if not totally disappearing (Vacant Countryside). In what follows, I propose to challenge this central assumption. This assumption amounts to the idea that the urban condition is ubiquitous, it encloses everything; urbanization is planetary urbanization. Planetary urbanization absorbs the rural, disintegrates the hinterland and makes nature disappear; it is the urban without an outside. I will challenge this central proposition by looking briefly at India's policy of urbanization through development corridors and smart cities. Thus, the history of modern India is clear: industrialise, or perish. The government says agriculture has not done enough to generate employment and has pushed industry as a more lucrative alternative. That means cities without country-side.

More than half of the world's population will soon be living in urban agglomerations. If over half the global population lives in urban agglomerations, it might also mean that almost half lives elsewhere, in something called the countryside, the "nonurban" (every-thing that is not the city). The countryside is changing drastically. Meanwhile, metropolitan centres are becoming ruralized (cities grow smaller and more rural, as one-way streets become children's play zones). Major companies build their corporate centres outside of the city, with views of bays and nature reserves; headquarters visually blend in with nature; gigantic buildings with artificial landscapes. Rather than the countryside disappearing what we see are cultural landscapes and villages that are losing much of their original population while drastically expanding to accommodate new urban residents and tourists who built houses they inhabit temporarily. The village and the landscape are simultaneously growing and shrinking. Agriculture might migrate elsewhere as result of global warming and climate change impacts, while farming communities might have become increasingly isolated by hundreds of shrinking cities around the developed world.

These shrinking cities need to find new purposes. Else-where, agricultural cultural landscapes, frontiers and borders might be turned into smart cities' back of house and server farms, where city corporate data is stored and evaluated. Gargantuan distribution and logistics centres and server farms are built outside of the city limits, lying around the countryside like fallen high-rises. Thus, in order to feed, maintain and entertain ever-growing smart or otherwise cities, the countryside is becoming a colossal back-of-house. Satellite information might have a direct impact on agriculture. Satellite knowledge of every square inch of the earth will be transmitted to the laptop of the farmer. From the laptop, the farmer feeds the data to a robotised tractor. Refugees might be channelled in developed cities to revive moribund, abandoned regions. Thus, what we may observe are changes to rural environments everywhere. Rural landscapes are being altered by technology, migration and climate change.

The countryside is not any-more a kind of pre-modern relaxation zone for big-city dwellers. We cannot ignore the country-side, as it and its landscapes have been completely involved in modernisation, on a global scale. How the world's rural landscapes are being altered by (smart) technology, migration and climate change? How do we redefine the rural in a globalised urban world? In developing countries, the rural looks like dense slums; factories intersect fields and farmers might farm less, while in developed countries the rural has become a landscape of production and consumption, a leisure landscape for tourism, retirement, second homes or recreation. This contrast reveals the rural to be an emerging condition that requires as much smart-innovation, strategic thinking and design experimentation as the city.

3   THE PROCESS OF ACCELERATED GLOBAL URBANIZATION- THE RISE OF THE CITY

Rapid urbanization is a global phenomenon. In 2008, for the first time in human history, there were more urban dwellers than rural, and the trends show that this is not going to be reversed. The United Nations estimates that by 2030, over 60% of the global population of will be living in "megacities" (10+ million), large (5-10 million), medium (1-5 million), and smaller cities and peri-urban communities, increasingly concentrated in Asia, Africa, and Latin America. This fraction could rise to two thirds by 2050.[1] The recent Intergovernmental Panel on Climate Change (IPCC) report[2] on Human Settlements, Infrastructure and Spatial planning states that the expansion of urban areas (urban centers and suburbs) is on average twice as fast as the urban population growth, and that the anticipated growth in the first three decades of the 21st Century will be larger than the cumulative urban expansion in all of human history. The urban condition is ubiquous, it encloses everything, urbanization is planetary urbanization; it is the urban without an outside. Planetary urbanization absorbs the rural, disintegrates of the hinterland" and makes nature disappear.[3] The countriside is operationalized as the "back-end" or the "back-of-house" of global supply chains and logistics infrastructure. The ecological outcome of rapid urban growth is the destruction of such natural systems and resources as wetlands, forests, lakes, glaciers, and the atmosphere.

With this rapid planetary urbanization comes the increased demand for resources such as energy, water, and sanitation along with services such as education and health care. The accelerating growth of cities and their disproportionate consumption of physical and social resources are unsustainable, as are the traditional systems cities rely upon to deliver resources.

