# Integrating Appropriate Measures
# for
# People with Disabilities
# in
# the Infrastructure Sector

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## Abbreviations

| | |
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| ACFOA | Australian Council for Overseas Aid |
| ADA | Americans with Disabilities Act |
| ADL | Activities for Daily Living |
| CBR | Community Based Rehabilitation |
| DANIDA | Danish International Development Agency |
| DfA | Design for All |
| DFID | Department for International Development (UK) |
| DPO | Disabled People's Organization |
| EDF | European Disability Forum |
| ESCAP | United Nations Economic and Social Commission for Asia and Pacific |
| ESCWA | United Nations Economic and Social Commission for Western Asia |
| FIDIDA | Finnish Disabled People's International Development Organisation |
| HMC | Highly Motorised Countries |
| IADB | Inter-American Development Bank |
| ICF | International Classification of Functioning, Disability and Health |
| ILO | International Labour Organization |
| IMCI | Management of Childhood and Illnesses |
| ITDG | Intermediate Technology Development Group |
| JICA | Japan International Cooperation Agency |
| LAC | Latin America and Caribbean |
| LMC | Less Motorised Countries |
| MAAP | Microcomputer Accident Analysis Package |
| MDG | Millennium Development Goals |
| MHC | Mother and Child Health Care |
| MIUSA | Mobility International USA |
| NORAD | Norwegian Agency for Development Cooperation |
| ODA | Official Development Assistance |
| OECD | Organisation for Economic Co-operation and Development |
| PEEM | The Panel of Experts on Environmental Management for Vector Control |
| PRS | Poverty Reduction Strategy |
| PSP | Private Sector Provider |
| PWD | People with Disability |
| RHA | Rapid Handicap Assessment |
| SIDA | Swedish International Development Agency |
| STAKES | Research and Development Centre for Health and Welfare (Finland) |
| TRL | Transport Research Laboratory |
| UNEP | United Nation's Environment Programme |
| UNEP-IETC | UNEP International Environmental Technology Centre |
| UNEP-TIE | UNEP Division of Technology, Industry and Economics |
| UNESCO | United Nation's Educational, Scientific and Cultural Organisation |
| UNICEF | United Nation's Children's Fund |
| USAID | United States Agency for International Development |
| WATSAN | Water and Sanitation Project of the Loughborough University |
| WHO | World Health Organization |
| W&S | Water and Sanitation |

## Preface

The German Federal Ministry for Economic Cooperation and Development (BMZ) commissioned this background study through GTZ, Deutsche Gesellschaft für Technische Zusammenarbeit to advance the inclusion of disability considerations in development cooperation. The aim of this report is to provide an overview of the key infrastructure issues related to disability and development. Chapter 1 provides a general framework on disability sensitive development planning applicable to all sectors. Chapter 2 discusses how disability should be taken into account especially in water and sanitation, transport infrastructure and energy projects. A summary and the recommendations derived from the study can be found in Chapter 3. . At the end there is a list of key source material to be consulted for detailed information and guidance.

This study is based mainly on material that can be accessed by all users on the web. It is intended to serve users as an "electronic bookshelf" on disability and development particularly on issues related to infrastructure projects. It contains direct links to a number of related web pages and source material in the text and in the endnotes. By clicking the endnote index the cursor moves to the note and displays the document title, the web address, as well as providing the direct link to the source. The documents were accessed on the 20th September 2004.

At the end of the report there is a list of key source material which is central to the main topics discussed. The paper version contains only the key source material. The specific references in the endnotes can only be accessed through the electronic version of this document.

The study was done in collaboration of GTZ on behalf of BMZ, together with STAKES, the National Research and Development Centre for Welfare and Health in Finland. It was outlined and coordinated by Katja Franke of GTZ and Ronald Wiman, Development Manager at STAKES, National Research and Development Centre for Welfare and Health. He also had the main responsibility for Chapter 1. Professor Jim Sandhu of INDRA, Inclusive Design Associates Limited, had the main responsibility for Chapter 2.

