



BULLETIN

FACILITATION OF TRANSPORT AND TRADE IN LATIN AMERICA AND THE CARIBBEAN

Transport, the poor and moving towards low-carbon societies

Introduction

The discussion of poverty and transport globally, and within Latin America and the Caribbean with its “high degree of residential segregation of contemporary Latin American cities”,¹ must increasingly take place within the context of the social sustainability of urban transport and urban mobility. Issues of environmental sustainability have forced a policy discourse on the reduction of emissions, which opens up questions of what levels of mobility and what patterns of mobility are desirable. Simply increasing the capacity of mobility systems to accommodate journeys is no longer the declared dominant policy goal. Issues of transport equity, aligned to other dimensions of social equity, must necessarily be identified and dealt with within the sustainability framework. Consequently, transport and poverty become significant policy dimensions of any comprehensive sustainability discourse.

“...around half of the population in cities (approximately 800 million people) are marginalised, living in informal settlement districts on the outskirts of cities or also in inner-city poor districts (slums, favelas, Pueblos jóvenes, etc.) and as homeless people (pavement dwellers), often in inhumane conditions.” (Kalthaefer, R.M., 2002).

Not only has the proportion of people living in extreme poverty not fallen over the last decade, the number of marginalized people in urban and metropolitan areas has actually risen. This group of people lacks access to essential services, transport being one of them. The constraint of access to transport services acts particularly severely on the periphery of urban and metropolitan regions as it significantly increases the time needed to access

It is timely to rethink the urban development paradigm in terms of the constraints on mobility as a solution to spatial inequities and inequalities. This *FAL Bulletin* discusses the challenges involved in creating equality in urban mobility and the need to reach towards a social sustainability framework, as existing policies often accentuate current inequities and inequalities in accessibility. Lack of access to mobility has wide-ranging effects across social groups, gender and particularly the urban poor.

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Introduction



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¹ See Roberts and Wilson (eds.) (2009) for an analysis based upon contemporary geo-coded data.

other essential services (e.g. health and education), as well as sources of income. It may also be argued that this impacts women especially and at least partially excludes the poor, in a gendered fashion, from societal and political life in their metropolitan and urban areas.

I. Transport and the poor

Neglecting the poor within the traditional transport discourse weakens the evidential and policy practice base for good contemporary social sustainability practice in respect of mobility. The literature is scant, the best practices few, the databases absent—but the scale of the problem of meeting the mobility needs of the poor, as the above citation indicates, is all too evident. It is time to develop methodologies and policy practices which better serve the poor in respect of access to urban services within a framework that does not prioritize mobility over local accessibility and that incorporates the new forms of local service delivery made possible by new information and communication technologies.²

Within the internationally defined policy fields of transport and poverty reduction, it has been universally recognized that the poor, and particularly women, have not been well served in modern times by formal transport provision, transport organization and transport planning processes.³ Modern land value dynamics, coupled with contemporary distributions of civic power that disadvantage the poor, have resulted in the poor being pushed to the periphery of modern urban life—the ideal of the integrated city has given way to processes of “splintering urbanism”.⁴

In Latin America:

...marked shortages have worsened the exclusion of more than 200 million poor people...resulting in metropolitan areas that are characterized by: inadequate and low-grade equipment and service networks; high urban violence levels with significant negative impact on the right to life of the population; market spatial segregation and housing shortages, particularly among poorer segments that often squat in outlying areas with no infrastructure or at more central sites with restricted access (slums) that develop into neighbourhoods that are hard to control, with limited connections to transportation system (Portugal et al., 2010).

Poverty has a distinctive geography; and that geography has not been well served either by the absence of

appropriate *localized* provision of pro-poor services or by the absence of pro-poor *compensating* mobility systems. Poverty has largely been left unaddressed in respect of accessibility and mobility. Where essential facilities and services are not available to the poor locally, they must either travel to these resources or be deprived of them—mobility becomes *enforced* upon the poor at financial and time costs, with the attendant complex household dynamics of resource prioritization that such financial and time budgeting require.⁵ These household dynamics impact particularly on the financially weaker actors, especially women.

