

# Inclusive and safe urban mobility and Disaster Risk Management in developing countries<sup>1</sup>

HI aspires to a world of solidarity and inclusion, enriched by our differences, where everyone can live in dignity, including persons with disabilities and the most vulnerable.

Current global trends suggest that by 2050, cities will be home to two third of humanity<sup>(2)</sup>, including 15% of persons with disabilities. Places of prosperity and opportunity throughout history, rapidly growing cities now concentrate and exacerbate overwhelming challenges in terms of poverty, inequalities, safety and pollution. These factors engender additional exclusion of the most marginalised and vulnerable members of communities, including persons with disabilities; all the more in developing countries.

Considering these global trends, we believe that the global commitment to leave no one behind cannot be achieved without empowering and mobilising all development actors, from local to international level, to address inclusion and safety issues in the urban context.

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1. The study was implemented by HI with the support of Andreas Beavor, Urban Emerge, Federico Batista Poitier and Dr. Victor Pineda, World Enabled. The editorial committee consisted of HI representatives, along with Jean-François Gaillet and Julie Delzenne, Institut VIAS, and Abner Manlapaz, Life Haven Center for Independent Living. The conclusions are based on literature review, lessons learnt from programmes of HI, CBM and Light for the World, as well as focus groups with persons with disabilities and their representative organisations, in several countries (Burkina Faso, Cambodia, Democratic Republic of Congo, Haiti, Kenya, Laos, Nepal, Senegal and Vietnam).

2. UNDESA (2014) World Urbanization Prospects.

**Through appropriate measures to improve safety and accessibility, cities in developing countries have the transformative potential and the leverage to reduce inequalities in society and contribute to the realisation of human rights for all.** This can make a significant difference in the well-being of the most vulnerable, including persons with disabilities.

## Why is it important?

More than 226 million people are affected by disasters every year, the majority living in developing countries. This number is expected to rise as the impacts of climate change increase the number and frequency of hazards that can cause disasters.<sup>(3)</sup> Disasters, natural or man-made, can take a heavy toll in terms of lives, they also have profound impacts on development outcomes and levels of poverty for communities and countries.<sup>(4)</sup> The most marginalised and vulnerable in society are at greatest risk of suffering from these impacts.

According to global estimates, **persons with disabilities** comprise approximately 15% of the world's population, with 85% of those living

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3. United Nations International Strategy for Disaster Reduction UNISDR, 2011. Disasters through a different lens: Behind every effect, there is a cause.

4. HI (2012) Disability Inclusive Community based DRM: A toolkit for South Asia.

in developing countries (WHO).<sup>(5)</sup> They are **disproportionately affected by disasters namely owing to mobility difficulties in evacuation, lack of access to information or services and discrimination.** Noticeably, the fatality rate among persons with disabilities was twice that of the rest of the population during the 2011 Japan earthquake and tsunami.<sup>(6)</sup> Developing countries such as Haiti, Nepal and Bangladesh are generally less resilient to disasters due to poorly planned urban areas and low quality construction of infrastructure and housing.

When disasters occur, **constraining external factors, such as unsafe roads and lack of accessible pedestrian and transport routes, create additional difficulties for coping with the situation, and eventually make the difference between life and death.** Developing cities vulnerable to disasters also are likely to have a greater proportion of the population with a disability, due to past injuries. Haiti, for example, recorded a significant increase in persons with disabilities following the 2010 earthquake and globally, for every one person killed in a disaster, another three are injured or left with a permanent disability.<sup>(7)</sup>

The CRPD requires countries to identify and eliminate obstacles and barriers and ensure that persons with disabilities can access their environment, transportation, public facilities and services, as well as information and communications technologies. **When interpreting this requirement, it is crucial to link accessibility and safety in order to improve safe mobility<sup>(8)</sup> for all in the city.** Without road safety for all, cities are not inclusive and accessible. Through SDG Target 11.2, all countries committed to provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding

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5. WHO (2011) *World Report on Disability*.

