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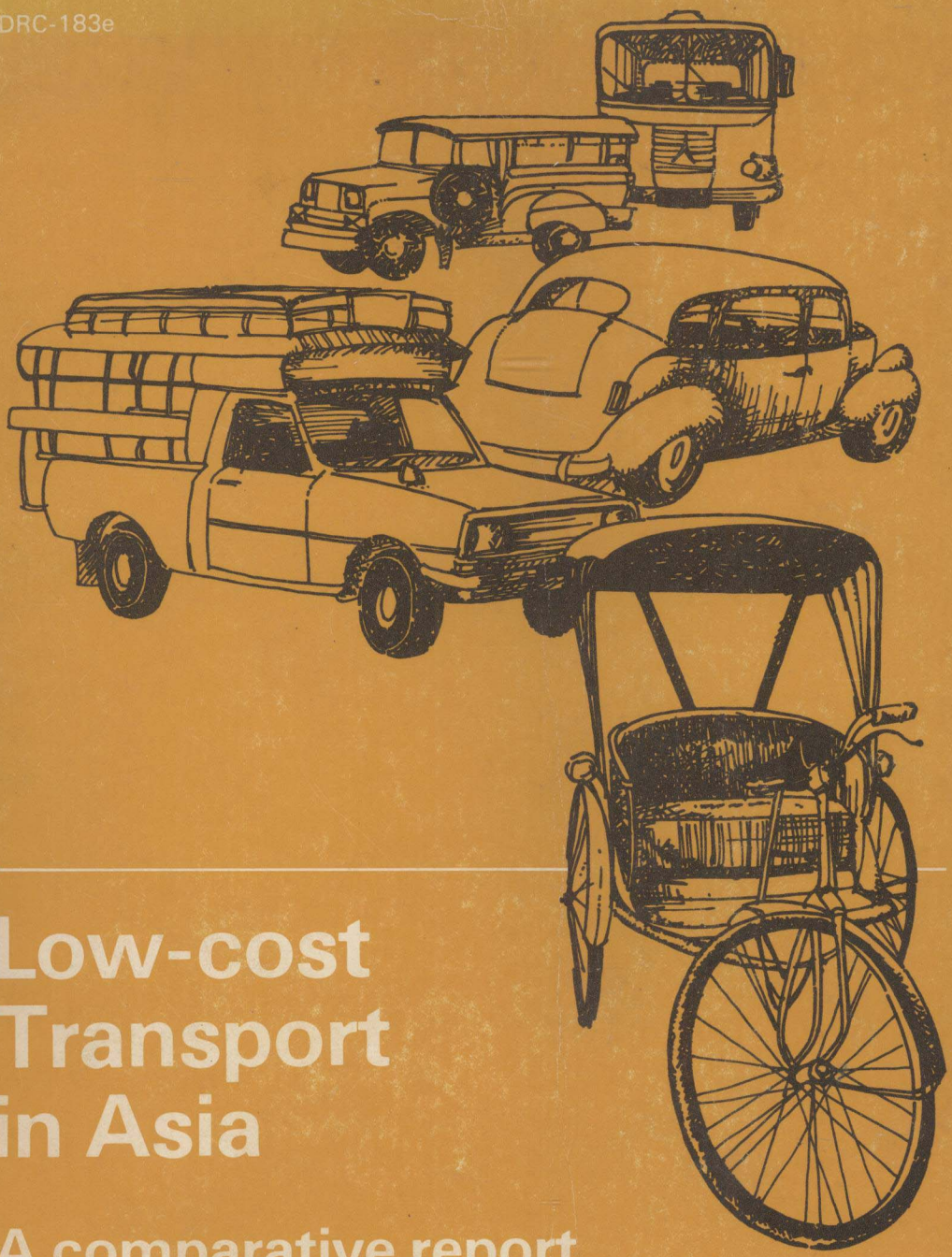

Low-cost Transport in Asia

A comparative report on five cities

Romeo B. Ocampo

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LOW-COST TRANSPORT IN ASIA

A Comparative Report on Five Cities

Romeo B. Ocampo

Résumé

L'étude porte sur les moyens de transport en commun traditionnels et d'origine étrangère dans cinq villes asiatiques : le becak à Bandung et à Jogjakarta en Indonésie, le jeepney dans le Manille métropolitain aux Philippines, le silor à Chiang-mai en Thaïlande et le dolmus et le minibus à Istanbul en Turquie. Le becak est un tricycle à pédales, tandis que les autres moyens de transport sont des véhicules motorisés inspirés de véhicules étrangers.

