

Mobility Crisis: Agenda for Action 2010. Souparno Banerjee (ed.). Centre for Science and Environment, 41 Tughlakabad Institutional Area, New Delhi 110 062. 2010. 114 pp. Price not mentioned.

The Indian cities are currently facing explosive growth in the number of private vehicles. This is a similar phase that the US had faced way back in early 1950s and Europe in late 1960s, when their vehicle ownership reached a saturation level of one car per household. Although our car ownership is still below that level, but considering our huge and dense population and urban development, we cannot afford to reach anywhere near that stage, as the situation will possibly lead to zero mobility and we simply cannot afford to continue providing road infrastructure till we reach that stage. Currently, our urban agencies are locked in a vicious circle of providing road infrastructure in order to match with the exponentially growing number of private vehicles, but in all possibilities this will lead us nowhere. Therefore, it is important at this juncture of our city growth, to switch over from road infrastructure-centric solutions to more demand and space management solutions. This has to come both from good planning as well as good policy initiatives. On the one side, we need to focus our infrastructure planning on space-efficient modes: mainly public transport, walking and bi-cycling and on the other hand, we need to introduce policies that enable the use of private modes less attractive. The balance of these measures should be such that the use of space-efficient and sustainable modes should become a preferred (and not the forced) choice of the citizens.

Just to give an example of magnitude of space efficiency that can be achieved through public transport, a two lane road space created through expansion will provide an additional capacity of about 1100 passenger car units (PCU) per hour per direction of flow, which would be approximately 1700 persons per hour per direction. Whereas if the same two lane space is provided for two light rail transit lines or bus rapid transit lanes (one for each direction), it can provide capacity up to 40,000 persons per hour per direction, i.e. 23 times more capacity for the same road width. In a nutshell, mere road expansion for private vehicles is a huge waste of capacity that could have been otherwise achieved using the same extra width generated for public transport rather than private vehicles. However, no matter how much we upgrade our public transport and non-motorized transport, it cannot become more attractive than private vehicles unless the ownership and use of private vehicles is made less attractive by a combination of policy measures like more taxations on vehicle purchase, congestion charging, parking restraint policies, differential parking charges, restrictions during peak period travel, full pedestrianization in CBD areas, etc. We have many successful examples across the globe where such planning and policy initiatives have resulted in excellent living environment in many global cities.

This book provides a succinct description of the above-mentioned issues on urban mobility, and the planning and policy initiatives required to address them. The book has been written by compiling statistics and research done on urban mobility by various agencies and authors, with a case study focused on Delhi, India. The authors have put in tremendous efforts in compiling the statistics and studying the various research papers and reports, and in gradually developing this book.

It is a short book running into slightly more than 100 pages, but is well focused and crisply written. The style of writing and presentation is different but impressive, which makes it much more interesting and enjoyable for the general reader. The book uses different colour strips for different chapters, making it easy to move back and forth. Also, each chapter starts with a short abstract and few important punch lines from the chapters. Further, separate boxes are used within

the chapters to highlight important contents of the chapters. The book is divided into thirteen chapters; the first three chapters cover various aspects of air pollution, quality and standards. The fourth to sixth chapters describe the present status regarding urban mobility in Delhi, reforms attempted or required, and agenda for reforms to address mobility issues. Chapters 7–9 discuss various barriers in implementing the agenda for reforms. Finally, chapters 10–13 cover various possible solutions to address urban mobility and air quality issues with a focus on Delhi. Although the focus of the book remains on Delhi, the various aspects of urban mobility discussed are typical for most of the major Indian cities and therefore, provide lessons that can be imitated in other Indian cities.

The first chapter begins with a punch line that 'out of 130 cities monitored for PM₁₀ in 2008, about 83 per cent have exceeded the new annual average standard', which clearly spells out the current state of air quality in Indian cities. It also highlights that many smaller towns like Ghaziabad, Raipur, Gobindgarh, etc. are now topping the list of most polluted cities. The chapter presents detailed statistics on the level of various pollutants in different mega and smaller Indian cities. It also presents pollution levels in different areas of Delhi. The chapter concludes with an emphasis on better monitoring systems to continuously check the rising trends of various pollutants. The second chapter presents the new stringent ambient air quality standards that are in place now. It discusses the salient features of the new standards in comparison to the older ones and highlights that the new standards are uniform across different land-use classes, unlike the older standards that were different for different land-use classes. The chapter also highlights a few limitations of the new standards.

The third chapter deals with the health implications of degrading air quality in urban areas. It highlights that India needs comprehensive health assessment studies to understand the magnitude of the problem, and to make responsive and dynamic regulations to reduce health risks. The chapter also points out that the poor are at higher health risk because of poor urban air quality compared to the rich in urban areas. Chapter 4 gives an account of the state of congestion in Delhi. It points out that Delhi adds 1100 new

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vehicles everyday to its existing fleet, whereas the public transport experienced reduction in mode share from 60% to 43% during 2000–2008. The chapter concludes with preliminary points on discouraging the usage of cars.