6. Information Center Japanese Society for Rehabilitation of Persons with Disabilities (JSRPD).

7. CBM International.(n.d.).*Inclusive Emergency Response*. Retrieved from [http://www.cbm.org/index/Default\\_245472.php](http://www.cbm.org/index/Default_245472.php)

8. Humanity & Inclusion defines "safe mobility" as the ability for a person to safely and reliably access preferred destination by navigating an environment considerate of his or her needs and preferences.

public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons. The Sendai Framework<sup>(9)</sup> states that disability should be included in all disaster risk management processes and stresses the need for policies and programmes that address displacement and mobility to enhance the resilience of individuals and their communities.

Yet a 2013 global survey of 5,450 respondents with disabilities from 126 countries demonstrated that only 20% of them could evacuate immediately without difficulty.<sup>(10)</sup> There are usually **significant shortcomings in the inclusion of persons with disabilities in participation and consultation when preparing disaster response plans, identifying vulnerable members of communities or designing emergency infrastructure such as shelters.** As a result, their differing needs across a wide spectrum of impairments, including physical disabilities, visual or hearing impairments and cognitive impairments are not taken into account.

While improving road safety and enabling accessibility alone will not break down all disability barriers to mobility in times of disaster, it is a central factor that can have a domino effect towards enhancing inclusive disaster risk management (DRM) that leaves no-one behind. **Safe and inclusive mobility contributes to the resilience of the whole community in the city by ensuring that the needs of everyone are taken into account and no one is 'invisible' when disaster strikes.** This includes pregnant mothers, children and the elderly, as well as all other inhabitants who have limited mobility. The recovery and reconstruction process that follows a disaster offers the opportunity to '**build back better**', including accessibility features as far as possible in new infrastructure, buildings and disaster shelters. Evidence shows that this can significantly increase the evacuation options for those with disabilities during subsequent disasters.

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9. Sendai Framework (2015) Paragraph 30.

10. UNISDR (2013) *Global Survey of Persons with Disabilities*.

Clearly, the resources needed to make urban environments safe and inclusive for everyone are relatively modest compared to the enormous cost of excluding the persons most at risk from disaster relief, emergency response and recovery. **All stakeholders involved in the SDG implementation, especially States and local authorities must not fail to address the needs of persons with disabilities in times of disaster.** Action now to improve safe and inclusive urban mobility will ensure that inequalities and discriminations do not become further locked into poor urban design and inaccessible transport systems. A key solution lies in inclusive urban planning, i.e. to plan city development with respect for the diversity of its inhabitants, including the needs of those with disabilities to fully participate in city life.

## What are the urban mobility challenges relating to disasters?

« Most disabled people are poor and live in slums or low income neighborhoods where the roads are narrow. When there is a fire outbreak or other disasters, it is very difficult for us to be reached. The abled people can usually save themselves, but us... we often die or get serious injuries. »

*Representative of a Disabled People Organisation, Kenya.*

Much Humanity & Inclusion's work has found that a large proportion of disaster shelters in developing countries are unsuitable for most persons with disabilities.

This includes **inaccessible access roads and paths and the lack of access ramps and safety railings, lack of signage or Braille** for those with

visual impairments and no tactile surfaces around hazardous areas such as steps or to guide people along safe and accessible paths. Terrain often is very steep, such as in many of Nepal's urban areas, which are vulnerable to earthquakes, flooding and landslides.

**The means of evacuation, including boats or buses are often quite inaccessible and paths and sidewalks with obstructions mean that routes to emergency shelters or gathering points are very hard to navigate.** As a result, persons with disabilities and their families are often reluctant to evacuate and do so at the last minute or not at all - leaving them at substantial risk from disasters such as cyclones and flooding.

**Information delivered through radio, TV, leaflets or mobile phone message, on disaster related updates, such as accessible places of refuge and safe evacuation routes are often lacking.** Where they are available, those with visual impairments or the deaf are unlikely to be able to access them. Persons with disabilities are often socially and economically excluded from society and have more limited capacities to be informed of a potential alert.