Ces moyens de transport dits à coût modique (TCM) comblent une lacune dans les équipements de transport et assurent une part substantielle du transport urbain. Cependant, ils ont fini par être jugés peu économiques, difficiles à réglementer et dangereux ; pas nécessairement modiques au plan des tarifs, des investissements et des coûts d'exploitation et assez peu rentables pour les propriétaires et les conducteurs des véhicules. Les autorités ont donc adopté des mesures sévères pour les restreindre ou les interdire dans les plus grandes villes.

Les TCM présentent néanmois des aspects positifs : ils assurent un service qui répond à la demande et qui peut modifier ses itinéraires selon les besoins, desservir de vastes secteurs et divers types de voyageurs et s'adapter aux changements des conditions des transports; ils pourraient compléter les moyens de transport modernes au lieu d'être en concurrence avec eux et ils offrent un secteur informel d'emploi aux pauvres des villes.

Les recommandations obtenues des fonctionnaires des pays en question ou proposées par certaines équipes de recherche reconnaissent l'importance des TCM et suggèrent de les améliorer au lieu de les éliminer. Au nombre des recommandations faites, il y a l'organisation de coopératives de TCM, l'intégration des TCM à des systèmes de transport plus importants et la sélection et la formation des conducteurs.

Resumen

Se investigaron modos de transporte tradicionales e indigenizados en cinco ciudades asiáticas: el becak en Bandung y Yogyakarta, Indonesia, el jeepney en el área metropolitana de Manila, Filipinas, el silor en Chiang Mai, Tailandia, y el dolmus y el minibus en Istambul, Turquía. El becak es un triciclo a pedal, mientras que los otros son modos de transporte motorizados adaptados de vehículos extranjeros.

Estos así llamados modos de transporte de bajo costo (MTBC) responden a la falta de adecuadas facilidades de transporte y forman una parte sustancial del transporte urbano. Sin embargo se les ha llegado a considerar como poco económicos, desordenados y peligrosos, no necesariamente de bajo costo en cuanto a tarifas, costos de capital y de operación, y generando solo rentas modestas a sus propietarios y operadores. Así pues, las autoridades han propuesto o adoptado medidas severas para restringirlos o eliminarlos de las ciudades más grandes.

Pero los MTBCs también tienen características positivas. Estos proveen un servicio que responde a la demanda, es de rutas flexibles, cubre una amplia gama de rutas y usuarios, y puede adaptarse a las condiciones del momento. Por lo tanto estos podrían completar más bien que competir con los modos de transporte modernos. Además, proveen una fuente de trabajo, basada en un sector informal, así como de rentas a los pobres en las ciudades.

Las recomendaciones obtenidas de algunos oficiales, o propuestas por algunos equipos de investigación, reconocen la importancia de los MTBCs y sugieren que en vez de eliminarlos su papel podría mejorarse. Entre las recomendaciones propuestas están : la organización de cooperativas de MTBCs, la integración de los MTBCs en un sistema de transporte más amplio, y la selección y adiestramiento de los operadores de MTBCs.

Contents

Foreword

Urban transport is a vital function in the daily life of any city. Various transport modes move people and goods, and give rise to forever changing patterns of activities in a city. In cities of the industrially advanced countries, most people depend on public transport and the private automobile for mobility. In cities of the developing world, however, generally lower standards of living, high population densities, and diversified cultural milieux have together provided a fertile ground for a bewildering array of transport modes bridging the gap between the public bus and the private automobile. Variously called para transit, or low-cost or intermediate transport, these transport modes are closely associated with the lower-income strata of the population. They provide many jobs and a much needed service to a wide cross-section of the population.