The fifth chapter points out that the effect of first-generation reforms in Delhi like introduction of CNG, and improving air quality is already fading away and there is urgent need to implement second-generation reforms to maintain the gains achieved through the first level of reforms. In conclusion, the chapter presents what Delhi needs to do to address the mobility challenge. However, measures like procurement of buses may remain ineffective if not complemented by scientific route and schedule rationalization of bus services. Chapter 6 presents the agenda for reform to address congestion as well as pollution, and highlights the various reforms that have been introduced under the Jawaharlal Nehru National Urban Renewal Mission.

The seventh chapter discusses the barriers in procuring more high-quality buses at lower cost and the limitations of bus manufacturing companies in India to deliver according to the rising demand. The chapter points out that the non-uniformity of bus specifications in different cities leads to quoting of higher prices by bus manufacturers. It also highlights the importance of standardizing the buses in different Indian cities. Chapter 8 discusses the cost barrier in improving the public transport systems in Indian cities. It suggests various ways of reviewing the cost and revenues to make the buses more affordable for purchase. The ninth chapter presents the barrier of taxation on buses and highlights an important point that the current taxation policy of the governments with respect to buses is contradictory to the very principle of sustainable mobility. The fact that greater the number of passengers carried, higher the tax, totally contradicts the argument of encouraging space-efficient modes like buses, which carry more number of people per unit of space. The chapter concludes that the taxation policy should be rationalized and should be heavy on private vehicles rather than public transport.

Chapter 10 highlights creating dedicated funds to make public transport affordable. It also presents various fiscal reforms to fund public transport like reducing taxes that reduce the capital cost

of buses, introducing congestion charging, and parking policy aimed at discouraging usage of private vehicles. The eleventh chapter summarizes the fiscal reforms attempted in other Indian cities like Bangalore, Kolkata and Chennai, and provides learning lessons for Delhi. Chapter 12 is dedicated to various parking policies that can lead to the promotion of public transport and non-motorized transport. The concluding chapter (thirteenth) of the book rightly focuses on walking and provides a plethora of measures to make Indian cities walkable.

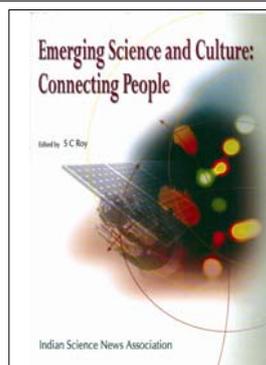
The book has many positive points. It presents good statistics about mobility and air quality issues in Indian cities, in particular Delhi, which will be useful for researchers, practitioners, bureaucrats, policy makers and politicians. Most importantly, it takes a comprehensive and unbiased view on the whole issue of mobility and air quality. On the negative side, the book is primarily focused on

Delhi and does not cover the scenario comprehensively for other Indian cities. Another aspect is that it is heavily number-centric and statistics-based; in other words, the description of methodological approaches and modelling behind various trends and figures, and suggested measures is minimal or often missing in the book. This makes it unattractive for students and inappropriate to be used as a textbook.

Overall, the authors' effort in touching the subject through this book is commendable. It will provide the right direction for many such books to be written in future, focusing on more Indian cities.

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Emerging Science and Culture: Connecting People. S. C. Roy (ed.). Indian Science News Association, 92, APC Road, Kolkata 700 009. 2010. xvii + 246 pp. Price: Rs 300.

The Indian Science News Association was formed in 1935 due to the efforts of Meghnad Saha and P. C. Ray. The journal *Science and Culture* also started in the same year, and as the name suggests, has touched upon issues of science and culture since then. To celebrate the platinum jubilee

of both the Association and the journal, the editor of *Science and Culture*, S. C. Roy, has compiled a collection of articles. This book indeed connects to a lot of people through the wide range of topics that would engage readers from as diverse fields as energy, communication, science and technology, and history and culture.

The section on energy is an account of depleting fossil fuels and the pressing need for green energy sources. Srikumar Banerjee has written about the peaceful uses of nuclear energy and compared the situation in India with that in other countries. In the same section there are articles on thermal and solar power. M. S. Swaminathan writes about Norman Borlaug, father of the Green Revolution in India. Another interesting read is Ashok Sahní's essay on dinosaur nesting sites of India. His article is as fascinating as his talks on dinosaurs.

G. Padmanaban has traced the history of molecular biology. At the end, he writes: 'No other branch of science has influenced the scope of scientific research as molecular biology has done. . . In fact Biology has become too serious for biologists!' The last essay is about the country's biggest public library, the National Library of India in Kolkata. With the digitization of information, the need to review the services of this library has been expressed. Here I can only repeat a question raised in an editorial in this journal, 'Will the traditional library eventually become extinct?' I cannot answer, but I hope not, as I would prefer reading a book like the one under review in a traditional library.

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