4   SMART CITIES

This above emphasizes the necessity to use the resources efficiently or in 'smart' ways and the need to develop 'smart' cities to meet the needs of city residents. Responding to these needs, there are currently hundreds of smart city projects worldwide in both developed and developing countries. Examples abound, such as Amsterdam, Barcelona, Beijing, Cafeidian, Kashiwa-noha, Konza, Lavasa, Masdar, San Francisco, Santander, Sant Cugat, Shanghai, Shenyang, Singapore (Smart Nation), Songdo, Tianjin, Wuxi and the 100 smart cities initiative recently launched by the Government of India. A smart city can contribute towards improved governance and efficient management of infrastructure such as water, energy, transportation and housing and to a higher quality of life

Smart Cities use information and communication technology (ICT) to engage citizens, to deliver city services, and to enhance urban systems. A smart city is designed to optimize residents' quality of life by leveraging technology and integrating several essential functions like managing citizens' data, intelligent transportation, public safety and security among others. Primarily, smart city deployments come with multiple features and state-of-the-art technologies (ICT implementations) and comprise of diverse ecosystems of technology providers. Various devices like sensors, gateways, communication infrastructure

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[1] UN (2014) World Urbanization Prospects, 2014 available at: http://esa.un.org/unpd/wup/highlights/wup2014-highlights.pdf

[2] https://www.ipcc.ch/pdf/assessment-report/ar5/wg3/ipcc_wg3_ar5_chapter12.pdf

[3] Neil Brenner, "Theses on Urbanization," Public Culture, vol. 25, no. 1 (2013): 85–114, link; Neil Brenner and Christian Schmid, "Planetary Urbanisation," in Urban Constellations, ed. Matthew Gandy (Berlin: Jovis, 2011), 10–14; Brenner and Schmid, "The Urban Age in Question," International Journal of Urban and Regional Research, vol. 38, no. 3 (2014): 731–755; Brenner and Schmid, "Towards a New Epistemology of the Urban?," City, vol. 19, no. 1 (2015): 151–182

and servers will collectively bring to life the concept of Internet of Things, what is said to be a critical component in shaping the cities of the future.

5 THE CASE OF INDIA'S SMART CITIES

The current global urbanisation rate of 50% as in 2015 is expected to rise to about 70% by 2050; however, the process is slower in India, being at 31.3% nationally[4], and expected to rise to approximately 52% by 2050. Thus, the urban growth rate in India has been steep in the past couple of decades. The steady increase in the number of million-plus urban areas bear witness to this event. The number of cities with a population of 1 million or more went up from 35 to 53 between 2001 and 2011.[5] During the same time, the number of towns with a population of more than 100,000 rose from 393 to 465.[6] The United Nations has predicted that between 2014 and 2050, India will add another 404 million people to its urban population and will have the highest rate of urbanization among all nations.[7]

Such rapid urbanization will put tremendous pressure on existing city services such as water, sanitation, sewage, schools, health, and transportation. To accelerate the response to this growing urbanization challenge, and to make Indian cities truly global, in 2015 the Government of India launched the Smart Cities Mission program, which aims to transform a hundred small and medium–sized settlements into smart cities.

While smart cities in the west rely on the mining and analysis of big data to create urban networks, Indian smart cities aim to provide basic urban services: water, sanitation, electricity, housing and so on. The provision of e-governance, fibre-optic cables and superfast broadband is a key part of this plan. The ultimate goal is to develop 100 smart cities by 2022. It aims to develop cities that provide essential infrastructure, a decent standard of living for its citizens, and a clean and sustainable environment through the application of smart solutions.[8]

A smart city development push at this scale from a central government is one of its kind. The central government will invest $7.5 billion over five years—an average of $16 million per city per year.[9] The state governments will match the central funds for the cities identified for participation through a competitive selection process. At the city level, the initiatives will be implemented through a newly formed Special Purpose Vehicle, incorporated as a public company. The SPV will be headed by a CEO and supported by an external project management consultant to drive the projects.[10]

After the program launch in 2015, the Government of India held the India Smart Cities Challenge inviting participation from cities across India. The focus of the challenge was on selecting at least one potential city from each state, while the total number of cities selected from a state depended on the state population. Bloomberg Philanthropies collaborated with the ministry spearheading the mission, the Ministry of Housing and Urban Affairs (MHUA), to support, design, and deliver the challenge. A competitive framework was used by the Government of India, to advance a major urban development mission and allocate funding.[11] From the first round of the challenge, 20 cities were shortlisted, also called as "lighthouse cities", for the first phase of the Smart Cities Mission.[12] To date, 90 of the 100 cities have been selected through multiple rounds of the India Smart Cities Challenge.[13]

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[4] GoI-MHA. http://www.censusindia.gov.in. 2011.

[5] Ministry of Housing and Urban Affairs, "Number of cities towns by city size class," http://moud.gov.in/cms/number-of-cities–towns-by-city-size-class.php

[6] Ministry of Housing and Urban Affairs, "Number of cities towns by city size class," http://moud.gov.in/cms/number-of-cities–towns-by-city-size-class.php

[7] United Nations, "World Urbanization Prospects: The 2014 Revision," 2015, https://esa.un.org/unpd/wup/Publications/Files/WUP2014-Report.pdf.

