

Inclusive access and mobility in developing countries

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Abstract

A review of the literature on accessibility for those with particular needs on account of age or disability shows the available information to be limited. There is generally little or no data to plan, implement, monitor and evaluate projects and there are gaps between institutional structures and policies. The universal mode of transport in urban and rural settings is walking since this mode connects households to the transportation system and destinations. For the poorest people walking is often the only form of transport which they can afford. However, there are many barriers to movement in the pedestrian environment, particularly in developing countries for the transportation disadvantaged.

The travel needs and travel behaviors of the elderly, persons with disabilities in developing countries may be similar to those in the US and other industrialized countries. The solutions and interventions used to improve access and mobility in industrialized countries could be adapted to developing countries. This paper describes some ways this experience could be used to address mobility and accessibility problems for the transportation disadvantaged in low and middle income countries.

The Transport and Social Responsibility Thematic Group within the World Bank has started to compile data on mobility and accessibility for the transportation disadvantaged in developing countries. The paper advocates the need to mainstream the pedestrian environment into transport. It also describes an outline for inclusive transport indicators to monitor accessibility and improvements to transportation and especially pedestrian infrastructure. These indicators could be used to realize various strategic frameworks that have been proposed. (250 words)

THE VISION AND PRINCIPLES OF INCLUSIVE ACCESS

The 1993 United Nations Standard Rules on the Equalization of Opportunities with Persons with Disabilities, requires all UN states to:

recognize the overall importance of accessibility in the process of the equalization of opportunities in all spheres of society. For persons with disabilities of any kind, States should (a) introduce programmes of action to make the physical environment accessible; and (b) undertake measures to provide access to information and communication

and that for improved access to the physical environment:

- *States should initiate measures to remove the obstacles to participation in the physical environment. Such measures should be to develop standards and guidelines and to consider enacting legislation to ensure accessibility to various areas in society, such as housing, buildings, public transport services and other means of transportation, streets and other outdoor environments*
- *States should ensure that architects, construction engineers and others who are professionally involved in the design and construction of the physical environment have access to adequate information on disability policy and measures to achieve accessibility.*
- *Accessibility requirements should be included in the design and construction of the physical environment from the beginning of the designing process.*
- *Organizations of persons with disabilities should be consulted when standards and norms for accessibility are being developed. They should also be involved locally from the initial planning stage when public construction projects are being designed, thus ensuring maximum accessibility*

TRAVEL NEEDS AND TRAVEL BEHAVIORS OF TRANSPORTATION DISADVANTAGED

When the needs and travel behaviors of private transportation dependent US, ageing, public transportation developed Japan and developing countries are compared, similar characteristics in mobility-disadvantaged populations are found. Many are poor, living on social welfare or pensions in the US or in Japan, or scratching a living in developing countries where there are no or limited social insurance. Many are poor as a result of limited mobility and accessibility to economic opportunities and as a consequence may be living an isolated life. Females with disabilities are even more isolated in that they have restricted mobility due to sex, their disability and social perceptions. This seems to be the situational pattern all over the world, developed or developing.

The Situation in Developing Countries

Policies and Structures

In order to understand the situation in developing countries, information on national policies and structures for country disability profiles (I) which were commissioned by the Japan International Cooperation Agency (JICA) were reviewed and summarized in the table below.

TABLE 1 Summary of Country Disability Profile Information

Country	Ministry	Key Legislation	Legislation observed	Statistical database
Asia				
Bangladesh	Ministry of Health and Family Welfare, Ministry of Social Welfare, Department of Social Services, National Coordination Committee (NCC) on disability	Bangladesh Persons with Disability Welfare Act 2001, National Policy concerning the disabled persons 1995		
Cambodia	Disability Action Council	Constitution, Five Year Socio-economic development Plan, Plan of Action		
India	Ministry of Urban Affairs & Employment, National Coordination Committee on Disability (NCCD) -Ministry of Health and Family Welfare, Ministry of Railways, Ministry of Civil Action, The Ministry and the Public Sector Unit under the Ministry of Airlines	1995 Persons with Disabilities Act		2001 National Census, 1991 National Sample Survey
Indonesia	Social Ministry, General Directorate Social Rehabilitation Service	Law Number 4 on Persons with Disabilities		
Lao PDR	Ministry of Labor and Social Welfare, National Committee for Disabled Persons (NCDP)	2000 Action Plan of the National Strategy for disabled in Lao PDR		1996 National Survey of Disabled Persons, 1997 National Survey on the Socio-Economic Impact of UXO
Myanmar	Ministry of Social Welfare Relief and Resettlement - Social Welfare Department	Law for persons with disabilities based on 1958 law on rehabilitation and employment of disabled		none known
Nepal	Village Development Committee -Ministry of Local Development	Local Self-government Act 2056/1999, and national 5 year plans		Situational Analysis on Disability in Nepal (A National Sample Survey)

