

India's Mobility Merchants

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As western auto markets shrink due to environmental concerns coupled with financial tightening and long-term worries about fuel supply, India has witnessed a decade-long steep sales growth rates in all categories of vehicles. The promise of a rapidly growing automobile market has brought every global auto manufacturer of significance to India. The result has been a pattern of consumption of the means to mobility which discourages discussion of its impacts, just as surely as it subdues debate about alternatives. Moreover, the State is powerfully rearranging the landscape with a hugely expensive programme to build a nationwide expressway network that will encourage individual consumption of mobility at the cost of public alternatives.

The close link between the ambitions of India's automobile industry and the government of India's massive road-building programmes became abundantly clear during the 10th Auto Expo, held in New Delhi from 5 to 11 January 2010. Industry interest groups such as the Confederation of Indian Industry (CII) have forecast that economic growth in rural India coupled with a rapid scaling up of manufacturing capacity amongst vehicle manufacturers and the auto components industry will create jobs and spread prosperity. It is a forecast that has been subscribed to enthusiastically by the Ministry of Heavy Industries and Public Enterprises. In its policy document, "Automotive Mission Plan 2006-2016: A Mission for Development of Indian Automotive Industry", the "vision" statement clearly and unambiguously announces the intent:

To emerge as the destination of choice in the world for design and manufacture of automobiles and auto components with output reaching a level of US\$145 billion accounting for more than 10% of the GDP and providing additional employment to 25 million people by 2016.¹

Promises and Projections

From 2006, the impetus given to the building of new expressways, the Golden Quadrilateral road system, and the widening and upgrading of the existing national highways and state highways has been consistent. The effort takes shape under the National Highways Development Project (NHDP), which is described by the central government as "the largest highway project ever undertaken in the country".² The implementing agency for the NHDP is the National Highway Authority of India (NHAI). For the decade-long programme (2005-15) the projected investment is enormous: Rs 2,35,690 crore over seven phases. These include upgrading over 12,000 kilometres (km) of national highways under the build-operate-transfer

(BOT) basis, widening over 20,000 km of national highways and the "six-laning" of 6,500 km of selected national highways.

From the point of view of the Ministry of Road Transport and Highways, capacity needs to be created to accommodate both the increased vehicle population and to fulfil the demand for roads upon which to use all these new vehicles. Certainly, in the period 2002-03 to 2008-09 the average annual growth rate in sales for the basic four categories of vehicles – commercial vehicles (trucks and buses), three-wheeled vehicles (including auto-rickshaws), two-wheeled vehicles (motorcycles, scooters and mopeds), and cars – has become the stuff of manufacturing legend. Double-digit annual sales growth in all these four categories of vehicles has turned India into a market which has the potential to become a \$145 billion auto bazaar by 2016, say the CII, the Automotive Component Manufacturers Association (ACMA) and the Society of Indian Automobile Manufacturers (SIAM), who jointly organised the 10th Auto Expo.

There is no doubt that these are the sales growth trends of the last eight years. Taken together with the promise that the trends will continue over, at least, another 10 years, this has led every single major global auto-maker to attend the 10th Auto Expo. Ten years ago, in 1999-2000, auto factories in India had made 5,74,000 cars; in 2008-09 the annual figure has been 16,20,000. In 10 years the number of commercial vehicles built has more than doubled, from 2,99,000 to 6,35,000, while the number of two-wheelers has much more than doubled, from 37,78,000 to 83,94,000. The promotional literature of the Auto Expo highlighted the promise with terse bullet points: "India is the second largest two-wheeler market in the world", "Fourth largest commercial vehicle market in the world" and "Eleventh largest passenger car market in the world, and expected to be the seventh largest by 2016".³

There are three reasons for the rise of the Indian automobile bazaar. First, in 2002, the Indian government formulated an auto policy aimed at what it called "promoting an integrated, phased and self-sustained growth of the industry".

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The policy was designed expressly for supporting the growth of the industry and was built around three main concepts: a low entry barrier (automatic approval for foreign equity investment up to 100%, no minimum investment criteria), investment incentives (investment incentives are provided by local state governments with most states customising incentives for large investments), and an emphasis on research and development (weighted tax deduction of up to 150% for in-house research and R&D activities). The fourth concept has been called “concern for emissions” and is described as the “government’s intention of harmonising regulatory standards with the rest of the world”.