[8] India.gov, "Smart Cities Mission," https://india.gov.in/spotlight/smart-cities-mission-step-towards-smart-india

[9] India.gov, "Smart Cities Mission," https://india.gov.in/spotlight/smart-cities-mission-step-towards-smart-india

[10] Ministry of Housing and Urban Affairs, "Smart Cities," http://moud.gov.in/cms/smart-cities.php

[11] Bloomberg Philanthropies, "India Smart Cities Mission,' https://www.bloomberg.org/program/government-innovation/india-smart-cities-mission/

[12] C, "20 cities make the cut for smart cities phase 1," Maps of India, January 29, 2016, https://www.mapsofindia.com/my-india/government/20-cities-make-the-cut-for-smart-city-project-in-phase-1

[13] Pretika Khanna, "Smart cities mission: 30 new cities selected in third round," Live Mint, June 24, 2017, http://www.livemint.com/Politics/JQvXByK7n5ZDDXGRLuwn3L/Smart-Cities-Mission-30-new-cities-selected-in-third-round.html

While there is no universal definition for a smart city, the Mission seeks to develop cities through application of information and communications technology (ICT) for efficient management of basic urban services such as water supply, sanitation, housing, waste management, and urban mobility. Its two components include pan-city development, whereby a particular ICT solution is applied to one or more aspects of city-wide infrastructure, and area-based development, which looks at investment in infrastructure creation in a smaller area.

The Mission is operated as a centrally sponsored scheme and the central government will be extending financial support to the Mission to the extent of Rs 48,000 crore over five years (2015-2020), i.e., on an average Rs 100 crore per city per year. An equal amount, on a matching basis, will have to be contributed by the state or urban local body

Until now, 99 cities have qualified to receive central funding. The latest addition to the list was made in January this year when nine cities were added in the fourth round of the selection. These were: Silvassa (Dadra and Nagar Haveli), Erode (Tamil Nadu), Diu (Daman & Diu), Bihar Sharif (Bihar), Bareilly (Uttar Pradesh), Itanagar (Arunachal Pradesh), Moradabad (Uttar Pradesh), Saharanpur (Uttar Pradesh) and Kavaratti (Lakshwadeep). Shillong is the 100th proposed city, but it has been given more time to submit its proposal since it failed to submit it in time. The selected cities have received an investment of Rs 12,824 crore (on 409 projects). Of this, Rs 10,639 crore would be on area-based development and Rs 2,185 crore in pan-city initiatives that would impact 35 lakh persons living in these areas.

6 HOW HAS THE MISSION EVOLVED, WHAT IT HAS ACHIEVED, AND HAS IT KEPT THE PROMISE IT HOLDS FOR THE FUTURE OF URBAN DEVELOPMENT IN INDIA?

The Smart Cities Mission finds itself at a crossroads today. The governance structure, financing, participant cities, and smart city projects are all in place. Yet, the progress on smart cities has been slow.[14] Thus, in the case of the development of the 20 "lighthouse" smart cities (those above that were selected in the first round in January 2016), only 83 of 964 projects (8.6 per cent of the projects) were completed up to 2017. Projects worth Rs 46,800 crore were planned under this phase with a major chunk being devoted to infrastructure (626 projects worth Rs 26,714 crore). Only 5.2 per cent of total identified projects in 90 smart cities have been completed (this is before the announcement of the nine new smart cities).[15] 148 projects worth Rs 1,872 crore have been completed. Work on another 407, accounting for about 14 per cent of the total investment envisaged under the Mission, has started. Some 72 per cent of the identified projects are still at the preparation stage of the detailed project report.

7 THE IMPLEMENTATION CHALLENGES THE MISSION IS FACING

The Mission is facing several implementation challenges. Some of these challenges might relate to the bureaucratic processes of investment and approvals for smart city contracts; a lack of sustained financing, lack of centre-state coordination, inefficiency of administration, and the absence of a master plan for the cities. Looking at the official version on the progress, the reason for such a small number of projects being completed thus far is the long gestation periods for large projects, especially infrastructure and retrofitting ones.

The mission seems to have been grounded in a strong separation between the town and the village, the city and the country-side. Thus, the history of modern India is clear: industrialise, or perish. The government says agriculture has not done enough to generate employment and has pushed industry as a more lucrative alternative. That means cities, no country-side. That is, it means, expanding the areas of land under the control of cities (include them into urban development authorities) and swallow up the villages.

Yet, in India, this strong separation between the categories of "town" and "village", are categories of formal governmental administration that are distinct from, and often inconsistent with, the socio-spatial and morphological features that characterize the urban.[16] An interesting case in point: in India's cities vehicles

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[14] https://economictimes.indiatimes.com/news/politics-and-nation/surat-tops-ranking-of-smart-cities-with-largest-number-of-projects-completed/articleshow/62548416.cms

[15] https://timesofindia.indiatimes.com/india/2-5-years-into-smart-city-plan-only-5-of-projects-finished/articleshow/62436408.cms

[16] Ananya Roy, "What Is Urban about Critical Urban Theory?," Urban Geography, vol. 37, no. 6 (2015): 810–823

drive in the direction contrary to the flow of traffic. This practice which is widely accepted even by the traffic police, might have originated in agricultural environments.[17] Thus, the rural, does not simply constitute the "not-urban" but is a "constitutive outside" of the urban. In India, the categories of "town" and "village" are highly unstable, continually reshaped by governmental practices.