Travelling to access essential facilities has consequences for household organization and, in turn, household organization has consequences for undertaking urban mobility⁶—patterns of gender differentiation in travel organization and in the gendered transaction costs associated with urban mobility are now apparent in a wide range of contexts and locations.⁷ Evidence from Peru indicates poor local services and poor mobility options have a disproportionate impact upon women.⁸ Within the social sustainability framework, the policy option of providing services to the poor within their communities rather than requiring the mass mobility of the poor to obtain these services deserves significant attention.

Developing accessibility by providing local services and facilities rather than developing mobility systems which access distant provision better meets sustainability goals—and not surprisingly, there are now examples of such local service provision being classified within the transport remit of international agencies such as the World Bank.⁹

By way of example, the “Inner Cities for the Poor” project in Trench Town, Jamaica, focuses on bringing services to low-income neighbourhoods rather than on creating access to those services elsewhere.

Mobility planning within this perspective explores the mechanisms that can be used to reduce the need for journeys rather than simply accommodating them. Ideally, reducing or removing the need for journeys—most particularly lengthy and expensive journeys—becomes part of an integrated land use/ transport strategy, pro-poor strategy. Densification of traditional urban areas in accordance with transport infrastructure development

² Galperin, H. and J. Mariscal (2007).

³ See T.N. Mitiku (2009) and Grieco, M.S. (2011), *Access to urban mobility*, Draft chapter for UNHabitat, 2011 (Mimeo).

⁴ Graham, Stephen and Simon Marvin (2001).

⁵ Kalthier, R.M. (2002).

⁶ Fouracre, P.R., Sohail, M. and Cavill, S., (2006).

⁷ See Asian Development Bank (2010) and Booth, Hanmer and Lovell (2000).

⁸ Vargas Valente, Rosana (2010).

⁹ See <http://go.worldbank.org/PQMUM10UW0>.

(for example, as recently enhanced in Santiago, Chile) is one contribution towards these integrated strategies.

Harnessing new information and communications technology to deliver local services within a pro-poor model clearly removes some of the historical barriers which operated against local provision —the miniaturization of technologies and their consequent mobility reduce the historical needs for centralization to reduce costs and permit ready connection to a range of health, education and employment services when properly configured.¹⁰ The use of new information technologies can also heighten the transparency of civic financial processes¹¹ so that the “share” of resources allocated to the poor becomes more visible and such transparency can be achieved within any process of infrastructure development not simply as an end of project account or balance sheet.

II. Urban mobility and the poor

Urban mobility systems are not routinely designed with the poor as a priority. At best, they are designed with an awareness of issues of transport equity such as affordability¹² or minimal levels of access, but not from the perspective of meeting the routine needs of the poor. Nor has an adequate preliminary exercise been undertaken to build the robust, comparative international urban databases that are necessary to the systematic development of such an approach. The urban mobility observatory of the Development Bank of Latin America (CAF) is an interesting approach, but it has not been able to provide continued monitoring and much of its latest available data is from as far back as 2007.

There is increasing recognition of the need to compensate for such international and regional data deficiencies by making use of the new information technologies in participatory processes within which the poor themselves play a part in identifying their own infrastructure resource and transport needs.¹³ Participatory planning is a critical element of good social sustainability practice which has not so far received adequate attention or enactment in the planning of urban mobility and urban accessibility.¹⁴

Both social equity considerations and the vitality and viability

of community/ communities receive attention within the international discussions and various definitions of social sustainability.¹⁵ Many of these focus upon issues of social exclusion¹⁶ and social capital¹⁷ development and upon the active participation of the end-users, residents or citizens in planning, governance and government. Recognition is growing of the negative consequences of failing to include the resource-deprived more fully within society in relation to the governance challenge this omission produces: the Latin American discussion of “fractured societies” and the link with drug wars and other forms of illegality is of considerable contemporary significance.¹⁸ In this discourse, the implications of the geographical segregation of communities in poverty for accentuated violence is understood.