Second, since 2006, the automobile industry has suffered globally, what it plaintively calls, a “severe demand shock” on account of the economic slowdown and credit crunch in western markets. The drop in demand in 2008 and 2009 has been 38% in the US, 18% in Europe and 13% in Japan. In contrast, the Indian passenger vehicle market maintained its demand during 2008-09 and is rising sharply in 2009-10. This is why most of the big names in the global automobile industry (General Motors, Toyota, Ford, Hyundai, Suzuki, Honda, Skoda, Volvo, Mercedes Benz, BMW, Volkswagen, etc) are planning, what industry analysts call, “significant capacity build-up for the Indian markets”.

Third, there has been a demand for passenger vehicles from India’s Tier 2 and Tier 3 cities and towns despite the impact of a failed monsoon in 2009. Where has the spending money come from? Till now, poor monsoons have meant there is less disposable income in the hands of the farming community and the rural population which directly depends on farming or on agribusiness. “Industry estimates suggest that approximately 60% of the rural economy now depends on non-agricultural income such as trading, remittances from cities, employment in the manufacturing sector, etc”, states a sector analysis by ICRA, the credit rating agency. “That apart, substantial increase in crop prices, which were higher over the past three years, has also resulted in higher disposable income. Additionally, the increase in land prices across the country, and the implementation

of the Sixth Pay Commission have collectively helped in supporting the growth in the rural and semi-urban cities/tier III cities.”²⁴

Car Commitments

At the 10th Auto Expo, the manufacturing commitments and launch announcements made by the global auto manufacturers and their Indian collaborators and counterparts signalled India’s new importance:

- Volkswagen AG said it “aims to become a significant player in the Indian small car market”. Volkswagen is Europe’s largest carmaker and said it will launch its Polo sedan model in India in the second half of 2010.
- Honda Motor unveiled a new compact car, a five-seater model developed “especially for India and other emerging markets”.
- Honda Motor’s two-wheeler section announced plans to sell 1.5 million units in India in 2010-11, and the company added that even for 2009-10 it expects to surpass its target of 1.25 million two-wheelers, which constitutes annual growth of 17%.

Table 1: Prioritised Expressway Segments Phase 1 (PPP Mode) for Completion by 2012, Totalling 3,530 km

Stretches	Km	Through States
Ahmedabad-Rajkot	215	Gujarat
Bamanbor-Kandla	210	Gujarat
Pune-Sholapur	250	Maharashtra
Sholapur- Hyderabad - Vijayawada	580	Maharashtra, AP
Mumbai-Nashik-Dhule	340	Maharashtra
Haridwar-Sitapur	330	HP, UP
Delhi-Panipat-Ambala	195	Delhi, Haryana
Trichur-Kanyakumari	400	Kerala, TN
Coimbatore-Erode-Salem	175	TN
Mangalore-Karwar-Panaji	400	Karnataka, Goa
Lakhandon (Jabalpur)-Allahabad	435	MP, UP

Table 2: Prioritised Expressway Segments Phase 2 (PPP Mode) for Completion by 2017, Totalling 4,310 km

Stretches	Km	Through States
Delhi-Rohtak-Sirsa-Mandi Dabwali	350	Delhi, Haryana
Surat-Nagpur	750	Gujarat, Maharashtra
Chitradurga-Sholapur	400	Karnataka
Amritsar-Ludhiana-Ambala	260	Punjab
Ghaziabad-Muzzafarnagar-Dehradun	260	UP, HP
Fatehpur-Jaipur-Agra	430	Rajasthan, UP
Honavar-Shimoga-Bangalore	325	Karnataka
Vishakapatnam-Koraput	230	AP, Orissa
Bokaro-Bhaktiyarpur	215	Jharkhand, Bihar
Kendhujagarh-Rourkela	80	Orissa
Panaji-Mumbai	510	Goa, Maharashtra
Biaora-Nagpur	460	MP, Maharashtra
Dhanbad-Bokaro	40	Jharkhand

• Toyota launched a new compact car called Etios and said “India will play a pivotal role in Toyota’s global expansion plans and the time has come for us to strategically accelerate our growth here”.

- The world’s second biggest truck manufacturer, Volvo, said it will increase component sourcing from India fivefold to \$5 billion by 2015 from its current parts order value of about \$1 billion. Volvo also said it expects truck sales in India to grow by 20% in the calendar year 2010.