Pakistan	Ministry of Women's Development, Social Welfare and Special Education, National Coordination Committee	Disabled Persons (employment and rehabilitation) ordinance 1981,		National Population Census 1998, Regional Census of Disabled Persons of Rawalpindi and Islamabad, Survey of Disabled Persons in the North-West Frontier Province 1997
Philippines	National Coordination Committee on Disability (NCCD), Department of Social Welfare and Development, National Council for the Welfare of Disabled Persons,	Magna Carta for Disabled Persons (Republic Act no 7277), Accessibility Act 1993		National Statistics Office, Population Office
Sri Lanka				
Vietnam	Ministry of Labor, War Invalids and Social Affairs (MOLISA)	Ordinance on Disabled People (1998)		
Pacific				
Fiji	National Coordination Committee, Ministry of Health, Ministry of Woman, Social Welfare and Poverty Alleviation	Fiji National Council of Disabled Persons (FNCDP) Act No 21, Constitution of Fiji Chapter 4 Bill of Rights Section 38, subsection 4 and 5 , National Building Code		national census, national poverty report
Tonga	Ministry of Health, psychiatric unit			1981 persons with disabilities family survey, population census
Tajikistan	Ministry of Health, Ministry of Labor and Social Welfare	1991 Tajikistan Law on Social Protection of Persons with Disabilities , 1998 Tajikistan tax code Article 169 no taxation of PWD transport		None
Uzbekistan	The Cabinet of Ministries, Ministry of Labour and Social Security	The Law on Social Security of Disabled People (1991)	Government social security ensures free access to social infrastructure	

Latin America				
Bolivia	Ministry of Health, Vice Ministry of Popular Participation and Municipal Enforcement, National Committee for Persons with Disabilities (CONALPEDIS)	1994 Law 1551 of Popular Participation for Persons with Disabilities, 1995 Law 1678 of Persons with Disabilities	not enforced	CONALPEDIS - WHO? survey,
Honduras	Ministry of Public Health and Social Assistance	1987 Law of Rehabilitation of the disabled (Decree 184-87) guarantees rights and ensures equal opportunities are provided for the disabled, Chapter IV Article 142 of 1982 Constitution of the Republic of Honduras		
Paraguay	Ministry of Public Health and Social Welfare, National Institute of Protection for Exceptional People (INPRO)	Law no 122/90 on rights and privileges of the disabled, National Constitution of the Republic of Paraguay articles chapter 1 article 6, law no 780 (1979),		National Census of Population and Housing 2002 and other specialized surveys exist
Africa and Middle East				
Ethiopia	Ministry of Labour and Social Affairs	1995 proclamation enacts the constitution protecting rights of every citizen including the disabled		Baseline survey on Disability in Ethiopia (1995) by AAU
Egypt	Ministry of Social Affairs, Ministry of Health and Population, Ministry of Education	employment quota set in law no.39		
Saudia Arabia	Ministry of Labor and Social Affairs, Ministry of Health, Ministry of Education	1992 Basic System, Issue No. A/90, Article 27., 1981 Council of Ministers Resolution No 187 on transportation discounts, Development plans		1993-1996 National Project for Disability and Rehabilitation research

Source: Japan International Cooperation Agency commissioned Country Disability Profiles

The review found that in India (2), 5 ministries and 1 public authority are working on accessibility issues under the 1995 Persons with Disabilities Act. The Disability Act provides for the creation of a barrier-free environment. The 2001 National Census and 1991 National Sample Survey data are the starting points for statistical data. A case study from Pune City in India (3) details the implementation of a small scale low cost demonstration project along an extremely busy bus route in Pune. The project aimed to make the bus more accessible for passengers in general and in particular those with disabilities. Another case study on Kolkata (4) examined barriers to accessibility in six major modes of transportation; auto-rickshaws, buses, cycle-rickshaws, trams, metro-rail and suburban trains. It found that there was a major need for public investment in its infrastructure due to poor planning on the outset. Delhi's metro financed by the

Japan Bank for International Cooperation (JBIC) which has access to expertise to design for universal access. In general in Asia, there seems to be an active civil society and disabled users' involvement in improving accessibility.