The authors wish to thank Dr. Armin Bauer of KfW Development Bank, Dr. Rüdiger Krech and Ms. Katja Franke of GTZ as well as Mr. Hannu Eerola, Mr. Eero Kontula and Mr. Timo Voipio of the Finnish Ministry for Foreign Affairs for their valuable comments and advice. Furthermore, grateful acknowledgement is also given to the editing contributions of Ms. Susanne Heinrich and Ms. Mira Koivusilta. Any inaccuracies and omissions in the paper are, however, solely the responsibilty of the authors.

## Summary: Appropriate Measures for Integrating People with Disabilities in the Infrastructure Sector

Improvements in infrastructure have a key role in the achievement of the Millenium Development Goals (MDGs). Inadequate infrastructure is a major cause for ill health and disabling conditions. Inaccessible environments, technology, transport, products and services restrict the equal participation to economic and social activities of many groups of people who have temporary or permanent limitations in their functional capacity. In developing countries aging due to past population growth is rapidly increasing the number of people with disabilities. [1]

One in ten people have a disability. World-wide this represents over twice the population of the USA. The physical, institutional and attitudinal obstacles that restrict the exercising of basic rights and fundamental freedoms by disabled people also affect their families. It is estimated that about 20 to 25% of people are thus affected by environments, products, technology and services that are not designed for all.[2] Due to direct discrimination and obstacles to full participation disabled people and their families are particularly vulnerable to poverty. Their score by all MDG indicators are at the lowest end. Women and girls with disabilities are multiply disadvantaged and discriminated against.

Poverty and disability are linked in a vicious downward spiral. Poverty causes disabling conditions and disability makes families vulnerable to economic, social and environmental shocks. According to the World Bank, the proportion of disabled people is 20% among the poor. In post-conflict countries the overall figure also exceeds 20%. The rapid pace of urbanization has also led to the concentration of a large number of disabled people into cities where the only means for living often is to engage in begging. Disabled people are seriously under-served by all basic services. Only a few per cent of disabled children have access to schooling.

While disabled people belong to the poorest of the poor **neither the MDGs nor the majority of poverty reduction strategies (PRS) consider disability as an issue to be mentioned.** Unfortunately, the same holds for the OECD guidelines on poverty reduction. The discrepancy between the policies of donors in their home countries and their development cooperation practice is becoming an acute concern of intergovernmental organizations as well as many of the governments of the OECD.

Donors have been reluctant to allocate additional funds for financing disability related components in infrastructure projects. Given the opportunity costs of such investments vis-a-vis enlarging infrastructure coverage and general access, partner countries also often do not see such investments as priorities. However, improved accessibility of environments, products and services from the disability perspective improve the quality of the environment and services for all people.

There are disabled people in every target population. Reaching the MDGs is thus not possible without also including them as beneficiaries of the programmes. There is an obvious lack of awareness of the poverty and human rights aspects of disability by those parties that engage in the policy dialogue as well as those who plan actual development interventions.

Designing development interventions to benefit all is not an economic burden if undertaken at the inception of the planning phase. Rebuilding and reconstructing inaccessible facilities is usually expensive. Improvements in quality have a price tag but it also delivers better and more sustainable returns. Given the rapid aging of populations, accessibility is an essential element of socially sustainable development.

For over a decade, the international community and a number of donor countries have adopted a policy to observe the rights of disabled people to be included and have thus mainstreamed disability issues in their development cooperation policies. At the policy level, there are good examples of the twin-track approach: the main approach is to include and mainstream disability concerns and it is supported by operations directed to serve and empower disabled people. In practice, mainstreaming is

still inadequate and most operations intended to benefit this group are disability specific i.e targeted to disabled people only. This often leads to inefficient duplication of services supported in an unsustainable way by donor funding: special schools, special transport, rehabilitation institutions etc The result has been very low and unequal coverage of the disabled population at very high unit costs.

The international standards, the UN Standard Rules on the Equalization of Opportunities for People with Disabilities[3] is founded on the sector responsibility principle. Seeing disability as a social welfare issue is an outdated perspective. The international community has agreed to handle disabled peoples rights and needs as an issue of the universal right of all people not to be subject to discrimination. Many countries have geared their legislation in this direction.[4]

A number of planning guidelines and design standards do exist that would make it possible to take into account the user requirements of people with functional limitations. [5]Practical applications are still not common in the mainstream development cooperation context.