Table 3: Prioritised Expressway Segments Phase 3 (PPP Mode) for Completion by 2022, Totalling 5,571 km

Stretches	Km	Through States
Nagpur-Raipur	260	MP, Maharashtra
Dhule-Etwah	750	MP, UP
Pindwara-Pali	223	Rajasthan
Raipur-Kolkata	750	MP, WB
Bangalore-Mangalore	360	Karnataka
Ranchi-Jamshedpur-Baharagora	220	Jharkhand, WB
Ranchi-Bokaro	90	Jharkhand
Indore-Chittaurgarh	290	MP, Rajasthan
Faridkot-Barnala	85	Punjab
Faizabad-Allahabad	151	UP
Coimbatore-Bangalore	402	TN, Karnataka
Sholapur-Dhule	400	Maharashtra
Salem-Cuddalore	190	TN
Pathankot-Amritsar-Faridkot	255	Punjab
Jammu-Pathankot	110	JK, Punjab
Etwah-Faizabad	250	UP
Ahmedabad-Ratlam	350	Gujarat, MP
Ludhiana-Barnala	120	Punjab
Chittaurgarh-Pali	150	Rajasthan
Bhaktiyarpur-Muzzafarpur	165	Bihar

Table 4: Prioritised Expressway Segments Phase 3 (Annuity Mode) for Completion by 2022, Totalling 5,226 km

Stretches	Km	Through States
Kanyakumari-Tirunelveli-Pondi-Chennai	700	TN
Chittoor-Cudappah	130	AP
Cudappah-Khammam	610	AP
Khammam-Koraput	350	AP, Orissa
Koraput-Kendhujagarh	500	AP, Orissa
Rourkela-Ranchi	225	Orissa, Jharkhand
Kishanganj-Dispur	500	WB, Assam
Muzzafarpur-Kishanganj	150	Bihar
Etwah-Agra	75	UP
Kolkata-Kishanganj	380	WB
Pali-Fatehpur	315	Rajasthan
Fatehpur-Hissar	175	Rajasthan, Haryana
Barnala - Mandi Dabwali	96	Punjab, Haryana
Balia-Patna	80	UP, Bihar
Allahabad-Bilaspur-Raipur	640	UP, Chhattisgarh
Raipur-Koraput	300	Chhattisgarh, Orissa

Master Plan for Indian National Expressway Network Final Project Report, November 2009.
Source: Ministry of Road Transport and Highways, Government of India.

- Nissan Motor said it will offer a selection of nine vehicles in India including five built locally. The company said it will start producing a new compact car at its first Indian factory in May 2010 with production volumes that are expected to surpass Honda's local volumes next year. Nissan's Chennai factory is co-owned by French partner Renault SA.

- Maruti Suzuki, India's biggest auto-maker, said it had priced newly launched five-seater multipurpose car, called Eeco, at Rs 2.59 lakh as a response to competition in the low-cost vehicles segment. Maruti is 54.2% owned by Japan's Suzuki Motor Corp, and the company said the Eeco is expected to initially sell 40,000 units annually.

- Market leaders in trucks – Tata Motors, Ashok Leyland and Volvo – said that sales of trucks and buses have risen 12.4% in the first eight months of 2009-10 from a 22% fall in 2008-09 and the companies expect the purchasing momentum to strengthen.

Such an all-round optimism for a period of up to a decade requires an assurance that the infrastructure-building commitment and investment will not slacken. That assurance comes from the Ministry of Road Transport and Highways' comprehensive "Master Plan", which advocates a sprawling "Indian National Expressway Network". The final project report of this master plan was released by the ministry in November 2009, only two months before the 10th Auto Expo. This master plan contains the rationale for and routes to comprise a vast expressway network of 18,600 km, to be built in three phases each concluding in 2012, 2017 and 2022 (Tables 1 to 4, p 41), and which proposes to employ both public-private partnership and annuity modes of financing and project execution. Moreover, the master plan seeks the creation of a National Expressway Authority of India to oversee this gigantic task, which will have extensive and overriding powers and amongst whose important functions will be the expediting of land acquisition for the many sections. Finally, the master plan has called for "innovative and feasible measures to improve the financial viability (including ploughing back of profit generated from real estate development, commercial development of wastelands, etc)" to finance the 60 different sections of the proposed expressways network.⁵