I believe an important force that is being left out of consideration here is that undoubtedly, India lives in its villages; and, much of the nation is still dependent on agriculture as a primary means of livelihood.[18] This is not to deny that rapid global urbanisation is a significant factor to contend with, not just in India, but worldwide; but, to recognize that the rate of urbanisation however, varies by state and country. It would be appropriate to suggest that the process of urbanisation in India is mostly because of lesser options in the countryside to make a suitable living, than of a choice of a better life in the city. Let us look at this briefly.

8 THE CURRENT PATTERN OF URBANIZATION AND URBAN DEVELOPMENT IN INDIA'S CITIES AND TOWNS

The current pattern that one finds almost everywhere is as follows: as one moves out from the crowded old neighbourhoods of Indian inner walled historic cities (e.g., Ahmedabad, Udaipur, etc), the roads broaden, buildings rise taller and vehicles (2-3-4 wheelers), line the streets. Thus, new wealthy, modern neighbourhoods begin to engulf the countryside, and the fields of wheat and corn begin to go. Thus, the countryside is disappearing.

People who live in villages on the city's fringes today fear that the same process of urbanization will happen to them. Modern neighbourhoods will submerge their countryside and their fields of wheat and corn will disappear.

 Planetary urbanization is a reality that runs parallel to de-peasantization and de-ruralization.[19] The process of deruralization tends to constrict rural space via depopulation, an expansion of enclosed suburbias and exurbias, smart cities, and the increasing encroachment of industrial, agro-commercial, information and service economies into what was formerly rural space.

Yet, villagers, living in villages surrounding the cities, are resisting their state government's efforts to hyper-urbanize. They seem to be wanting to resist this process and pattern of urbanization: they are happy with their agriculture and do not want a large city smart or otherwise, in place of their farms and homes. They want to be left alone with their land and rural landscapes. This is what this people wishes and aspires to. And farmers get together to protest and protect their lands. Thus, the fast urbanization and industrialization policy of the Government (National and state government), and the expansion of the areas of land under the control of cities, seems to be doing so against the wishes of its people.

Yet villages keep protesting against their inclusion into urban development authorities. Some villages have managed to get themselves removed from the Urban Development Authorities; but other villagers continue to protest to little avail.

In some cases, state and national government propose to develop 40% of villages' land, paving roads and building hospitals, schools and housing colonies. In turn, this-from the government points of view-, will lead the remaining 60% to appreciate in value. And that is supposed to compensate for the 40% the villagers will initially give up. Yet, farmers in these villages around cities are not thrilled to give up nearly half of their land for the mere promise of a better future. More importantly, villagers don't think this is a better future.

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[17] As such, the category of the rural has attendant to it a set of qualitative values that might recede and almost disappear but never cease to exist. In other words, even though the category of the rural might become weak to the point of perceptual invisibility, its symbolic and cultural constructions persist.

[18] In addition, the advent of the 20th century has also brought with it a major population increase in India. India is set to overtake China as the most populous nation by around 2028. The foremost factors contributing to the increased population over the last century can be traced to better biological immunisation, enhanced living conditions, improved nutrition, adequate health policies, modernised medical care, and such

[19] Farshad Araghi, "The Invisible Hand and the Visible Foot: Peasants, Dispossession, and Globalization," in Peasants and Globalization: Political economy, Rural Transformation, and the Agrarian Question, eds. A. Haroon Akram-Lodhi and Cristóbal Kay (London and New York: Routledge, 2009), 112. See also Araghi, "The Great Global Enclosure of Our Times: Peasants and the Agrarian Question at the End of the Twentieth Century," in Hungry for Profit: The Agribusiness Threat to Farmers, Food, and the Environment, eds. Frederick H. Buttel, Fred Magdoff, and John Bellamy Foster (New York: Monthly Review Press, 2000)

Farmers meet to strategize ways to oppose cities' expansion because, they feel that large-scale urbanisation will rob them of both, land[20] and water[21]. Young people from the villages, in particular question the quality of urban employment. They do not seem to have the skills needed to work in an urban setting. They consider that ending up being daily wage workers in cities, will hit their dignity the most. Such forms of underemployment are considered as a natural consequence of rapid urbanisation. It is argued that industries and urban centres need disposable low-wage workers, and those displaced from their villages provide for just that.

Figures from the 2011 census suggest a massive rural-urban migration from villages to cities. The government argues that people are flocking to cities from villages because they want a comfortable life. Cities have better schools, better hospitals, roads, connectivity, therefore, people prefer to move to cities, the government often argues. Yet, villagers who had incorporated their land into Urban Development Authorities few years back, have not seen any fancy roads and sprawling houses in their nearby cities. Instead, cities are expanding at a rapid rate and in an unplanned fashion, with open drains and mud roads, electrical outages/power-cuts, crowded, delayed or dysfunctional public transportation, air pollution, insufficient water supply, non-existent drainage, the mosquito menace or the resulting in health problems, with water and housing supply proving particularly problematic. In India, the growth of cities has been quite haphazard, and for the most part without the required intervention from the planning authorities.