There is much rhetoric about developing planning partnerships with local residents and communities in respect of the urban development agenda, but it is still far from common practice to systematically include the most disadvantaged in the current allocation of urban resources.¹⁹ In addition, participatory processes to include the disadvantaged in formulating global agreements and planning are still far from being well established at the level of protocol.

The definition of stakeholders in social sustainability has been too narrowly defined and the expert-led discourse has underutilized the potential of the new information and communication technologies for greater participatory inclusion of the previously excluded. Both current social inequities and the desire to minimize future social inequities have to be addressed in the representation of interests within a social sustainability framework: and there are real discussions to be had about where the balance of attention should be placed.

The recognition that the world’s poor face a basic infrastructure deficit today should lead to actions, evaluations and assessments of how to address this deficiency as part of a global social sustainability framework. Within current global planning on the environment, however, it is simply acknowledged and left outside the planning framework.²⁰ The focus continues to be the costs, processes and mechanisms for environmental adaptation in the developed countries without commensurate attention even to the provision of

¹⁰ Kaplan, W.A. (2006).

¹¹ See <http://www.chfinternational.org/node/36582> on placing resource mapping in the hands of the poor. See also http://siteresources.worldbank.org/INTPGI/Resources/342674-1092157888460/493860-1192739384563/More_Than_a_Pretty_Picture_ebook.pdf for international agency on-line poverty mapping.

¹² See Carruthers, R. Dick, M. and Saurkar A. (2005) and Gómez-Lobo Echenique, A. (2007).

¹³ See http://siteresources.worldbank.org/INTLAC/Resources/257803-1269390034020/En_Breve_166_Printable.pdf for information on mobile telephony methodology used by World Bank with poor communities in Guatemala to develop data bases that inform projects.

¹⁴ Gannon, Colin and Zhi Liu (1997).

¹⁵ Dempsey, Nicola et al (2009).

¹⁶ Social Exclusion Unit (2003).

¹⁷ http://seri.academia.edu/JoachimHSpangenberg/Papers/321112/Social_Sustainability_A_review.

¹⁸ Koonings, K. and D. Kruijt (2007).

¹⁹ Vasconcellos, E. A. (2000).

²⁰ UN Habitat (2011).



basic sanitation in the urbanizing global south. Some of the World Bank's recent projects in Latin America show a shift away from this approach, but not on a sufficient scale to correct the general position.

Typically, in terms of mass public transport systems, the poor are at best provided with highly constrained access to transport arrangements designed for other, more resourced market segments. These constraints exist as a consequence of a number of interacting factors: issues of non-affordability of fares (especially with global policy pressures to reduce public transport subsidies), the routing of public transport services without proper regard to the geography of poverty and the inadequate frequency of feeder services which are the link for the poor to the main trunk of urban transport provision all play their part.

The peripheral position of the poor in respect of key urban facilities and services and the lack of directly routed urban transport services to compensate for these deficiencies, impose complex geographies of mobility upon them. As a result, interchange, delay, insufficient feeder vehicle frequencies²¹ and overcrowding become the standard public travel experience of the poor.

Within policy literatures, these relationships are buried in the observation that the poor trade off time against cost in the travel environment: the planning literature all too frequently takes the naïve view that the poor have time in abundance. The anthropological studies of time poverty have not been well integrated into the transport and mobility literatures, not least in respect of gender.

Low incomes force the poor to compensate for restricted mobility options with longer journey times and greater use of the non-motorized transport modes, such as walking and cycling. These modes have typically received less policy attention and minimal investment in urban transport policy and development. Yet, it can be readily claimed that these are modes and policy areas ripe for investment in terms of developing pro-poor infrastructure. Building urban pro-poor infrastructure to accommodate greater use of these modes will assist in the movement towards low-carbon societies.