Despite the obvious importance of low-cost transport to most Asian cities, there was a dearth of information upon which informed policy could be formulated. To better understand the dynamics, economics, and politics of urban life, four countries (Indonesia, the Philippines, Thailand, and Turkey) mounted in 1975 a study of such transport modes in five cities (Bandung, Yogyakarta, Chiang Mai, Manila, and Istanbul) with financial support from the International Development Research Centre. In the course of the research, the investigators met in Manila, Yogyakarta, and Istanbul and found, through intensive discussions among themselves and with policymakers and through field reconnaissance, that transport in the five cities had much in common notwithstanding the different societal contexts. All the studies have served to focus public attention and discussion on a subject that was previously characterized by a body of speculative opinion but little well tested data.

Professor Romeo Ocampo, of the College of Public Administration, University of the Philippines, was appointed the coordinator of the network project from the start. He was very much a part of the project from start to finish and attended all the project meetings. The present volume represents Professor Ocampo's efforts to weave the different country studies into a synthesized whole. In this task, he draws on other pertinent material, where appropriate, to strengthen the comparative perspective. The end product is a succinct overview of the main findings of the project consistent with the comparative core. For detailed results in each city, especially with respect to local political and planning issues, the reader should consult the country reports.

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Acknowledgments

This report is based on the efforts of the low-cost transport study teams in Bandung, Yogyakarta, Chiang Mai, Istanbul, and Manila. I thank them for allowing me to draw freely from their reports, for their courtesies during our working meetings, and for their assistance afterward.

I am also indebted to the following staff members of the Social Sciences Division of the International Development Research Centre of Canada for their assistance and patience: Dr Aprodicio A. Laquian, Associate Director of the Division at the time of the study; Dr Yue-man Yeung, Senior Program Officer; and Dr Thomas P. Walsh, Program Officer.

Various members of the staff of the College of Public Administration helped me in producing this report. Aylyn S. Sanchez prepared drafts of extensive sections of the report. Mrs Ma Estrella M. Ocampo prepared the final typescript and coordinated its production. Research and administrative assistance was also supplied by the following: Rebecca P. Albano, Ma Esther E. Maglente, Guillermo Bangoy, Rodolfo Respicio, Jose Giron, Jr., Severo Casem, and German Montesa.

I must also thank Dr David W. Steedman, Director of the IDRC's Social Sciences Division, for his forbearance in waiting for this report. Patience in Ottawa was matched only by concerned understanding in Manila: for this I have Dean Raul P. de Guzman to thank.

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1 Research Issues, Objectives, and Methods

This is a comparative report on the results of five studies of low-cost transport (LCT) systems conducted during 1976–1977 in selected cities in Indonesia, the Philippines, Thailand, and Turkey. The studies, which were based mainly on sample surveys, were undertaken by research teams based in universities in these countries, with the financial and technical assistance of the International Development Research Centre (IDRC) of Canada.

The present report draws primarily on the main reports (listed below) of the five teams. The teams were headed by: Budhy Tjahjati S. Soegijoko at the Institute of Technology in Bandung, Indonesia; Sartono Kartodirdjo at the Institute of Rural and Regional Studies (IRRS), University of Gadjah Mada in Yogyakarta, Indonesia; Telesforo W. Luna, Jr., at the Pamantasan ng Lungsod ng Maynila in Metro Manila, Philippines; Prasert Bhandhachat at the Social Science Research Centre, Chiang Mai University in Chiang Mai, Thailand; and H. Ibrahim Sanli at the Faculty of Architecture, Technical University of Istanbul in metropolitan Istanbul, Turkey. The teams' main reports (in the same order) are cited as Soegijoko (1981), IRRS (1977a), Luna et al. (1978), Chiang Mai Group (1979), and Sanli (1981), or by the city name.

Chiang Mai Group. 1979. Low cost transportation study: a socio-economic of the samlor and silor drivers in the city of Chiang Mai, Thailand, 1976–78. Chiang Mai, Thailand, Social Science Research Centre, Chiang Mai University. 103 p.

IRRS. 1977a. The becak transportation in Yogyakarta. Yogyakarta, Indonesia, Gadjah Mada University, Institute of Rural and Regional Studies. 143 p.