The purpose of this paper is to derive and summarize viable recommendations from existing studies and guidelines on appropriate ways to take into account the disability dimension in development interventions, particularly in the water and sanitation, energy and transport sectors. As all these services involve elements of the built environment in general, the design of an accessible and seamless service chain must observe the general accessibility requirements of the physical environment.

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# 1 Why and How Should Disability Dimension Be Included in Development Cooperation

This chapter introduces the approach and examples on how policies and projects should also be designed to benefit people with disabilities. The basic guidance presented in this chapter is applicable to all sectors – including the infrastructure sectors.

## 1.1 Disabled People Are at the Bottom by MDG Indicators

The Millennium Development Goals (MDG) were endorsed by the international community unanimously at the United Nations Millennium Summit (2000) to serve as the beacon and source of goal conscious coherence in all development efforts. The achievement of most of these goals requires adequate investments in the improvement of living environments of all people. Development is a public good that benefits everyone. Poverty, inequality, illnesses, unsafe and unhealthy life environment, low educational levels, etc., are public hazards, "public bads ", that affect everyone.

The MDGs cannot be reached if people with disabilities are not included. In the following table, there are examples on the status of disabled people in respect of each of the goals. In the third column there are examples on how infrastructure improvements facilitate the achievement of the goal.

Table 1: The Millennium Development Goals, the status of disabled people and the role of infrastructure improvements

| Millennium Development Goal | Status of people with disabilities ( PWDs ) | Improvements in infrastructure have a key role in creating an environment that |
|---|---|---|
| 1. Eradicate extreme poverty | PWDs belong to the poorest of the poor | …enable all people to avoid falling into poverty and improve the opportunities for disabled people to escape from poverty |
| 2. Achieve universal education | Only a few per cent of disabled children go to school | …enable all children to go to school, especially those who have mobility and seeing difficulties |
| 3. Promote gender equality | Women and girls with disabilities are the most marginalised and abused | …enable all girls to go to school and women to earn incomes, particularly those who have disabilities |
| 4. Reduce child mortality | The mortality of disabled children is exceptionally high | …reduces the risk of preventable, fatal or disabling illnesses |
| 5. Improve maternal health | Disabled mothers are under-served by all services | … enable all women to reach MHC services and to exercise good hygiene which prevent disabling health conditions |
| 6. Combat HIV/AIDS, malaria and other diseases | Disabled women are at high risk of being sexually abused and are subject to diseases such as HIV/AIDS | … prevent infectious diseases and to manage epidemics |
| 7. Ensure environmental sustainability | Many disabilities result from bad environmental management. Their access to clean water is poorer than that for non-disabled people. | …help in managing natural resources and to derive benefits from it in a sustainable manner |

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| 8. Develop Global Partnership for Development | The situation of disabled people is difficult as universal rights are not observed | …facilitate the use of modern infrastructure for networking and advocacy e.g. create awareness and empower disability organisations |
| --- | --- | --- |

The coherence of goals is being reinforced by the coherence in means to achieve those goals. The Poverty Reduction Strategies (PRS) are becoming the framework around which donors pool their efforts to support partner governments in achieving the MDGs. By all indicators of poverty people with disabilities belong to the poorest of the poor. Despite the large number of disabled people among the poor the study by the ILO [6] showed that most PRS papers do not yet recognise the existence of disabled people at all. This far they are the "invisible people" to the extent that in most countries there does not exist any statistics revealing even the overall number of people with disabilities.

Development cooperation involves the exporting of resources, skills and equipment from richer partners to the less wealthy. For the sake of policy coherence, all sectors must follow the same basic principles and approaches as far as the quality of development cooperation outcomes is concerned. Exclusion of specific groups cannot be seen as an acceptable quality.