Thus, villagers have renewed their fight to be removed from their lands. People from villages seem to be turning against urbanisation.[22] The government maybe prohibiting its citizens from leading better lives in villages, instead forcing them into cities where the quality of life is lower. Villagers are on the one hand, questioning the wisdom of steering people into cities, and on the other, bringing dysfunctional cities to their countryside and agricultural landscapes. Alternatives are badly needed. Let us look at this briefly

9 URBAN DEVELOPMENT IN INDIA

In India, the growth of cities has been quite haphazard, and for the most part without the required intervention from the planning authorities. India's growth of its urban areas is relatively recent; it can be argued that cities historically date back to the time of the Indus valley civilisation (3300-1300 BCE), such as it is the case with the development of Fatehpur-Sikri (1567), or Jaipur (1727), and Udaipur (1559). However, it is changes in the last 100 years, and since gaining independence, that urban growth has occurred mostly; since then many of the cities have taken on a relatively organic pattern of growth, rather than of being planned.[23] For the most part, cities of India have been unplanned, frequently organic, and maybe to a certain extent also dependent on the urges of public servants. A partial accomplishment is that they have been able to accommodate infrastructure for the growing need for transportation, a minimal electrical supply, water and tele-communications, however haphazard or rudimentary. Such combination of factors has led to cities being developing not just without any lasting vision, but more dependent on a bureaucrat-builder life or on the market mechanism. While it might have been expected that most development authorities were meant to spearhead the growth of cities by laying out the basic infrastructure before growth happened, such planned development has happened only sporadically, leaving most of the development to the 'market' to determine. Thus, this has also involved not just unplanned growth, but such without the required infrastructure of roads, power, water or drainage. Much of this seems to have been left for the owners to figure out on their own, or for the municipality or corporation authorities to fix, whenever they finally got to it. Thus, most urban

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[20] For villagers losing nearly half their land (the 40% above), would split up large holdings, posing a risk to their agricultural industry. They consider that farming small tracts of lands is a disaster. Crops will not grow well on smaller tracts, and they cannot sustain themselves with that.

[21] Agricultural land is often irrigated by rivers. Reducing this supply of river water for agricultural irrigation. will force farmers to rely heavily on groundwater. Yet rapid urbanization means pouring concrete everywhere, which entails means that there will not be any groundwater left

[22] https://www.hindustantimes.com/india-news/gujarat-election-results-rural-urban-divide-behind-bjp-s-big-saurashtra-setback/story-6oPxPm2hlZSAk1kUn4ZyZI.html

[23] the partial exceptions are a few like Lutyen's Delhi (1911-1931), Koenigsberger's Bhubaneswar-Cuttack (1946), Le Corbusier's Chandigarh (1947-60), more recently Correa's involvement with CIDCO's Navi Mumbai (1971). Some measure of city planning also happened in the development of the steel-towns like Jamshedpur (1919), Rourkela (1959), and Bokaro (1964); similar planning and development has been part of the growth of Bidhannagar-Salt Lake City, Kolkata (1958-65)

development in India has been the result of post-hoc coping with the realities of already built-up space, or even of jugaad.[24] This also might have resulted in the inability of the municipal authorities being unable to get ahead of the growth curve. Thus, a major driving force of expansion seems to have been economics, particularly real estate prices, the control of development only being dictated by some minimal amount of floor area ratios (FAR), or elementary building byelaws, which acted as a restraining force. As result the realities of urban daily life of the common wo/man in India is plagued by electrical outages/power-cuts, crowded, delayed or dysfunctional public transportation, air pollution, insufficient water supply, non-existent drainage, the mosquito menace or the resulting health problems. The smart cities mission is expected to change all this. Let us look at this briefly

10 FROM SMALL VILLAGE TO SMART CITY AND ENTREPRENEURIAL URBANIZATION

Yet, in some cases, the smart cities mission might be promoting rapid regional urbanisation by transforming land which belongs formally or informally to farmers and tribes people (the commons), who have used it for generations, into real estate. As part of the urban and industrial development in the country, the Indian government launched the Golden Quadrilateral highway project linking the four major metros of Delhi/NCR, Bombay/Mumbai, Calcutta/Kolkata and Madras/Chennai. As an extension to this, the Delhi-Mumbai Industrial Corridor (DMIC) was proposed as a mega infrastructure project, covering a 1,483 km. long and 300 km. wide corridor between Delhi and Mumbai.[25] When (and if) completed, (DMIC) will be the largest and most expensive infrastructure project ever undertaken in the Indian subcontinent. Stretching between Delhi and Mumbai, the DMIC—termed a "mega-project" in infrastructural parlance—is projected to cost over $100 billion and produce twenty-four "new" cities along a 1,500-kilometer-long Dedicated Freight Corridor (DFC): a freight rail spine that will radically reduce the travel time of goods between India's northern states and the ports on its western coast. Smart cities are to be constructed along the (DMIC) on greenfield sites, agrarian landscapes that are as yet "undeveloped"[26]