Luna, Telesforo W., Jr., de la Cruz, Ester B., and Blanco, Ambrosio R. 1978. The jeepney: a low cost transport mode in Metropolitan Manila. Manila, Philippines, Pamantasan ng Lungsod ng Maynila. 79 + 90 + 71 p.

Sanli, H. Ibrahim. 1981. Dolmus-minibus system in Istanbul : a case study in low-cost transportation. Istanbul, Turkey, Istanbul Teknik Universitesi. 253 p.

Soegijoko, Budhy Tjahjati S. (editor). 1981. Public transportation in Bandung. Bandung, Indonesia, Penerbit ITB. 303 p.

The aim of the present publication is to report the results of all the studies in a comparative perspective. It describes the objectives and methods of the research project and summarizes the research questions, specific methods, and major findings, conclusions, and recommendations of the country studies. Conceived in 1975, and accompanied by periodic regional meetings to review its progress, the research project was designed to have a comparative framework.

The study teams, however, were free to explore aspects of LCTs of special interest in their cities. Thus, as is suggested at appropriate points, comparison is not always possible even on certain common aspects.

Low-cost Transport Modes in Asia

The principal objects of the country studies[1] were selected modes of public transport at the study sites and the groups directly associated or concerned with the following modes: the becaks in Bandung and Yogyakarta, Indonesia; the jeepneys in Metropolitan Manila, Philippines; the silors in Chiang Mai, Thailand; and the dolmus and minibus in Istanbul, Turkey. These and similar modes of transport have been given different names in a growing number of studies in this field: "para-transit," "intermediate transport," "unincorporated sector," etc. (OECD 1977b).[2] Interest in these modes has grown due to their apparent utility and adaptation to their respective settings. Thus, according to the IDRC project description, LCT modes are the usual means of movement among low-income people in most large cities of Asia. These modes have many things in common: cheap fares, low energy requirements, labour-intensive applications, and small area of coverage. They are the results of ingenious technology adaptations by indigenous craftsmen.

The becak is a pedal-powered tricycle that can carry two to three passengers and also goods or luggage.[3] The Philippine jeepney is a locally remodeled jeep holding six to eight passengers; in recent years, the older American-made stock has been replaced rapidly by locally mass-assembled, as well as custom-built, vehicles with larger capacities (up to 14 passengers). The Thai silor (meaning four-wheeled) is a small pickup truck converted to carry 10–12 passengers; intercity silors with larger engines carry about 20 passengers. The Turkish dolmus (literally "full up") is typically a big, vintage, American-made car adapted to carry up to seven passengers, charging either on a per-passenger basis or operating as a taxi. New domestically produced European cars, however, have joined the older brands of dolmus. The minibus in Istanbul is a domestic or foreign-made vehicle with a capacity of 8–10 passengers.

These modes constitute significant though varying proportions of public transport. In Bandung, there were 11 378 becaks in 1975, or 13% of all nonmotorized vehicles (85 794) and 15% of public and private motor vehicles (63 350)[4] in the city. In Yogyakarta, becaks (4296) made up 12% of nonmotorized units (35 814) and 15% of motorized vehicles (24 849) in 1974. They accounted for about 12% of all trips (including walking) per week in 1972. In Chiang Mai, silors (4996) constituted 30% of all motor vehicles in 1974, although only a third of the total number of silors were legally registered as public passenger carriers. Samlors, the Thai equivalent of the Indonesian