In Uzbekistan (5), it was found that the Law on Social Security of Disabled People (1991) defines rights of persons with disabilities to easy access to public facilities and services with government social security as a tool of ensuring free access to social infrastructure. Requirements for infrastructure construction are a part of social security. The provision of apartments to those with congenital disabilities and other disabilities of group I and II take into consideration the distance to work place, medical clinics, other transport and communications from persons with disabilities' residences. There were also 200 special initiatives taken to give more access to public transportation and buildings in 2000. However, the infrastructure or transport sectors do not seem as though they are involved in the realization of policy or projects.

It is interesting to learn that an evaluation was done of the extent of enforcement of accessibility legislation in Argentina in place since the 70s (6), as there are very few reflections on the impact of legal frameworks.

Major regional issues and trends

From the above, the major regional issues and trends can be categorized as follows. Many Asian countries have taken the initiative to improve access for the disabled through legislative frameworks and institutional arrangements. This includes the involvement of private companies for designing and equipping facilities, as well as involvement of civil society for advocacy. One of the characteristics of this region may be the involvement of multiple ministries. There is a lack of information on the legislative frameworks in African countries, as well as other institutional arrangements including the involvement of civil society and the private sector. In Latin American countries, many countries have the legislation in place and a ministry appointed for realizing activities, However, in many cases the ministries are required to implement plans or projects without the firm backup of data and analysis. In all of the regions, there is very little monitoring, enforcement or realization of legislation through projects. Therefore very little is known on what happens on the ground. Post conflict countries not only have a larger number of persons living with disabilities as a result of mine injuries and poverty, the ministries do not have a budget and/or the administrative capacity to carry out tasks regarding inclusive access.

Experiences from the developed world

In the United Kingdom, advocacy and studies have revealed that only 10% of trains and 29% of buses met standards and that there was a lack of controlled crossings close to bus stops, leading to a poor quality pedestrian environment around the bus stops. It was also found that only 40 out of 275 London Underground stations had adequate slopes and elevators, and that no rail stations met the design standards issued by the Rail Authority. It was also found that transport related information was largely inaccessible and that not only the infrastructure lacked consideration or inaccessible. As a result, the Disability Discrimination Act 1995 required new buses and trains to meet accessibility requirements (7).

A study in New South Wales, Australia (8) found that the disabled who lived in remote and rural areas had a double disadvantage in regard to receipt of services. The major issues for this population were distance and the lack of transport leading to isolation, lack of access to health services, lack of access to accommodation and housing, education, employment, information dissemination and access to specialized equipment for persons with disabilities. This

could be a description of a problem in a developing country. However what differentiates the UK and Australia to developing countries is the extent to which policies and organizational support structures, advocacy groups are in place for transportation disadvantaged populations, and that studies are conducted to find out the reality on the ground, as seen in the above examples.

Accessibility and mobility solutions

The Frameworks

The paper *Universal Transportation: Success for Strategies* (9) notes that success can be defined by the travelers, the transportation providers and the decision makers. A successful strategy consists of three elements: the endogenous factors, the macro and micro strategies by stakeholder category and exogenous triggers. Macro strategies include mainstreaming equal access for all as a basic human right, through policies, legislation and programs supported by information and technology transfer. Micro strategies focus on service delivery at the local level, such as implementing universal design plans, better coordination and accessibility audits.

The World Bank Transport Unit has a similar strategy to the one described above, to improve accessibility in developing countries (10). The Transport and Social Responsibility Thematic Group under the Transport Sector Board is currently working to identify indicators and to compile and analyze data in order to better assess the impact of accessibility interventions under the frameworks described above.