The largest and most prominent of these smart cities is the Dholera Special Investment Region (DSIR) in the western state of Gujarat. Dholera, a small village on the coastal region falling in the path of the proposed DMIC (At a distance of 100 km. from the dedicated freight corridor at Vadodara/Ahmedabad) was proposed to be made a smart-city. It is part of a scheme with a greenfield port development, with nine mega-industrial zones, high-speed freight line, three seaports and six airports. Some of the included components of this development are: a port and shipyard, export-oriented industrial units/SEZ, industrial estates, IT/ITes/biotech hubs, knowledge hubs/skill development centres, a knowledge city, a logistics hub with container freight station, a 3500 MW power plant, townships, an international airport, private residential enclaves, etc. The transportation links include interchanges, access roads for freight and passenger movement, links for passenger and freight, and similar connections.[27] The Dholera Activation Area will be an "industrial park" that will occupy 22.5 square kilometers (4.25 percent) of the total area of the DSIR. The Activation Area is the pilot project that is anticipated to trigger investments in the rest of the DSIR.

Projected to occupy a total area of 920 square kilometers (the city of Mumbai, by comparison is about 600 square kilometers), the DSIR, when completed, will overwrite/superimpose itself over what is now a smattering of small villages in the bhal region of Gurajat – a tidal flat that extends approximately 15 kilometers inland from the coast of the Gulf of Khambat.[28] The mixing of saltwater and freshwater makes the soil of this region highly saline, a geological characteristic that is used as the basis for categorizing vast swathes of its landscape as "barren" or "waste". Yet, the villages in the region are predominantly agricultural, engaged in a combination of subsistence as well as small-scale commercial farming and

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[24] C.H.Betancourth. How open frugal innovation and smart local eco-systems can help in the transition to smartness of many Indian cities. Speaker thematic session: services integration and open innovation to improve urban management. Smart City Expo World Congress Barcelona 14-16 Nov 2017

[25] . http://delhimumbaiindustrialcorridor.com/dmic-gujarat.html (accessed 23/09/2015); 2014

[26] Ayona Datta, "New Urban Utopias of Postcolonial India: 'Entrepreneurial urbanization' in Dholera Smart City, Gujarat," Dialogues in Human Geography, vol. 5, no. 1 (2015): 3–22

[27] McKinsey Global Initiative. India's urban awakening: building inclusive cities, sustaining economic growth. McKinsey & Co., April 2010

[28] Like tidal flats around the world, this region is inundated with seawater during high tide and the monsoon season. SJ Vyas and AJ Joshi, "Quantitative Study of Coastal Flora of 'Bhal' Region in Gujarat," International Journal of Science and Research (IJSR), vol. 4, no. 5 (2015): 337–341

livestock husbandry. Their survival and sustenance has depended on their ability to develop agricultural practices suited to saline environments, in spite of having been denied access to modern infrastructure for irrigation and salinity remediation.[29] Yet, the region is characterized by the government as being unproductive and, therefore expendable for the purposes of urbanization and industrial development.[30]

The construction of Dholera is emblematic of the implantation of an industrial environment in the rural environment.[31] In many ways, the DMIC is a project of extended and "planetary" urbanization, along an infrastructural freight rail spine (Dedicated Freight Corridor" (DFC)[32], imposed on apparently "undeveloped" landscapes. Thus, the production of the new space of the DMIC necessarily relies on the availability of agrarian landscapes heretofore undeveloped or not-urban. Thus, the Delhi Mumbai Industrial Corridor (DMIC), will function here as an urbanization machine

Yet, The plans for Dholera[33], expected to be a greenfield scheme, has already run into issues and protests from the local people, whose land was to be acquired, and where the city was to develop.[34] Similar cases may be found in the Mumbai-Nagpur development corridor. An underlying issue seems to be that in top-down schemes such as these, where the local population is not taken into confidence, there is bound to be protests and differences of opinion.[35]

In Dholera, (but also, Rajarhat, Amravati, Haolenphai and several other new smart cities), farmers, tribespeople and indigenous groups are resisting their exclusion from India's smart city makeover. They are campaigning for their constitutional rights to land, livelihoods and local cultures.[36] Their struggles are proof that India's experiments with rapid urbanization, the demise of the countryside, and, smart urban futures is contested, and will continue to evolve. A possible alternative maybe as follows

11 FROM SMART CITY TO THE HYBRID LANDSCAPES, AGRARIAN ENVIRONMENTS AND SMART VILLAGES

We begin by considering the hybrid landscapes of agrarian India as agrarian environments, and so as to acknowledge the intertwining of "the agrarian" and "the environmental," manifest in landscapes that are malleable and plastic.[37] Agrarian environments offer alternatives to planetary urbanization. Agrarian environments take as their point of origin the "outside" of planetary urbanization, the category of the not-urban.[38] Agrarian environments are the non-urban where the natural is not separated from the human, and where nature and social relations are co-constitutive.[39] In these agrarian environments the urban does not