For such infrastructure to be pro-poor, it has to be located where the poor have direct access to it and must be constructed so as to provide useful patterns of linkage. Whereas the traditional approach had tended to view non-motorized modes as anachronistic and a phenomenon that should be removed from the contemporary urban environment, the pendulum has now swung to integrating non-motorized transport options in urban transport strategies and discussions of cycling and "walkable cities".²² A recent contract between the World Bank and the city of Rio de Janeiro brings non-motorized transport—cycling—into focus coupled with, notably, Bus Rapid Transit and basic sanitation provision. The contract has been established in the context of reducing carbon emissions (see box 1).

Box 1
DEFINITION AND EXPLANATION OF A COLD CHAIN
Press release: City of Rio - Ground-Breaking Program for Low Carbon City Development
June 18, 2012

"Rio de Janeiro's target is to secure 2.3 million metric tons of emission reductions through 2020, which is the equivalent of 20 percent of the city's 2005 emissions. The city aims to achieve this target through a variety of projects and policies across a number of urban sectors. Some of these are already underway, such as doubling the city's network of bike paths, the opening of the first of four exclusive Bus Rapid Transit (BRT) lanes, and the universalization of basic sanitation in *Zona Oeste*, the city's most populous area. The Rio Low Carbon City Development Program implements a framework of data collection and analysis to promote low carbon projects, as well as quantify and validate emission reductions over time. Emission reductions from the Program may be either accounted towards Rio's targets or sold as carbon offsets. The Program includes two initial pilot projects in the areas of urban forestry and non-motorized urban transport (bicycling), and it will expand to other sectors over time." See <http://www.worldbank.org/en/news/2012/06/18/rio-world-bank-launch-ground-breaking-program-low-carbon-city-development>.

²¹ Witter, R. (2010).

²² See Forsyth and Southworth, (2008); and see also Southworth, M. (2005) "Designing the walkable city", *Journal of Urban Planning and Development* 131(4): 246–257.

The poor are often found at the geographical periphery of the city but sometimes inhabit the hills which overlook the city or inner city areas which are traversed by transport but provide limited local access to the urban system. The different urban geographies of poverty require pro-poor service and mobility provision which specifically match them—one tool for achieving such a match is “poverty mapping” advocated and exemplified by the World Bank.²³

Review of the Latin American and Caribbean literature on transport and poverty shows that the tool of poverty mapping in the design of transport projects and transport systems is underplayed.

A very clear and innovative example of pro-poor infrastructure planning is to be found in recent developments in Rio de Janeiro, Brazil, where gondola infrastructures are being developed to link the city's hillside *favelas* with the mainstream city centre opportunities below.²⁴ This innovative approach to linking low-income communities to employment and other opportunities through high profile transport technologies has benefits beyond those of simple mobility. The visibility of the entitlement of low income communities to civic inclusion is enhanced and such enhancement is a deliberate part of the transport structure design (see box 2).

Box 2
RIO DE JANEIRO: THE GONDOLA OPENS UP THE FAVELA

In anticipation of the 2014 World Cup and the 2016 Summer Olympics, Rio de Janeiro is undertaking massive construction projects. Some of these are limited in scope to the sporting events, but others are seeking to redistribute the expected growth. The Teleferico do Alemão, a gondola system linking the Complexo do Alemão to the rest of the city, falls into the second category. This smart and cost-effective transportation solution is part of the Growth Acceleration Plan initiated by the government of Luis Ignacio “Lula” da Silva. Flying over the uneven surface of the favela, the gondolas provide the communities in question with a real transit solution. They are also meant to support the residents' efforts to build a better future after the police seizure of the complex to fight drug gangs. Providing better access to the city, the gondola systems ensure social mixing but also easier and faster access to leisure and job opportunities for the poor populations from the north of the city. As the new system connects to the conventional mass transit systems (suburban train) at the Bonsucesso station, it makes the rest of the city much more accessible than before. See <http://sustainablecities.dk/en/city-projects/cases/rio-de-janeiro-the-gondola-opens-up-the-favela>.