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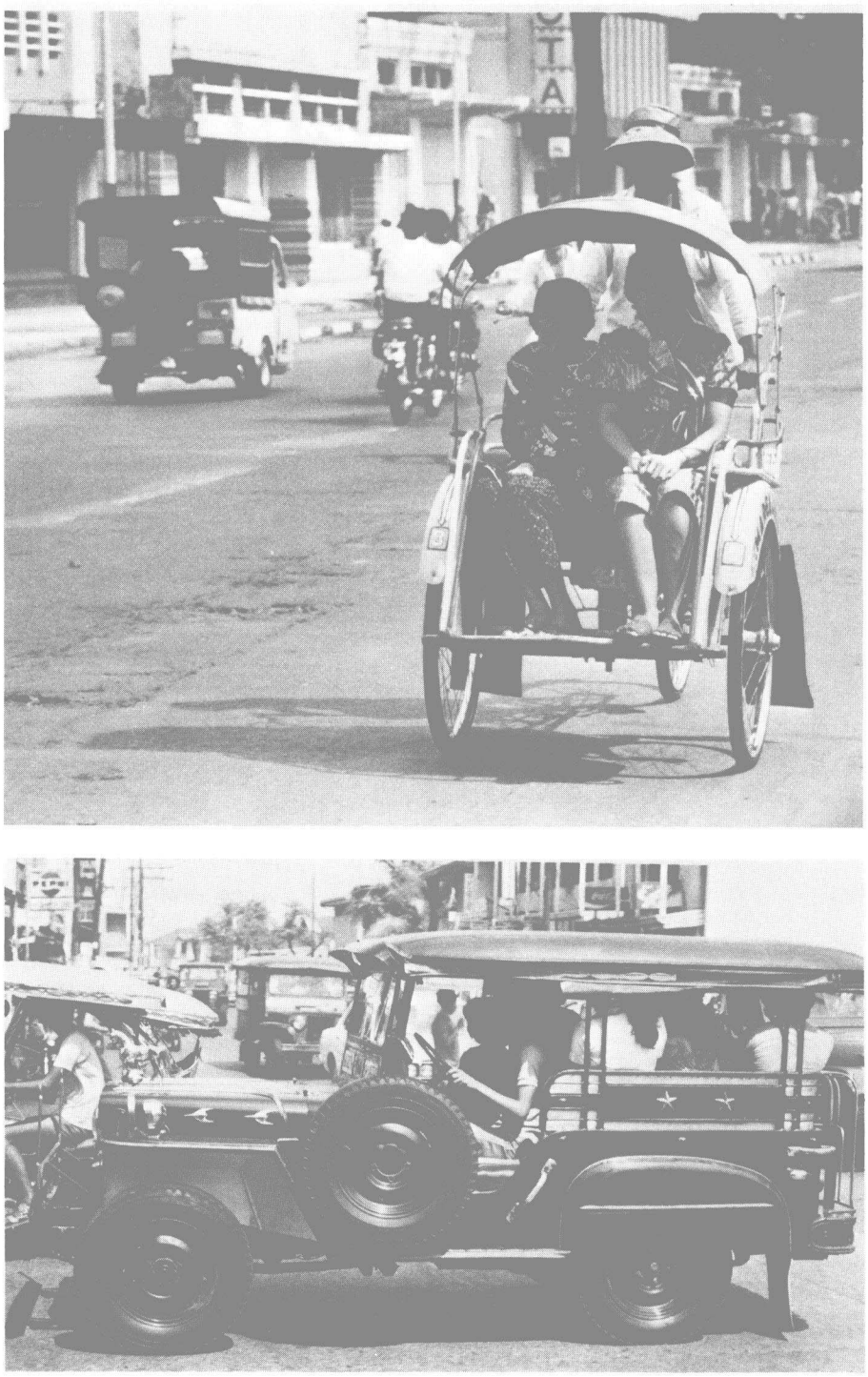
[1]In addition to the main surveys, special studies on related topics were also conducted by the country teams (see Table 1).

[2]For convenience, the term low-cost transport or LCT is used for the modes studied, without judging whether they were in fact "low-cost" in any sense.

[3]Unless otherwise noted, the sources used here are the team reports listed in Chapter 1.

[4]That is, if becaks were counted together with motor vehicles (74 728).



The becak of Yogyakarta and Bandung (top) and the jeepney of Metro Manila (bottom).

The silor of Chiang Mai (top) and the dolmus (middle) and minibus (bottom) of Istanbul.

becaks and Philippine tricycles, were also operative in Chiang Mai at the time of the study when there were an estimated 1000 samlors. Jeepneys in Metro Manila numbered 17 000 at the time of the study and were carrying 40–50% of the riding public. Dolmus (15 918) and minibus (3269) units made up 93% of public transport vehicles in Istanbul in 1976. Together with "midi" and larger buses (310), the dolmus and minibus units carried about 3 135 000 passengers per day or over half the daily total. Since these LCT vehicles operated in different shifts through most of the day, they took up an important share of passenger traffic in these cities.