Infrastructure that is sometimes in place to help those with disabilities, either at shelters or in the general urban environment is often not robust enough to withstand earthquakes or flooding, leading to more protracted access difficulties in the weeks following a disaster. Another set of accessibility challenges arises at refugee camps or smaller shelter areas, following disasters. Sections of humanitarian camps, such as initial reception areas, food and water distribution points and toilet and washing facilities, are often inaccessible to those with disabilities.

## Insights from countries

 **Building back better in Haiti; a focus on inclusive access and mobility**

When Haiti was devastated by a powerful earthquake in 2010, an estimated 220,000 people were killed, 300,000 were injured (many





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of whom have had to live with a permanent disability as a result) and more than one million were left homeless. It is estimated that there are about 800,000 to one million persons with disabilities in Haiti,<sup>(11)</sup> and **while the tragedy of the earthquake cannot be undone, the massive reconstruction required has offered an opportunity to build back in a way that is more inclusive for those with disabilities.**

For this, it is essential that the voice of persons with disabilities is heard in the reconstruction process. Thus, Haitian DPOs, were supported to carry out advocacy and dialogue with the authorities. **A series of training sessions were organised for government and community leaders on the needs of persons with disabilities.** Specific improvements to physical infrastructure were implemented, usually to enable accessibility to public buildings, including a Town Hall and several schools.<sup>(12)</sup>

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11. Source: UNICEF. <https://changingpaces.com/amid-haitis-reconstruction-a-chance-for-a-more-inclusive-approach/>

12. CBM (2015) *Inclusion of people in Haiti*. Source: <http://www.cbm.org/Inclusion-of-people-in-Haiti-478589.php>

The **'building back better'** process was also supported by an initiative of The Global Partnership on Disability and Development (GPDD) Working Group on Haiti Reconstruction, which, among a range of interventions, developed a toolkit for long-term recovery that emphasises the inclusion of all.<sup>(13)</sup> The GPDD created this tool in order to provide development partners, UN agencies, government departments, and other stakeholders with useful and proactive planning strategies and tools to incorporate inclusive disaster recovery and reconstruction practices that benefit persons with disabilities and other vulnerable populations. Seven major thematic areas related to disability inclusive recovery and reconstruction were selected: Physical Environment; Livelihood, Employment and Social Protection; Transportation and Communication; Education; Health; Capacity Building of Disabled Persons' Organisations (DPOs); and Organisational and Operational Issues.

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13. Available at: <https://europa.eu/capacity4dev/disability-and-development-network/blog/haiti-toolkit-long-term-recovery-gpdd>

**The modules on Physical Environment and Transport and Communication are especially relevant to inclusive and safe urban mobility for persons with disabilities. They go into detail on how the urban environment can be made more accessible and safe for vulnerable users including persons with disabilities.** Sections include practical guidelines for infrastructure projects, as well as consultation processes to ensure the participation of DPOs. Overall, this is contributing to create more resilient communities.

## Improving universal accessibility in Kathmandu, Nepal

Nepal has recently experienced very rapid urbanisation, from a level of just 3% in 1954, to over 60% today.<sup>(14)</sup> Much of the population is concentrated in the Kathmandu Valley, as well as in several other large urban areas including Biratnagar, Dharan and Bharatpur. Urban growth has been rapid and not well planned resulting in environments that are very challenging and unsafe for those with disabilities. Nepal is also very prone to natural disasters including earthquakes, flooding and landslides and mobility and emergency evacuation during times of disaster is very difficult for those with disabilities.

In Nepal, as well as in many other countries, it has been difficult to translate policy on accessibility into practice. In spite of the development of a number of standards exist, when new sidewalks are designed and constructed in Kathmandu, accessibility features are lacking. In order to encourage greater government's ownership for practical solutions, several pilot projects have been put in place, in close collaboration with relevant government departments.

One of these has brought together several NGOs and the Kathmandu Municipal Council (KMC) **to advocate for and develop actions for universally inclusive road safety and urban mobility. The program integrated the development of accessibility audits, and the training of KMC representatives to use them on a regular basis.**

Within Kathmandu, 150 audits were completed across 10 sectors of infrastructure or place types. These have helped to identify access and safety problems for those with disabilities, as well as the wider population. On this basis, busy road crossings, obstructed sidewalks and access to public infrastructure including emergency shelters, schools and hospitals have been identified and improvements are ongoing.