Concerns

These two developments – the underwriting by the government, through its road transport ministry and associated ministries and departments, and the growth of the automobile market in India to which commitments have been made by industry – taken together have presented us with worrying new evidence concerning the kind of development we will see in urban and urbanising India over the next decade. There are a host of related concerns:

- (1) On transport and public transit alone, the automobile-centric practices and policies embodied in the 10th Auto Expo, the automotive mission plan and the national expressways network master plan push alternative modes of transportation (including the high-potential bus rapid transit system (BRTS), such as is now being introduced in Ahmedabad) into the background.
- (2) From both government and from industry there is very little recognition of the possible scenarios that can govern the availability of fuels (certainly of fossil fuels until 2022) needed to fulfil the 10th Auto Expo's consumerist theme of "Mobility for All". This fundamental linkage should have hit home, for amidst announcements of new models came the regular bulletin from the commerce ministry that India's crude oil imports rose 6.1% in November 2009, climbing to 10.48 million metric tonnes from 9.88 million a year earlier.
- (3) India is already the fourth largest aggregate emitter of greenhouse gases worldwide, and the country needs to be far more creative and visionary about creating a low-carbon future for its citizens. Industry and individual citizens will increasingly be called upon to be responsible for their manufacturing and consuming patterns relating to emissions and resource use. However, neither in the practice nor in policies, the government or the automobile industries sector talks about the need for emissions equity in the country.
- (4) Despite the efforts being made to integrate urban planning and transportation alternatives under the Jawaharlal Nehru National Urban Renewal Mission, the pro-automobile policies pay negligible attention to the inelastic demand created for cars in India, which are kept at a high pitch by the automobile (and financing) industry through extensive advertising.

There are no significant measures, whether regulatory or persuasive, to temper this demand. Moreover, the huge direct demand for land (for use as expressways, highways, widened roads, etc), and the indirect impacts of changes in land use that will affect agriculture most, are externalised costs that both rural and urban public are already bearing, and which appear in no real costs analysis of a pro-automobile mobility choice.

For the central ministries, the logic at work is that of closing the capacity gap so that the planned expressway-quality road network can absorb the growing passenger and road freight traffic. This objective exists with minimal reference points that are of concern to other ministries (to wit, agriculture, panchayati raj, earth sciences, urban development, water resources, environment and forests). At one level, the formula which is central to the massive national expressways programme is one of inexorably larger numbers. The road transport and highway ministry's annual report of 2008-09 has stated that national highways constitute only about 2% of the road network but carry 40% of the total road traffic; the number of vehicles has been growing at an average pace of around 10% per annum (2001-02 to 2005-06). Further, it adds that the share of road traffic in total traffic has grown from 13.8% of freight traffic and 15.4% of passenger traffic in 1950-51, to an estimated 60% of freight traffic and 87.4% of passenger traffic by the end of 2005-06. "The rapid expansion and strengthening of the road network, therefore, is imperative to provide for both present and future traffic and for improved accessibility to the hinterland", is the ministry's unsurprising, characteristically one-dimensional, assessment. It contains no trace of the larger concerns about the direction of development that rural and urban India may take over the next generation, in an environment increasingly dominated by climate change, widespread financial turmoil and growing food insecurity.

What About Public Transport?

Missing entirely, therefore, from the mobility discussion are the roles of the railways, of buses and of the wide variety of formal and informal transport alternatives

used in both rural and urban settings, and particularly of non-motorised transport. Even until 2004, buses carried up to 90% of public transport passengers in Indian cities, most of which do not have suburban commuter rail services and whose inhabitants rely instead on a combination of buses, minivans, auto-rickshaws, cycle-rickshaws and taxis.⁶ In general, the bigger the city, the higher the percentage of urban trips served by public transport: 30% in cities with populations between one and two million, 42% for cities with populations between two and five million, and 63% for cities with populations over five million.⁷ Buses in Indian cities and towns are disadvantaged by intensely congested conditions which are caused by the growing number of personal vehicles (while car-pooling and sharing are still rare, these civic ideas being discouraged by the enforcement of advertising messages which hold out the owner-car commute as a symbol of social and professional achievement).