Issues and Problems

LCTs involve a potentially wide range of policy and empirical issues. Despite the services and advantages that they offered, these modes had been the object of growing public criticism for transport and traffic problems attributed to them. Consequently, a crucial policy issue that motivated the research project was whether LCT modes ought to be banned or phased out in favour of what government authorities considered as more efficient and more modern forms of urban transport in the rapidly growing cities of Asia. The becak had just been banned from the main streets of Jakarta at the start of the study and, in other large Asian cities, similar proposals seemed to be gaining ground due to traffic congestion, physical hazards, uneconomical and often illegal operation, and other social costs that the LCTs were said to cause.

At the same time, appreciation of these modes had been increasing[5] as a relatively cheap and flexible means of mobility for the urban masses, a major source of "informal" employment, particularly for poor migrants to the city, and as an indigenous and potentially capital-saving adaptation of transport technology in the developing countries. Thus, there was a question whether LCT modes were not, on balance, socially beneficial, and should somehow be retained — perhaps with some modifications in their vehicles, their organization and operations, and their roles — and integrated in the urban transport systems that Asian cities were proposing to modernize.

The Bandung study team approached the becak as a "controversial enigma" that urban growth threatened to dispel at its expense. In the larger and faster-growing Indonesian cities, the becak had been viewed as an outmoded, human-powered vehicle too slow and short-distanced for urban traffic, as a major source of traffic snarls and accidents, and as a costly competitor rather than complement to buses. Moreover, becak-driving was viewed as encouraging in-migration, increasing the service burdens of the city, and engaging people in an occupation that was unacceptable from a humanitarian viewpoint. Short of adopting Jakarta's policy of eventually banning the becaks from the city, some Indonesian cities had confined their operation to designated areas, certain hours of the day, or to special lanes or "free-becak zones." However, the Bandung researchers viewed the becak as a spontaneous response to transport needs that retained considerable assets: lower fares, door-to-door service, ability to serve smaller neighbourhoods as well as major

[5]At least on the part of international transport researchers starting to devote attention to LCTs (OECD 1974, 1977a, b).

thoroughfares, and contributing to rural–urban transport of passengers and goods. Moreover, becak-driving was a major employer of unskilled workers, and helped ease the transition of rural migrants into urban life.

Public policy on becaks, therefore, could not be unequivocal. In the light of the controversy surrounding this mode, the Bandung report points out, government authorities faced these questions:

> Should becaks be abolished completely, indiscriminately? Or should becaks be protected, upgraded, and preserved, and be allowed to operate in small cities or in rural areas? Is there any other alternative solution, such as modification of the vehicle's structure, retaining it as an interim solution? If becaks should be abolished from large urban areas, what is the critical city size for banning becaks; how should it be done; what is to be done with the ex-drivers; what alternatives can take the place of the becak as a mode of public transport and as a job opportunity?

While the Bandung report sums up these issues as a conflict between the traditional and modern sectors, its Yogyakarta counterpart views them as a conflict between the roles of the becak as a problematic subsystem of urban transport technology and management, and as an "inseparable" part of the urban socioeconomic system. Among the becak's setbacks was that it had suffered from competition with both modern and other traditional (bicycling or walking) types of mass transport, and from a lag between the increase in motorized traffic and road improvements that had made the becak appear to cause traffic congestion. Due to its simple technology and economy, however, the becak has generated so much employment that its prohibition would have serious social repercussions. The Yogyakarta report notes, however, that the postwar popularity of the becak had also been eroded by "a feeling in certain regions (of Indonesia) of humiliating the becak driver by exploiting his manpower" — or, as the Bandung report puts it, a feeling that the becak involves "exploitation de l'homme par l'homme."

Similar questions faced the researchers in Chiang Mai, Metropolitan Manila, and Istanbul, although here less traditional, motorized vehicles were involved. In Chiang Mai, the becak had its counterpart in the samlor pedicab, but the study focused on the silor,[6] a converted pickup whose increasing numbers were also posing traffic problems and occupational, economic, and social issues for their drivers, users, and the local authorities. Unlike the samlor,[7] the silor continued to gain popularity due to its reasonable fare, flexible routes within the city, and ability to transport goods as well as passengers. The silor compensated for the inadequacy of bus services in Chiang Mai. However, its utility and impact had not been unclouded, or perhaps not fully appreciated, as suggested by the fact that a third of the existing silor units were not officially registered and the local authorities had not seen their way clear to fully legalizing the silor as a public utility vehicle.