Disability is not a health or social protection issue – to any more extent than health and social protection is relevant to all people. It is, however, common to compare and contrast "the disabled" with "the healthy". Such terminology reflects an outdated and dysfunctional understanding of the nature of disability. Given the right infrastructure people with disabilities can be as functional as anyone else. Unfortunately, this is most often not the case because the accessibility of infrastructure is inadequate by design, disabled people have no access to infrastructure services as they are often poorer, have no education, no job, live in poor housing conditions and they are at much higher risk to malnourishment, pollution, accidents, infectious diseases, etc. All these conditions lower their functioning capacity.

The medical model or the social welfare/charity framework for understanding disability has often been used to justify de facto discrimination and exclusion of people with disabilities. Poor design of the built environment makes it impossible for people with disabilities to exercise basic activities for daily living (ADL), such as performing home activities, moving around, washing, toileting, going to school, to work, and using public and private facilities, products and services. The barriers in the environment that have been planned to suit " healthy young males" incapacitate not only disabled people but also children, older people, cyclists, people with prams or pushcarts, people with suitcases, those who lose their glasses and anyone who deviates from the anthropometric average temporarily or permanently.

The institutional, social and physical barriers and intentional discrimination render disabled people extremely vulnerable to poverty and exclusion. Women and girls with disabilities are multiply discriminated and are thus at the bottom of the poverty ladder. This was highlighted e.g. by the Namibia Study by the Atlas Alliance .[7] Also the World Bank literature review on poverty and disability[8] confirmed this fact.

## 1.2   Poverty, Disability and the Role of Infrastructure

### 1.2.1   THE VICIOUS CIRCLE OF POVERTY AND DISABILITY

Poverty and disability are closely interwoven into a vicious downward spiral: poverty is often the main cause of disabling conditions and poverty is often the unavoidable consequence of disability when social protection systems are inappropriate or non-existent.

> "Disability in developing countries stems largely from preventable impairments associated with preventable communicable diseases, maternal and perinatal conditions and injuries, and prevention has to remain one of the primary foci." Read more: Poverty and Disability: A Survey of Literature (World Bank, PDF doc) [9]

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> A World Bank study in Uganda found that households with a disabled person were 38 percent more likely to be poor, and the PRSP from Serbia-Montenegro reports that 70 percent of disabled people are poor.
> Read more: News - Breaking the Cycle (World Bank Dev News Media Centre)[10]

The proportion of disabled people varies between countries from 7% to 20% depending largely on the definition and the indicators used. As the whole family is affected by the direct and the indirect cost caused by participation restrictions the proportion of people affected is much higher than disability prevalence figure indicates. For instance, in China a study found that while about 5 percent of the population had a disability, about 20 percent of people lived in households where someone had a disability.[11]

Most of the causes of disability are related to unsafe living environment due to poor infrastructure. In developing countries, for example, 20 percent of diseases can be attributed to environmental factors associated with the lack of infrastructure services: waterborne diseases, malaria, indoor air pollution. The solutions to these often have to start with basic infrastructure.

> "1.2 billion people lack access to safe water today; 2.4 billion lack access to adequate sanitation; 2.5 billion lack access to energy supplies; 900 million people in rural areas today live without any reliable roads to enable them to access markets, jobs, services."
> Read more: News - Making Infrastructure Work For The Poor (Worldbank Dev News Media Centre)[12]

In areas where the population at large have poor access to basic amenities the situation of disabled members of communities can be disastrous in this respect.

Read more about poverty issues on the World Bank Poverty Net Website.[13]


## 1.2.2   THE CURRENT UNDERSTANDING OF DISABILITY

The current understanding of disability is based on the human rights perspective. Medical interventions and social welfare have their functional instrumental role but the main issue is to enable disabled people to participate in and contribute fully in their societies as people with equal rights - including the right to take economic and social responsibilities.

The World Health Organization's (WHO) new standard set of concepts, *The International Classification of Functioning, Disability and Health (ICF- May 2001*[14]) is a radical departure from the earlier versions which focused substantially on the medical and individual aspects of disability.

The new definition is based on the social model of disability. It suggests that disability is not entirely an attribute of an individual, but rather a complex social and environmental construct largely imposed by societal attitudes and the obstacles in the human-made environment.