The Goals

Inclusive Transport Infrastructure

Transport infrastructure such as ramps and pedestrian sidewalks, crossings in urban settings, footbridges and access roads, road shoulders in rural settings are good examples of inclusiveness. The elimination of physical barriers or infrastructure such as footbridges, gutters which may not be a barrier per se but could be perceived by a barrier to some, is also a good practice of inclusiveness. The Transport and Social Responsibility Thematic Group advocates for the mainstreaming of the pedestrian environment as this is a crucial element of inclusive transport infrastructure. The link between the home and transportation, the link from the transportation to the workplace or social services is essentially walking and frequently overlooked. For example, for one to utilize inclusive transport services, the pedestrian environment surrounding these services must be improved as seen in the Jakarta, Indonesia case (11). Likewise, a study on Bandung in Indonesia details how steps inhibit the mobility of the transport disadvantaged or the ambulant disabled (12). Fukuhara et al., (13) write that in Japan, the bicycles used to commute to the railway stations are inhibiting the use of sidewalks for the visually impaired in particular. Carreno et al., (14) writes about a study conducted in the UK to identify the needs of vulnerable pedestrian groups in the city centre. Although de Langen (15) discusses the need to mainstream pedestrian infrastructure in urban road infrastructure policies in Africa, the few examples given above, point to the need to mainstream the pedestrian environment across regions. Below is a table of good examples of inclusive transport infrastructure for women, children, the elderly and the disabled.

TABLE 2 Examples of Inclusive Transport Infrastructure

Transport infrastructure/inclusiveness	Women (app. 50% of population)	Children (app. 25-50% of pop)	Elderly (app. 10-25%)	Disabled (app. 10%)
Footbridges	Low height footbridges with railings			Ramps for wheelchairs
Street lighting	Adequate street lighting		Adequate street lighting	
Sidewalks/curbs	Elimination of obstacles such as bicycles, motorcycles, lamp posts, signboards of nearby shops with accessible pedestrian signals (APS) and signs			
Road shoulders	If adequate and reserved for public transport, more efficient public transport services could be provided.			
Bus stations/BRT stations	Curb ramps, floor gap elimination, other accessible features	Floor gap elimination, other child-friendly features	Curb ramps, floor gap elimination, other accessible features	
Train stations	Platform and Train gap elimination, Easy-to-read time tables and directions			
Ports/Airports		Baby friendly and children playground facilities		
Road-side stations "Michinoeki" (16, 17) Town stations "Machinoeki" (18,19) Both are community-initiated transport infrastructure in Japan	Good quality and timely information	Baby and children friendly toilets and playground space	Priority parking, slopes, curb ramps	Priority parking, slopes, curb ramps
Vehicles (buses, trains, private motor vehicles)	Low steps, color contrasts, good information display of destination, route next station			
		Low hand grasps, retractable 1st step or kneeler feature, audible stop request signals	Hand grasps, vertical stanchions and hand holds, Prioritized seats for seniors, Visual and	Retractable 1st step or kneeler feature, Prioritized seats for persons with disabilities, Visual and

			audible stop request signals	audible stop request signals
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Inclusive Transport Services

Transport services such as community buses in Asia, physical disability considerate bus rapid transit systems in primarily Latin America, are some of the more recent transport sector initiatives to provide affordable and inclusive public transport around the world. Transport services become inclusive when the transport sector personnel such as drivers, conductors and fare collectors are sensitized and trained in the provision of assistance to the transportation disabled. This is an issue which has not been extensively documented or researched.

The Means

Involving the Concerned and Partnership

Experiences in Japan and in the US have found that the consultation, design, implementation, monitoring and feedback/evaluation should involved stakeholders including persons with disabilities and the elderly in the provision of transport infrastructure and services results in a universally applicable and satisfactory design and implementation. The participatory methodology now common in rural and urban development, resource use is however yet to be fully and always applied to transport projects in the developing country context, with perhaps the exception of transport services such as community buses in Asia, physical disability-considerate bus rapid transit systems in Latin America. This method will also be applied to the identification of the Inclusive Transport Indicators as described below.

Inclusive Transport Indicators

Some categorical possibilities for a set of Inclusive Transport Indicators would be as follows;

- *Population Density and Characteristics (20)*
- *Accessibility Legislation*
- *Infrastructure Accessibility*
- *Personal Access and Mobility*

These indicators are in the line of thinking set out in Transport, Poverty and Disability in Developing Countries (21) and San Francisco Bay Area examples provided by Access Exchange International in Transport for All: What Should We Measure? (22), which include categories such as system reliability, system performance, staffing performance, customer service and employee satisfaction or safety, accessibility and reliability.