Even so, a major disadvantage of the bus having severely limited right-of-way in such conditions has begun to be remedied with the introduction of the BRTS. The BRTS which has begun service in Ahmedabad (12.5 km of a planned 90 km network is operational) already carries 16,000 to 18,000 passengers per day and – more important for an economically significant urban agglomeration – 27% of its commuters are riders of private vehicles.⁸ The difference between the two scenarios – one of intense congestion and the other of sustainable mobility – lies in approaches to the regulation of consumption of mobility options. And it is here that policy and regulation have been failures. As the urban development ministry itself records in its “Study on Traffic and Transportation Policies and Strategies in Urban Areas in India”:⁹

The Indian economic boom has in its wake provided a great opportunity for an urban dweller to acquire personalised modes which he has taken to with glee given that the public transport system in every city without an exception has fallen short of meeting the increasing demand. The urban road chaos is increasing day by day with ever increasing car ownership. Infrastructure shortages are increasingly showing their ugly arm with traffic snarls and grid locks.

The immensely expensive contradiction in public spending on a gigantic expressways network, while barely addressing the sustainable mobility question in India's cities and towns, needs urgent attention. For the ministries and departments concerned with roads, highways and their associated infrastructure and systems, the rationale for a sprawling new web of high-speed highways (a rural, non-urban solution) is the high settlement densities in heavily built-up urban zones and the motorised mobility congestion (an urban cause). There is an example from China (whose race to build massive infrastructure is seen, particularly by the automobile industry in India, as an inspiration) to show that a key factor influencing the increase in private cars is the construction of new roads. The expansion of roads, expressways and high-speed tollways has encouraged car ownership aspiration, following the dictum of “supply creates its own demand”. More investment in highway construction in China has been accompanied by an increase in highway and expressway mileage: in 1998, China's investment in expressways was \$1,072 billion, and vehicles' total travel on these was logged at 1,279,000 km on 8,733 km of expressways; in 2002, the investment was \$1,529 billion, and vehicles' total travel on these was logged at 1,765,000 km on 25,130 km of expressways; in 2005 the investment was \$2,326 billion, and vehicles' total travel on these was logged at 1,931,000 km on 41,005 km of expressways.¹⁰

In contrast, the broad strategy recommended by the OECD (followed by several west European countries but not North America and Australia) is to adopt policy instruments which are regulatory (for example, concerning emissions of CO₂ and local pollutants), fiscal (fuel taxes and road pricing, other disincentives and also incentives) and hybrid (such as tradable entitlements to emit CO₂ from vehicles). These instruments are used to encourage technological breakthroughs, to achieve mobility management and raise awareness and education levels, since information and education are seen to be key to raising informed public participation towards sustainable mobility ends. Moreover, the strategy includes approaches to

land use planning that is synchronised with these objectives in order to reduce commuting distance, promote access to public transit and avoid suburbanisation.

Pressure from Vested Interests

The sustainable mobility route is not one that holds appeal for the two directly concerned ministries – of heavy industries and public enterprises and of road transport and highways. There is concerted pressure from industry not to, for currently the automotive industry in India is said to employ 2,00,000 persons in vehicle manufacturing, 2,50,000 in component companies and 10 million more in what it calls the “value chain”. The employment promise is to rise by an additional 25 million, an enormous number, by 2016, provided the public investment commitment is maintained. The objectives are defined only in terms of automobile dominance by the automotive mission plan:

It is expected that in real terms, India would continue to enjoy its eminent position of being the largest tractor and three-wheeler manufacturers in the world and the world's second largest two-wheeler manufacturer. By 2016, India would emerge as the world's seventh largest car producer (as compared to the eleventh largest currently) and retain 4th largest position in world truck manufacturing sector. Further, by 2016, the automotive sector would double its contribution to the country's GDP from current levels of 5% to 10%.