Disability is an umbrella term for impairments, activity limitations and participation restrictions. Disability is seen as a multidimensional life condition.[15] Actual performance by people depends *both* on disability *and* contextual factors. The contextual factors are composed of environment and personal factors.

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Environmental factors make up the physical, social and attitudinal environment in which people live.

**Products and technology** (eg. transport, assistive devices, indoor facilities, roads, paths etc.)
**Natural environment and human- made changes to the environment** ( e.g. land forms, artificial lighting, indoor air quality etc.)
**Support and relationships** (e.g. extended family, personal assistants, health professionals etc.)
**Attitudes** (e.g. attitudes of authorities, social norms, values, beliefs etc.
**Services, systems and policies** (e.g. production systems, architecture and construction services, open space planning services, housing services, utilities services etc.)

All these may include both *barriers* and *facilitating factors* that either make it more difficult or easier for people with different functioning to manage their lives. Infrastructure services have a central role as a facilitator or barrier: they can be accessible or not, they can be designed to be usable by all or only by people of a certain size, strength or sensory function level, etc. Attitudes by owners, planners and managers of these services can be discriminatory or egalitarian.

Whatever the causes of activity limitations the fundamental goal of all infrastructure development in poorer countries should focus on accessibility of life environments, access to opportunities, and equal participation in economic and social life by all population groups. The ICF concepts help widen the understanding of the role of environmental barriers which can be lowered, and enabling elements that can be built in while planning infrastructure facilities and services.

### 1.2.3    INCLUSION OF DISABLED PEOPLE AS AN INDICATION OF SOCIAL DEVELOPMENT

The proportion of disabled people varies between countries between 7% and 20%. The differences in figures result largely from the definitions and the indicators used. As disability increases with age, age structure also has a major effect on disability prevalence. On the basis of reasonably comparable definitions and data it has been estimated that about 10 % of the population of less developed countries have disabilities. [16] In post-conflict countries the figure can be over 20%.

Disability is not only an issue of a small minority. While about 10% of the population have disabilities the lives of over 20 percent of the population are restricted directly or indirectly by the barriers that hinder the participation of people with disabilities. For instance, in China a study found that while about 5 percent of the population had a disability (using a specific definition), about 20 percent of people lived in households where someone had a disability.[17]

Furthermore, over the life cycle, practically every person is affected for a shorter or longer period by activity limitations affecting movement, vision, hearing, cognition, etc. Consequently, adaptations of environments, products, technology and services that benefit disabled people benefit everyone at some point in time. Often the benefit is immediate and continuous as the adaptations improve overall usability.

Discrimination and exclusion of groups of people are both violations of their universal rights and freedoms and economically irrational. The level of social development of societies can be measured on the basis of how minorities and the vulnerable are treated.

> The President of the World Bank was inspecting a Bank funded water project in the poor neighbourhood of Rio. People were cheerfully waving pieces of paper in their hands. He had a look: those were water bills with people's own names on them.
>
> *"As I walked back down the hill from that favela, I realized that this is what the challenge of development is all about — inclusion. Bringing people into society who have never been part of it before. "*
> *These people were mainstreamed - quite literally: connected to the main pipeline.*
>
> Wolfensohn: "The challenge of inclusion." (World Bank) [18]

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According to WHO, disability is a major public health problem in Africa with about 35 million disabled people constituting around 7% of the total African population. Causes of disability include communicable diseases (poliomyelitis, leprosy, tuberculosis, trachoma, otitis media, measles, meningitis, parasitic diseases, etc), poor quality of perinatal care, injuries (particularly those as a result of road traffic, domestic and occupational accidents), malnutrition due to Vitamin A and iodine deficiency, chronic somatic and mental conditions including rheumatic diseases, diabetes, paralysis, alcohol and drug abuse. About 75% - 80% of disabled people in the African Region are in rural areas, where services for prevention and rehabilitation are either limited or unavailable. WHO/AFRO: Community Based Rehabilitation[19]

Preventable disabilities constitute an unnecessary burden to people. The role of adequate infrastructure is central to inclusion and in the prevention of disabling conditions. For instance, about 50% of blindness can be prevented or treated. Read more: Disability, Poverty and Development (DfID, PDF doc) [20]

Disability affects the whole family and also the community. The vulnerability of the family to poverty increases due to direct costs of care as well as indirect costs resulting from barriers to participation of the disabled family member as well as the lost time and earnings of the carer.