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[6]As far as vehicles were concerned. The study included samlor drivers in its sample survey, but only the results for the silor drivers are considered here.

[7]The number of samlors, some of which were motorized, had declined to about 1000 in Chiang Mai, and the report of the Thai team foresees their eventual disappearance from the city due to their limited space for passengers, low revenue, and "hard working conditions" associated with their operation.

The jeepney in Metro Manila was in a similar predicament to the other LCTs. In an area where urban growth and motorization had far outstripped road and traffic improvements, the jeepney was seen by its critics as representing "ruinous competition" in transport organization and traffic behaviour. From the standpoint of more sympathetic observers, however, the jeepney typified a "demand-responsive" and flexible service that buses could hardly replace. At the time of the study, it employed about 34 000 drivers, not to mention many other groups indirectly employed in this sector. Helped along by technological adjustments in jeepney manufacture and by wide publicity as a tourist curiosity, the jeepney was accommodated in the transport system, and the government sometimes seemed more inclined to improve jeepney and bus transport organization rather than phase out the jeepney. However, in Metro Manila, for which monorail and subway modes had been contemplated[8] although perhaps no longer as seriously as before, the jeepney's role, now conceived as a minor one of "feeder" for larger transit modes, was not entirely secure. Its future hinged on prevailing perceptions of its performance and on the question posed by the Manila team: "Is the jeepney an efficient, effective, and responsive mode of transport under existing conditions in the urban area?" Quality of service, traffic management, road development, and urban structure are also implicated in the jeepney's career.

The dolmus–minibus system in Istanbul shared the basic problems of the jeepney and other LCT modes. Judging from the frequent references in the Istanbul report to its "visibility as a problem," this LCT appeared to be even more of a threatened species. Figuring prominently in "traffic anarchy," strikes, and controversy over license plate restrictions, the system generated widespread resentment due to the exploitative operations by its units, especially during peak-demand periods. Their very flexibility — the dolmus could shift to taxi operations and double its fare — brought the "responsiveness," quality, and adequacy of their service into serious question. Thus, public sentiment turned to rail mass transit, a proposition that would, at best, relegate the LCT to a supplementary role. According to the study, however, no evidence supported the implicit assumption that the Istanbul LCT was inefficient, since no serious study had been done before the IDRC-sponsored investigation. Moreover, the system had some organizational strength and saving graces as a major transport service, employer, and technological adaptation. Policy should not be too easily swayed by current popular sentiments, because it remained a question "whether the [dolmus–minibus] system could be eliminated at all," whether it should not rather be accommodated and integrated into the larger system, and, in this case, how and to what extent it should be limited or encouraged.

Research Objectives

The research project was thus motivated by a wide range of policy and empirical issues about LCT modes. However, the project as a whole and the

[8]MMetroplan, a major report by consultants on Metro Manila's transport, land use, and development planning project, had suggested light rail instead of monorail and heavy rapid transit as the more feasible line-haul alternatives for Metro Manila (see Freeman Fox and Associates 1976:13–14).

country studies in particular were not equally concerned with all of the questions involved, and did not intend to pursue their wider ramifications. Rather, the studies were aimed at improving the state of knowledge of the LCTs themselves in their respective contexts, since there was very little information about them at the start of the research.[9] At the same time, the research teams hoped to generate policy recommendations so that the research results could be used to help solve transport problems. Although most of the teams reported the recommendations of various groups concerned with LCTs and transport, only the Istanbul and Chiang Mai teams included their own recommendations in their main reports.