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[29] SJ Vyas and AJ Joshi, "Quantitative Study of Coastal Flora of 'Bhal' Region in Gujarat," International Journal of Science and Research (IJSR), vol. 4, no. 5 (2015): 337–341

[30] See the 2014 Environmental Impact Assessment Report (EIA) prepared by ABC Techno Labs for the Dholera International Project. In the report, the word saline is repeatedly paired with the word barren to form a compound phrase, "saline and (therefore) barren" (ES-1, ES-7, ES-13, 2-2, 3-47, 4-5)

[31] Lukasz Stanek, Henri Lefebvre on Space: Architecture, Urban Research, and the Production of Theory (Minneapolis and London: University of Minnesota Press, 2011)

[32] It is important here to note that the DFC is the basis for a project of corridor urbanization. It stands in sharp contradistinction to earlier "corridor projects" in India that were typically based along highways and expressways. This infrastructural system is intended to engender urban growth rather than service it. See our proposal for the Mumbai-Nagpur corridor (2017)

[33] Preeti Sampat. Dholera Smart City: Urban Infrastructure or Rentier Growth? The Hindu Centre for Politics & Public Policy, 2015

[34] Datta A. The smart entrepreneurial city: Dholera and 100 other utopias in India

[35] Datta A. New urban utopias of postcolonial India: 'Entrepreneurial urbanization' in Dholera smart city,Gujarat. manuscript unpublished (accessed 20/09/2015); n.d.2.

[36] https://www.hindustantimes.com/india/land-pooling-looks-fertile-but-dholera-farmers-not-reaping-benefits/story-h0jvIaSWO5fklUADQYB9cN.html

[37] Arun Agrawal and K. Sivaramakrishnan, "Introduction: Agrarian Environments," in Agrarian Environments: Resources, Representations, and Rule in India (Durham, NC: Duke University Press, 2000)

[38] C.H.Betancourth. How open frugal innovation and smart local eco-systems can help in the transition to smartness of many Indian cities. Speaker thematic session: services integration and open innovation to improve urban management. Smart City Expo World Congress Barcelona 14-16 Nov 2017

[39] They need to be comprehended as being part of a biophysical and social environment that always includes the urban and the nonurban, the arable and the nonarable, the other areas that are integrally linked to the world of agriculture and environment and their allied social-economic relations (air, water, forests, pastures, fisheries, and wildlife). See for instance our proposals for the case of Udaipur smart city project. 2017-2018

simply "internalize" the rural. Rather, rurality persists in intense yet apparently weak forms, for instance, in the form of the small rural village. Unsurprisingly, the villages affected by the DSIR are the epicenter for local and regional activism by coalitions of agriculturists and landowners protesting against the mechanisms of land acquisition employed by the state to develop the Dholera Special Investment Region (DSIR) DSIR.[40]

Thus urbanization, DMIC, and smart cities can not rely on a refusal of the rural . On the contrary. the urbanizing imperative of a machine such as the DMIC needs to contend with, the conditions of rurality (agrarian environments and the subjects that inhabit them) it collides with. A step in this direction maybe as follows.

Smart city or otherwise, the country-side is still so strong that it is rejecting global rapid urbanization. Therefore, an alternative model needs to be found that is neither absolute urbanization nor the return to the rural. The urban village maybe a case in point

What if instead of transforming the small village into a smart city with the concomitant destruction of the countryside that this implies, we were to take smart technology to the small village and so that so that the multi-fold objectives to advances of technological development could benefit the rural people as much as the residents of the cities?[41] Besides, the localised wisdom of the rural areas could be formalised into applications which would be both indigenous to the site, and possibly even find universal relevance[42]

Physical connectivity like roads and railways, electronic connectivity like telecommunications, the internet and knowledge, which will then result in economic connectivity; this will empower villagers, giving them sufficient employment opportunity, and hence bring down poverty levels in the rural areas. Such development would also lessen the need of the villagers to have to migrate to cities for jobs, and the need for India to be urbanised in the manner that one commonly understands as being physically present in cities to avail its opportunities. The uplift of the majority is a foremost requirement in the country, in all spheres of life.

Such progress could be achieved by the use of advancing technologies such as solar energy for electrical power, as well as broadband, wi-fi and satellite networks, without actually needing to be actually physically connected; while physical connections with roads and transportation would certainly need to be there, much could be achieved by providing the facilities itself, and minimally some rudimentary training.

A smart-village could be imagined as a place where a population of 30,000-40,000 would be given the amenities of an urban area, with infrastructure and services in a rural hub, with electricity, roads, potable water, telecom services as well as health and educational services. Such smart-villages could be distributed along the above development corridors, and the project implemented in a public-private participation mode.[43]

The aim of such a smart-village will be to stem the unnecessary migration from the rural areas to the urban; by providing the facilities of the cities in the rural areas, the divide between the rural and urban would be bridged, and the need for a permanent move to the city could be minimised; this would also imply providing a balance of the socio-economic development between the urban and rural areas. In short, the aim will be to bring up the country as a whole into the 21st century, without having to physically change the rural-urban distribution.