The Examples

The review found that accessibility in both developed and developing countries are similar. The difference between the developed and developing countries is that developing countries, despite having the legal framework ensuring accessibility, do not have strategies, guidelines, checklists or an auditing mechanism to make transport more accessible for the elderly and the disabled. The

table below summarizes these strategies and guidelines by countries, donor and multilateral agencies.

TABLE 3 Summary of Donor Strategies, Guidelines and Checklists

Country/Organization	Responsible Unit	Guideline
Canadian Transportation Agency	Accessible Transportation Directorate (23)	
Foundation for Promoting Personal Mobility and Ecological Transportation (Japan)		Guidelines to Improve Barrier-Free Access for Public transport Passenger Facilities (24)
UK Department of Transport	Inclusion and Mobility Unit (25)	
US Access Board		a comprehensive website (26) providing accessibility guidelines and standards, technical assistance, training, and research links, downloadable publications - including guidelines and standards, and links categorized through an annotated list of resources
US Transportation Research Board	Committee on Accessible Transportation and Mobility (27)	
The InterAmerican Development Bank (IaDB)		Operational Guidelines on Accessibility in Urban Development Projects with Universal Design Principles (28)
The International Finance Corporation (IFC)		Guideline for Including Accessibility Features/Universal Design in Infrastructure and Human Development Projects by the World Bank Group (29)
UK Department for International Development (DFID)		Enhancing the Mobility of Disabled People: Guidelines for Practitioners (30)
UN	Division for Social Policy and Development	A Design Manual for a Barrier Free Environment (31)
UNESCAP	Emerging Social Issues Division Population and Social Integration Section (PSIS) (32)	Promotion of non-handicapping physical environment for disabled persons: guidelines (33)
USAID		1. Checklist for Inclusion as part of the Building an Inclusive Development Community Manual (34) 2. a website about USAID financed construction to include disability issues (35)
The World Bank	Transport and Social Responsibility Thematic Group Regional Transport Teams	1. Transport Strategy to Improve Accessibility in Developing Countries (10) 2. BRT Accessibility Guidelines (36)

It should be noted that the agencies or organizations which have a dedicated unit to mobility, inclusion and accessibility are the most vocal and effective in promoting accessibility for all. This does not automatically mean that focal points are the solution for inclusive access, but they

are indicator of the extent of involvmenet of disabled persons and political will in a certain government, donor or recipient

Conclusions and Recommendations: Transport for all

Access for all can only be achieved through bettering various types of transport infrastructure including the pedestrian environment, by working with municipal authorities and rural road authorities. In order to achieve the goal of transport or access for all, one must move from away from vehicle centered transport to people-mobility centered planning. Listening to women, children, the elderly and persons with disabilities, integrating their suggestions in the design, implementation and monitoring of transport infrastructure and services universally benefit all in the end. The goal is to provide access for all or universal access which would benefit not only persons with disabilities or a certain sex and age but the population as a whole.

However, a review of the literature has found that despite the legal frameworks, there are no uniform definitions of the transportation disabled. Nor is there a grasp of the realities on the ground of what it is like to travel as an elderly person or one with disabilities. There is also a lack of indicators and baseline data to plan, implement, monitor and evaluate interventions.

What should donors including the World Bank do?

A starting point could be the mainstreaming the use of World Bank Group International Finance Corporation accessibility guidelines when designing Bank Group buildings, or financing the design, building or operation of transport infrastructure and transport service projects in developing countries. Access features which are included from the beginning of a construction projects are estimated to cost less than 1% of the total cost of construction and provide enormous benefits to all.

The suggestion of subsidies or other tools to encourage transport operators in developing countries would also make provisions for persons with disability. Another practical solution would be to mainstream the pedestrian environment in transport policy and practice.

Finally the World Bank can initiate transportation accessibility improvement and monitor these initiatives through the use of inclusive transport indicators. The use of the indicators to monitor implementation and partnership with others who have learned from their experiences will move the agenda of inclusive transport forward and to meet the needs of transportation disadvantaged populations.

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