Accessibility audits before and after construction have helped to ensure appropriate construction and implementation of accessibility features such as level surfaces, the gradient of ramps and appropriate tactile paving. This has proven most effective when applied together with a local government mechanism to grant or deny a building permit based on compliance with accessibility and safety standards, although in Nepal, this system is not yet fully implemented.

Key to improving these mobility challenges in Kathmandu has been to strengthen the consultation process for new projects, which emphasised the needs of those with disabilities in terms of urban mobility and road safety. Consultation for new larger scale projects in the city has started to be carried out informally by Nepal's overarching Disabled People's Organisation (DPO). Usually, this has resulted in very productive sessions between designers and DPOs, with mutual learning and sharing of lessons, leading to improved design that enhances accessibility, including during times of emergency evacuation. Overall, the renewed dialogue between DPOs, public authorities and private stakeholders (e.g. construction corporations) has contributed to change significantly the general attitude towards a much better consideration for the requirements of universal accessibility.

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14. Source: Government of Nepal. <http://moud.gov.np/>



## Recommendations for improvements in policies and actions

### 1. Strengthening the policy and financial framework for safe and inclusive mobility, based on evidence and through participative processes

- **Place people at the centre of city development strategies** with a focus on improving the safety, accessibility and sustainability of mobility infrastructures to guarantee the enjoyment of the city for everyone and foster greater inclusion and participation in all spheres of society.

- Promote an **integrated approach to safe and inclusive mobility** that considers road safety and accessibility as mutually reinforcing elements and essential components of a broader strategy to ensure equal opportunities and achieve sustainable, inclusive development.

- Ensure that the **inclusion of persons with disabilities** is a systematic, cross-cutting objective in all policy frameworks and international cooperation strategies relating to urban planning, road safety, mobility and DRM. Ensure that national and municipal disaster risk management plans are inclusive, such that authorities and DRM stakeholders are able to support the evacuation of everyone, including persons with limited mobility, sensory and intellectual disabilities.

- Use a **gender lens**, and pay special attention to the specific and diverse mobility needs of women and girls, including women and girls with disabilities, emphasising the importance of safe and inclusive mobility towards equal participation of women and girls in society.

- **Facilitate the participation of all groups** represented in the city, including persons with disabilities, their representative organisations, in the design, implementation and monitoring of local and national policies and projects on urban mobility and DRM, in line with article 33 of the CRPD. Participatory planning is the only way to achieve universal mobility at the city scale. The earlier the consultation can start the better; DPOs should also be invited to test the finished product and help to improve the user experience.

- In order to develop evidence-based policies to improve urban mobility for vulnerable road users, **strengthen data collection methods** at local and national levels, including road crash data records.<sup>(15)</sup> Data must be disaggregated by age, disability, gender, income and geography. Use the framework of the Washington Group Short Set of Questions to adequately understand the diversity of disability in communities in developing countries.

- **Support research and the production of evidence in general on barriers** to and the cost/gains of accessibility, safety, inclusion for DRM, with a focus on girls, boys, women and men with disabilities, and the effects that mobility and transportation infrastructure have on the resilience of marginalised groups.

- Effectively **monitor and report on the impact of national and local policies** relating to safe and inclusive mobility. Utilise the **targets and indicators on mobility** set out in Sustainable Development Goals, the Sendai Framework, the New Urban Agenda, and the UN Decade on Road Safety through the lens of the Convention of the Rights of Persons with Disabilities, to create synergies between the different reporting processes and to ensure contextualised policies and implementation strategies that guarantee safe and inclusive mobility for all, including persons with disabilities

- **Engage in multi-stakeholders dialogue** and share knowledge and experiences on safe and inclusive urban mobility at all levels, and **bring these issues further up on the global agenda**, in different policy sectors, and as part of international cooperation strategies.