The critical factors that differentiate between urban and rural life is the development of

proper infrastructure which will give the facilities of the cities to the villages. The necessity for actual migration to the urban areas is probably not a fundamental requirement, as may be made out to be. While it might not be necessary to migrate to the urban areas to be economically better lifestyle, it really could be a myth that was being perpetuated, before the development of current technological solutions

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[40] see Preeti Sampat and Simi Sunny, "Dholera and the Myth of Voluntary Land Pooling," Socio-Legal Review, vol. 12, no. 2 (2016): 1–17
[41] Kalam APJA, Singh SP. Target 3 Billion. Penguin Books; 2011.
[42] C.H.Betancourth. How open frugal innovation and smart local eco-systems can help in the transition to smartness of many Indian cities. Speaker thematic session: services integration and open innovation to improve urban management. Smart City Expo World Congress Barcelona 14-16 Nov 2017
[43] See our prototype proposal for Virul along the Mumbai-Nagpur development corridor. 2017

12 THE INHERITED SMARTNESS OF THE RURAL AND ITS FARMERS WILL THEN BE ENHANCED

The rural-smart village inhabitant will be living in usually un- or minimally polluted air, water or land; she will enhance and utilise her knowledge of the seasons, of the use of natural cycles, and similarly for the benefit of their own existence or subsistence, of that of others (farmers produce food for the nation and is also therefore part of the national economic system). The farmer also has that natural attachment to the land that she owns or cultivates, as a source of livelihood, as the sole economically viable property, as well as has a psychological affinity; she would part with it only when forced to, and under extraordinary circumstances

The reasons why the proposal for a smart village, or similar suggestions need to be taken seriously is because 1) it curtails the need for rural-urban migration, 2) bridges the rural-urban divide by providing facilities of the urban areas to people in rural areas, and 3) it provides balanced socio-economic development.[44] The provision of adequate infrastructure in rural areas, including physical, commercial or educational, can act as a deterrent to expected migration, both in time and in space; this deterrence would, if at all necessary, provide time for the planning authorities to lay out some basic or possibly the best infrastructure, in the expectation of future needs.

13 CONCLUSION

There is a collision in the making between the urbanizing imperative of a machine such as the Delhi-Mumbai industrial corridor (DMIC) and the conditions of rurality it has to contend with. Otherwise, as planetary urbanization descends upon rural landscapes, the essential ability to perform "actions at a distance" embedded in the smart city, will be repeatedly undermined as it comes into contact with agrarian environments and the subjects that inhabit them. Thus, we need to move beyond the notion that the urban simply "internalize" the rural, and of rendering rurality as anything other than islets of marginal existence, precariously embalmed in buffer zones, with their populations expected to submit to "shift in livelihoods from agrarian to non-agrarian and The service sector[45]

Rather, rurality persists in intense yet weak forms. As we have been arguing for the case of Udaipur's smart city, within the mesh of the city's urban fabric survive islets and islands of rurality, often (but not always) poor areas with ageing peasants, badly 'integrated', stripped of what had been the nobility of peasant life.

Planetary rapid urbanization (DMIC) relies on an epistemic refusal of the rural to smooth over variegated regional economies and their attendant morphologies. While it, (DMCI), conveys new urban life, rurality does not disappear. Rurality persists in the constitution of the urban through symbols and representations as well as the politics and practices of "nature and the countryside.

It could be posited that beyond the originary proposition of a world without the rural, or a total urban world, we have instead a co-evolutionary framework where rurality is not considered disappeared or dissolved but reconstituted in an infinite spectrum of mutable categories—"more than rural" or "less than urban," or "more or less rural" or "more or less urban" – an oscillating and fluctuating mediation between the urban and the not-urban

The countryside does not need to disappear. Some of the reasons adopted by the government[46], and by McKinsey[47], that the national urbanisation rate would reach fully 52% by 2050 does not necessarily have to be a given. These kinds of seeming predictions could set in motion a wave of unrest among residents of rural areas, into the belief that life as we know it cannot continue, and that migration to urban areas is almost a necessary fact

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[44]   IANS.   http://www.siliconindia.com/shownews/PURA__is_150_Billion_business_oppourtunity-nid-74057-cid-3.html, of 17/11/2010. Schön DA, Sanyal B, Mitchell WJ (eds). High technology and low-income communities: prospects for the positive use of advanced information technology. Cambridge, MA: MIT Press; 2002.

[45] SENES Consultants India, "Environmental Impact Assessment of Dholera Special Investment Region (DSIR) in Gujarat" (2013), 377

[46] GoI-MHA. http://www.censusindia.gov.in (accessed 23/09/2015); 2011.

[47] McKinsey Global Initiative. India's urban awakening: building inclusive cities, sustaining economic growth. McKinsey & Co., April 2010.