The directness of this mobility link has an immediate impact on the accessibility of this location, which can be seen as a highly innovative feature of the development. The direct targeting of a low-income community through this form of transport provision added to its innovativeness and its potential for success. This can readily be viewed as the development of pro-poor infrastructure - the poor are the direct and intended beneficiaries of this transport innovation and geography dictates they capture the whole of the benefit. There should be little leakage of these benefits to other social groups. The development of such matches in Latin America between the needs of the poor and high-grade, short-distance links to urban opportunities and services is to be welcomed.

III. Bus rapid transit and the poor

Somewhat different is the case of Bus Rapid Transit. BRT was also developed in Latin America and its arrival on

the transport scene has been much feted. As a transport option, it has gained many followers, with over 100 BRT systems in existence or being developed in Latin America, Africa and Asia.²⁵ With dedicated busways typically coupled with controlled passenger access portals, it is seen as a mechanism for obtaining mass transit volumes at a much lower cost than conventional metro systems.

In terms of the benefits to the poor, however, it is not clear that the design and operation of BRT systems have integrated sufficient poverty analysis or equity requirements.²⁶ There are real dangers that such systems will traverse areas of urban poverty without providing sufficient access for the poor to utilize the system—because of barriers of either cost or geographical access, owing to the location of the controlled passenger access portals. BRT is not self-evidently a pro-poor infrastructure development.

²³ This can be greatly assisted by new poverty mapping techniques see: <http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/LACEXT/EXTLACREGTOPPOVANA/0,,contentMDK:20795440~pagePK:34004173~piPK:34003707~theSitePK:841175,00.html>.

²⁴ See <http://sustainablecities.dk/en/city-projects/cases/rio-de-janeiro-the-gondola-opens-up-the-favela>.

²⁵ See <http://climatetechwiki.org/technology/brt>.
²⁶ Khanna, Swati (2009).

In a detailed analysis of BRT operation for Ahmedabad, India, Khanna (2009:82) identified the potential for BRT to negatively impact upon the dynamic of establishing transport equity in that city.

In Khanna's study, the higher-income group households come out as clear gainers, with a substantially high proportion of benefits as compared to the economically weaker groups. In addition, inequity in society is expected to increase following BRT implementation. Geographically, the gainers are significantly clustered in the western part of Ahmedabad along the BRT route.

Analysis of the most highly regarded of the BRT systems, that of the Colombian capital, Bogota,²⁷ indicates that the increasing pressure to meet the costs of urban transport systems out of fares paid by users places public transport systems, including BRT, beyond the pockets of the poor. The project documents from the World Bank for the funding and continued funding of this project explicitly state that providing the poor with access to transport is one of the primary goals but the project documents do not provide an account of how the poor have benefited.²⁸

*"The objectives of the Integrated Mass Transit Systems Project for Colombia are to: (i) develop high quality and sustainable Bus Rapid Transit System (BRTS) in participating cities to improve mobility along strategic mass transit corridors; (ii) improve accessibility to public transportation for the poor; and (iii) build greater institutional capacity in the Borrower's public transportation institutions in order to formulate integrated urban transport policies, and to improve urban transport planning and traffic management."*²⁹

Justifying projects at the fundraising stage in terms of their contribution to improving the circumstances of the poor is a long-standing practice which has rarely guaranteed that the poor do indeed benefit—indeed large transport projects have typically further disadvantaged the poor. Auditing their impact on the direct needs of the urban poor is clearly a very underdeveloped area of expertise in respect of BRT and requires greater systematization. There is evidence that such auditing does have a base from which to grow: the exemplary auditing of pro-poor beneficial outcomes in respect of improved

non-motorized transport access can be found within the World Bank Bolivian Urban Infrastructure Project.³⁰

Furthermore, poverty mapping technologies enable transport projects justified in terms of their impact on poverty to demonstrate directly that they have accomplished their goals. Developing systematic poverty auditing for transport projects requires prioritization, not least because the sums involved in large scale mass transit projects make significant demands on local, national and regional resources. The prospect of further splintering urban environments through inadequate routing, insensitive pricing and accentuating stranded mobility as a consequence of inadequate poverty mapping before and after BRT projects is a real one.