There were other incidental project objectives. As stated in the IDRC project document, the aims of the investigation were:

- To gather and analyze information on the low-cost transport modes in their respective cities so as to understand better how these modes fit into the total transport system;

- To gather and analyze information on the operators of low-cost transport vehicles (owners and drivers) to understand better their economic and social characteristics as well as the roles they play in the operation of the low-cost transport system;

- To disseminate research results and formulate recommendations on what can be done regarding the role of low-cost transport in the overall transportation system in the city or metropolitan area;

- To contribute to the training of developing-country researchers by involving students and young faculty members in the participating institutions;

- To contribute to policy and program changes on transportation in the cities involved in this study through collaboration among researchers, officials, and planners.

The Bandung study was aimed at evaluating the functions of becaks as a form of transport and as a job opportunity, and thus at providing a basis for assessing their prospects and for making policy recommendations. It was to assess the efficiency of becaks compared to other modes and in terms of their own operations, organization and management, effectiveness in providing mobility, and satisfaction and policy perceptions on the part of the public and the becak drivers themselves. Temporal as well as physical and financial variables were to be used to analyze efficiency. The employment function of becaks would be evaluated in terms of the "economies of their operation" and the occupational aspects of becak-driving. Here the income and expenditures of drivers, their working conditions, entry patterns and related socioeconomic characteristics, and career aspirations would be studied.

Similarly, the Yogyakarta study examined two major aspects, i.e., becak transport "as a subsystem of an overall urban transportation system [that] poses a major problem in transportation technology and management" and "as a socio-economic problem in urban society since it has become an inseparable

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[9]As noted, however, researchers and transport planners had begun to devote increasing attention to LCTs at the time of the IDRC project. Robert Textor's previous work (1961) on Chiang Mai's samlors, for example, apparently served as an inspiration for more systematic inquiry into LCTs.

part of [the] urban socio-economic system." It would look into the role and share of becaks in total transport activity, ascertain levels of demand for and supply of becak transport, and determine the current and future economic viability of this mode. Approaching the job aspects of becak-driving from more varied perspectives, the study was intended to draw up a demographic, sociological, and psychological profile of the becak driver as well as his economic and occupational conditions and experiences. It would also inquire into his relations with becak users and owners and observe his family and social life.

The Chiang Mai study likewise sought to gather data for a socioeconomic profile of silor and samlor drivers, to identify social and economic problems associated with their working conditions and transport systems, and to identify alternative strategies for future study to improve the transportation system and the relationship of drivers and government. The study attempted to describe the social and economic characteristics of the drivers, particularly those related to their occupation. To some extent, it was also concerned with traffic policy and management, vehicle licensing, user and official attitudes towards silor and samlor drivers, and "general characteristics of drivers and passengers and government, seeing how those relate to their values and attitudes...." Part of the research effort was devoted to observing traffic hours, routes, and flows. On the basis of its findings, the research team aimed at developing and recommending strategies for improving the transport system and the drivers' working conditions and welfare.

"This study," the Metro Manila report simply states, "seeks to find out how the jeepney transport system works. How it was viewed as part of the network of mass transport facilities ... [and whether the jeepney] ... is an efficient, effective and responsive mode of transport...." Although traffic and transport problems in Metropolitan Manila could be attributed to more basic factors, the study conducted there more specifically sought to investigate the economic and social aspects of the jeepney system, particularly the drivers and operators; to ascertain levels of jeepney demand and supply; and to analyze problems of the jeepney and the public transport system from the viewpoint of government traffic officers and transport officials as well as its drivers, owners, and "commuters."

In Istanbul, the research was intended to meet the need for better understanding of the dolmus-minibus system by filling an important gap in existing knowledge as the basis of relevant policies as well as to improve knowledge for its own sake. Previous studies were lacking, particularly in "an integrated approach to the understanding of the system as a socioeconomic phenomenon as well as an important means of public transport" (Istanbul Group 1976c). The more specific objectives set by the Istanbul team for its study were to describe the LCT system in terms of its various physical, operational, and socioeconomic aspects, to examine possible "courses of change" and their effects on the dolmus-minibus and other modes, to evaluate the LCT system in its local context and in comparison with LCTs in other countries, and to afford a better appreciation of the dolmus-minibus system's problems and potentialities, its weak and strong points. In addition, the team aimed at identifying ways of collaborating with other similar research efforts, and to continue and institutionalize urban transport research activities in Turkey.