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15. The Road Crash and Victim Information System (RCVIS) enables the distribution of road crash and casualty reports to all local and international stakeholders involved or with an interest in road safety issues. See: <https://www.handicap-international-road-safety.org/en/sections-3-intervention-methods-and-operational-tools/pillar-1-road-safety-management-increasing>



© Tim Dirven - Panos / HI. Road safety awareness campaign in Laos.

## 2. Removing the barriers to safe and accessible mobility during disasters, focusing on:

### 2.1 – The built environment

■ As part of DRM plans, aim to **prioritise accessible routes** to safe collection points, for example in open spaces or parks. This includes step free access and tactile paving. Ensure that **disaster shelters** are designed to be fully accessible for a range of impairments, including, those with limited mobility, visual impairments, the deaf and cognitive impairments.

■ When improving the accessibility of disaster shelters and connecting transport infrastructure, three groups must be firmly embedded into the planning process:<sup>(16)</sup>

- First, persons with disabilities themselves and their families must be part, as nobody else can define their actual needs.

16. HI (2014) *Empowerment and participation: Good practices from South & South-East Asia in disability inclusive Disaster Risk Management*.

- Second, key government partners need to be involved – they need to give permission for upgrading and be convinced of the benefits.
- Third, the overall community should contribute. Without the community, the investments are not sustainable. Rely on local knowledge for design inputs for resilient and accessible shelters.

■ Promote a safe and accessible urban environment based on **Universal Design Principles**, providing accessible features for a wide range of impairments,<sup>(17)</sup> which represent cost-effective<sup>(18)</sup> and efficient measures to enhance rapidly safety and inclusion.

17. See for example:

- CBM and World Enabled (2016) *The Inclusion Imperative: Towards Disability-inclusive and Accessible Urban Development*;  
- HI (2016) *Policy Paper: Road Safety*.

18. When planned into new developments or infrastructure projects, a safe and accessible environment can be included from the start at very little additional cost.

- Ensure **public procurement** include mandatory standards on both safety and accessibility for any projects relating to mobility infrastructure or technology, including for international cooperation infrastructure projects, and ensure ex-ante and ex-post assessments of both safety and accessibility for these projects.

## 2.2 – Transport and vehicles

- Plan for **multimodal transportation system** to allow people to choose from a variety of transportation modes. Multimodal transportation system increases the safe mobility of those who are unable to drive (e.g. children, persons with disabilities, older people).
- Among the transportation mix in cities, promote in priority **affordable, safe, accessible and reliable formal public transport** that meet the diverse range of needs required by persons with disabilities, including women and girls with disabilities.
- In order to **increase the offer of accessible transport services**, organise **trainings and information sharing** for all public, private, formal, informal transport operators on how to cater for the needs of passengers with disabilities, including those with less visible impairments; and put in place of a system of accreditation based on vehicle specifications and driver training.
- Encourage the **development of ICT solutions to accessibility challenges**, such as disabled passengers being able to send pick-up requests to informal bus operators via SMS or an app, in the context where there are no designated bus stops.
- **Reduce import duties for imported accessible vehicles** as well as mobility equipment and assistive devices.

- Encourage the independence of people with disabilities, through the permission of accredited modified vehicles and a system for taking a driving test and proving sufficient ability, in order to get a **driving licence**; and make it mandatory for all infrastructure and buildings to reserve parking spaces for those with disabilities, close to safe access.

## 2.3. People

- Develop **training and drills** to help community members with disabilities practice what to do in emergencies, in terms of evacuating those with disabilities. In coordination with DPOs, raise awareness among persons with disabilities so that they know what to expect and what type of infrastructure is available. Build confidence for independent movement in emergencies, if needed.
- Promote **road safety awareness campaigns for all road users**, and a special focus on vulnerable road users, including persons with disabilities, children, pedestrians, etc.
- Provide **training on road safety and universal accessibility** for government staff, urban planners, engineers, public transport operators, traffic police, school teachers or business associations.
- With the view **to increase the demand for safe and inclusive mobility**, promote disability rights awareness campaigns and capacity building programmes for road traffic victims associations, DPOs, and other vulnerable road users groups.
- Develop **university curricula** in urban planning and design that include training on road safety and disability inclusion principles, especially Universal Design concepts.

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