In developing BRT, pressures have developed to "rationalize" and remove the fleets of small, informal transport vehicles that historically provided direct access to city centres and services from low-income areas. These vehicles filled a vacuum left by deficiencies in formal transport services to low-income areas in the cities of the developing world. Removing these vehicles from the urban fleet may make for easier traffic flow for the formal transport system and for elite privatized transport options, but carries a social sustainability cost unless adequate alternative links are provided. This seems rarely to be the case.

Removing small, informal transport vehicles from circulation can result in patterns of stranded mobility for the poor. The need to adequately audit these processes where BRT (and other transport projects which seek to remove these vehicles from the system and thus from the access of the poor) is envisaged should be prioritized within a social sustainability framework.

IV. Social sustainability

"Social sustainability" has entered the literature as a partner term to "environmental sustainability". It has been readily linked with "liveability" of cities—reducing carbon emissions makes for more pleasant city living. But it must also engage with the transport and poverty discourse if it is to have merit. The social sustainability concept has been adopted fairly recently by cities, planners³¹ and international agencies and as such the full range of challenges posed by the practice of social sustainability

²⁷ See Bocarejo, J. P. and D. R. Oviedo (2010).

²⁸ See <http://www.worldbank.org/projects/P114325/integrated-mass-transit-systems-second-additional-financing?lang=en>.

²⁹ See <http://www.worldbank.org/projects/P114325/integrated-mass-transit-systems-second-additional-financing?lang=en>.

³⁰ See http://documents.worldbank.org/curated/en/2012/11/16919038/bolivia-bolivia-urban-infrastructure-project-p083979-implementation-status-results-report-sequence-12/http://www-wds.worldbank.org/external/default/WDSContentServer/WDS/CR/2012/11/05/090224b08174ace0/1_0/Rendered/PDF/Bolivia000Boli0Report000Sequence012.pdf.

³¹ For Sustainable Cities Case Studies see: Danish Architecture Centre. Sustainable Cities, <http://sustainablecities.dk/>.

has yet to be identified, articulated and addressed, and the engagement with transport and poverty is yet not well developed.

Global policy frameworks relating to environmental change can be seen to be driving a substantial component of the “negative externalities of urban mobility” perspective. Global arrangements on emissions, through the mechanism of national laws, create the contexts in which local or place-based planning frameworks are developed and operate. Local urban planners must mediate between the pressures for environmental improvements and the social sustainability of local contexts. For example, removing older vehicles from the urban fleet is likely to disproportionately disadvantage those on low incomes in their access to urban mobility, even though major environmental benefits may result from such legal limits on the operation of older vehicles in the urban environment.

The local context is clearly very important in considering how to operationalize social sustainability frameworks for urban transport: the social sustainability of urban mobility in resource-poor locations may depend on the continued utilization of older, environmentally damaging fleets of vehicles. The best practice of wealthy cities, where combining social sustainability and environmental sustainability is a realistic option, may not be available to those cities and urban environments containing high percentages of the world’s poor.

V. Conclusions

It is timely to rethink the urban development paradigm in terms of the constraints on mobility as a solution to spatial inequities and inequalities, at the global, regional and local levels. Considering urban transport provision from a social sustainability framework raises critical issues of policy goals and purposes, not least of which is the consideration that policies aimed at stemming or reducing urban mobility should not accentuate existing inequities and inequalities in accessibility. It also raises issues of reshaping urban decision-making structures to better integrate the end-user, understanding end-users to include both those presently included in mobility and accessibility provision and, most importantly, those who are or have been excluded.

Lastly, many discussions of pro-growth, pro-poor transport strategies have diverted attention from the fact that the

poor have been badly served: the label “pro-growth, pro-poor” does not guarantee that the transport needs of the poor will be directly met, but rather indicates that benefits will trickle down to the poor from the strategy.³² For the label “pro-poor” to be used, benefits should either be direct or auditable and demonstrable. Launching projects as pro-poor without demonstrating that they have delivered direct benefits to the poor is a sleight of hand—it allows a vocabulary of repair without a practice of change.

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³² See World Bank (2002).

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