This position is strongly supported by industry (automobile manufacturers, auto component makers, infrastructure companies, construction companies and contractors' lobbies and the real estate industry) which points to China's spend of 10% of GDP on infrastructure as compared with India's 5% spend.¹¹

The corporate line-up (both Indian and global) in the automotive industry is substantial. Among the Indian manufacturers are Tata Motors, Mahindra & Mahindra, Bajaj Auto, TVS Motors, Hero Honda, Force Motors, Ashok Leyland, Eicher, Asian Motor Works, Atul Auto, Hindustan Motors and Swaraj Mazda; the global manufacturers are GM, Daimler Chrysler, FIAT, Toyota, Ford, Hyundai, Piaggio, Yamaha, Maruti Suzuki, Honda, Skoda, Volvo, Mercedes Benz, BMW, Volkswagen and Suzuki Motorcycle; among the Indian auto

components suppliers are Bharat Forge, Sundram Fasteners, Rane Group, Shriram Pistons, RICO Auto, Sono Koyo Steering and Exide; the global auto component suppliers include Delphi, Visteon, Bosch, Denso, Valeo and Thyssen Krupp. Similarly, key players in the roads infrastructure business are DSC, Gayatri Projects, GMR Infrastructure, Hindustan Construction Company, IRB Infrastructure Developers, IL&FS Transportation Networks, IVRCL Infrastructures and Projects, Jaiprakash Associates, KMC Constructions, Larsen & Toubro, Nagarjuna Construction Company, Patel Engineering, Reliance Infrastructure, Sadbhav Engineering, Simplex Projects and Soma Enterprises.

What are the spaces this formidable line-up will occupy, if the writ of the automotive mission is allowed to run unimpeded? Immediately, and as an outcome which has grave consequences for agriculture, tens of thousands of acres of cultivable land, orchards, grazing land and commons are threatened. (The master plan has already referred to “wasteland” along expressway alignments as holding potential for real estate development, although in natural farming and grazing systems there is no such thing as a “wasteland”.) The impact on land use will be immense, for the standard 90-foot right-of-way for a four-lane highway (two lanes by two) in effect covers a transect that is close to 50 metres since it includes road shoulders, drains, service roads and the footprint of the raised roadbed. Next is the characteristic “ribbon development”, so conspicuous in Kerala and which has so marred that state’s landscape. The Golden Quadrilateral is already becoming a linear settlement magnet, littered with tiny services and workshops and micro-shanty settlements, all of which contribute to land use changes that extend much beyond the margins of the physical expressway. For worried planners in the urban development ministry, these are endlessly radial outgrowths that defy the provisioning of social sector services. Finally, informal linear settlements are a precursor to formal (or “regularised”) land occupation by real estate developers and property builders, and the race to manipulate allocations of plots for commercial and housing purposes along newly four-laned and

six-laned national highways all over the country bears testimony to this trend.

The Externalised Costs

Yet the evidence is that land acquisition is not only accorded priority for road building, but it is also seen as critical to the financial calculations governing the return on investment in highway building by state governments. There are two signals contained in the Ministry of Road Transport and Highways’ master plan for an Indian national expressway network that are alarming for their intent and proposed scope. First, land acquisition for national highways is governed by the National Highways Act, 1956, which provides for compensation against properties to be acquired. The master plan states:

Since this is going to be a “green field” project, the quantum of land to be acquired for construction is going to be enormous and as such, efficiency of implementation of the project packages would depend very largely on the speed and efficiency with which land acquisition formalities could be completed.

The master plan then proposes:

In view of both the enormity and the importance of the task National Highway Act, 1956, may require certain modifications both in terms of the service itself and in the system of delivery of service.

The master plan also suggests that a new or modified Act be called the National Expressway Act, 2010.

Second, the master plan suggests that the land acquisition powers and mechanisms

found in the Delhi Metro Act be used as a model for the proposed National Expressway Act, 2010, and quotes the relevant part of the Delhi Metro Act, “...The metro railway administration shall have the power to do anything which may be necessary or expedient for the purpose of carrying out its functions under the Act”, a provision that is seen by the master plan as “successful in negotiating the task of LA (land acquisition) expeditiously”.¹² The land acquisition provisions promise to identify and manage all rehabilitation and resettlement issues, and to fairly compensate all agricultural titleholders. However, the plan adds that a separate cell (a commissionerate) must be formed within the national expressway authority of India for overseeing the land acquisition process and that, “following the DMRC (Delhi Metro Rail Corporation) Act, even developers/builders could be authorised to undertake land acquisition and its utilisation for decentralising the whole process”. Such a provision amounts to advocating that land acquisition be outsourced to those parties most interested in commercially developing it.

At a conservative estimate, the land required directly for the 60 sections to be built in three phases until 2022 is over 1,10,000 hectares. The commercial promise contained in the building of the three-phase expressway network is outlined in the indicated costs. The civil work cost has been broadly estimated at Rs 14 crore per km for four-lane expressway sections

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Table 5: Share of Mobility Type within Cities (in %), 2007

City Category	Population	Walk	Cycle	Two-Wheeler	Public Transport	Car	IPT
Category 1a	<0.5 million, plain terrain	34	3	26	5	27	5
Category 1b	<0.5 million, hilly terrain	57	1	6	8	28	0
Category 2	0.5 to 1 million	32	20	24	9	12	3
Category 3	1 to 2 million	24	19	24	13	12	8
Category 4	2 to 4 million	25	18	29	10	12	6
Category 5	4 to 8 million	25	11	26	21	10	7
Category 6	>8 million	22	8	9	44	10	7

IPT: Intermediate Public Transit.

Source: "Study on Traffic and Transportation Policies and Strategies in Urban Areas in India", Ministry of Urban Development, May 2008.

and Rs 20 crore per km for six-lane expressway sections (at 2009 prices). Operation and maintenance (O&M) costs are estimated as: routine maintenance Rs 2.5 lakh per km per year; periodic maintenance Rs 50 lakh per km every fifth year; toll plaza (O&M only) Rs 1.7 crore per year; insurance cost as 0.15% of project cost; and electricity charges of Rs 50,000 per km for lighting. While operation and maintenance costs are detailed and earnings for project participants are therefore inferred, what has remained entirely off the calculation sheets are estimates of the greenhouse gas emissions from India's transport sector under conditions that actually promote the growth of the vehicle stock in each state.

Already, the more industrially developed states of Maharashtra, Tamil Nadu and Gujarat have the highest emissions from the road transport sector: Maharashtra's contribution is the largest at 28.85 teragrams (Tg) of CO₂, followed by Tamil Nadu with 26.41 Tg, Gujarat with 23.31 Tg, Uttar Pradesh with 17.42 Tg, Rajasthan with 15.17 Tg and Karnataka with 15.09 Tg. The total of these six states accounts for more than half of the total CO₂ emissions from road transport in India, which is 243.82 Tg. However, this break-up uses data for 2003-04, and has been prepared in a 2009 study entitled "Emissions from India's Transport Sector: Statewise Synthesis".¹³ In 2003-04, India's automobile industry produced 7.24 million units in all categories (commercial vehicles, two- and three-wheelers, and cars) while in 2008-09 the total units produced was 11.18 million. Using the data and analysis of the CES-IISC study and the state shares of CO₂ emissions, the greater emissions impact of not only more vehicles but more road-kilometres travelled can easily be assessed.

The overall effect is that of a national mobility and transport programme controlled

and directed almost exclusively by (1) the automobile and auto components industries, (2) by two ministries that refuse to study the impact of such a direction on our natural resources and living spaces, and (3) by real estate and construction interests. In this form, the programme has but a single focus – to increase at all costs the demand for motorised mobility in India. The vicious circle of infrastructure building spurring demand for vehicles at the cost of both non-motorised transport (pedestrians included) and public buses, which is leading to greater demand for individual motorisation is one that has been unsustainable since at least 2002, when the Indian automotive campaign began (Table 5). The damage from air pollution to human health in Indian cities has been estimated at, as much as, Rs 860 crore per city¹⁴ – and there are 48 urban agglomerations with over a million inhabitants each – but efforts to lower the use of oil and CO₂ emissions have been checkmated by the gadarene rush to expand private mobility and establish a national expressway network.

Spaces for Alternatives

For the populations in our cities and towns, the argument that consumption is not the same as well-being has much potential, provided there are enabling spaces and institutions that can encourage such an argument. Civic engagement on questions of personal and community transport, on personal mobility and on the impact of modes of transportation are few and far between, and the place that such engagement could take is instead occupied by corporate and commercial interests, only thinly camouflaged by incessant advertising. In the pursuit of automobile ownership and use as a primary symbol of "development", India's urban consumption practices reflect those structures of inequality and

power which, for example, allow the Ministry of Environment and Forests to embark on its own definitions of climate change and global warming, simply so as not to disturb the GDP quotient. Consumption that is democratic, egalitarian, and available to all has little or no space in between these structures, for, to gain attention, such responsibility requires both a cultural change to take place and thereafter common sense policies to facilitate it.

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