Analysis of Tanzanian survey data has revealed that households with a member who has a disability have a mean consumption less than 60% of the average (and a headcount 20% greater than average), leading the author to conclude that disability '… is a hidden face of African poverty'. Howard White, Africa Poverty Status Report, Third Draft, SPQ 1999.

Restrictions to participate in mainstream activities imposed on disabled members of society result in direct economic losses. Barriers also create unnecessary dependency of disabled people that, in turn, limit the participation of the care takers who are usually women.

The **cost of disability** has three components:
- the direct cost of treatment, including the costs of travel and access;
- the indirect costs to those who are not directly affected ('carers');
- the opportunity costs of income foregone from incapacity.

Read more: Disability, poverty and Development (DfID, PDF doc)
Read more: Poverty and Disability: A Survey of Literature (Worldbank, PDF doc)

All these costs can be cut by improving accessibility of environments, products and services to disabled people. The accommodation of user requirements of this group is not costly if carried out at the planning and construction phase.

The complexity and costs of managing disability have usually been overestimated. Studies in US and Europe show that costs from accommodating accessibility regulations are small in relation to GDB (0.01%). In the US, out of the reasonable accommodations required by ADA provided by a company, 69% cost nothing, 28% less than 1000USD, and 3% more than 1000USD.
Read more: Accessible Europe for All (European Union, PDF doc)[21]

Similarly, in developing countries, improving basic accessibility of the urban environment can be done at low cost by improving planning and design of streets, other public spaces and buildings. In the rural context, locally available materials allow for "ramps", handles, "tactile" markings, and simply, wider doors. In the infrastructure chapters of this paper there are examples and links to source material.

## 1.2.4   STRATEGIES TOWARDS EQUAL OPPORTUNITIES

Access to equal opportunities is one indicator of the level of social development. Traditionally, people with disabilities have been objects of targeted measures such as special schools or institutions.

Targeted measures have a tendency to stigmatise the recipients and often exclude them from the mainstream of society. Furthermore, they often lead to uneconomical duplication of services.

Mainstreaming, or adapting existing services that are meant for everyone, to include people with disabilities is both cost-effective and a means for integrating them into society. However, mainstreaming may not, in some cases, respond adequately to the needs of a disabled person.

Development cooperation projects that are intended to benefit disabled people have been, as a rule, disability specific. It is difficult to find examples of mainstreaming. However, it is not feasible to provide targeted services or facilities to the majority of the world's 600 million disabled people.

Many donors have therefore embarked on **a twin track strategy**[22]:

> 1. *Mainstreaming* is proposed to be the main track
> 2. It is supported by *targeted measures* or projects to empower people with disabilities to participate in mainstream development. This includes e.g. rehabilitation services and assistive devices.

Additionally, often there is a third track as well: *organisations of disabled people are supported* in order to enable them to make their collective voice heard in planning and implementation.[23]


### 1.2.5    DESIGN-FOR-ALL (DFA) – PLANNING FOR ALL

Accessibility of public amenities, water, sanitation, transport etc., public and private services and the built environment at large is a necessary - but not sufficient- condition to prevent exclusion and to enhance equal opportunities and empowering measures.

> "Access is not an act or a state but refers to freedom of choice in entering, approaching, communicating with or making use of a situation. The environment is either the large whole or parts thereof or the situation, which is accessed. Equal participation would take place if equalisation of opportunities to participate is provided through measures to enhance accessibility. The elements of accessibility are attributes of environmental availability but are not environmental characteristics." (United Nations Accessibility Guidelines Manual )[24]

Accessibility **of** and access **to** services requires, however, that the whole service chain is accessible. Accessible transport includes accessible stations, bus stops, buses/minibuses/taxis, accessible information, conducive attitudes and affordability for disabled people. Seamlessness is the key to usability of the service system as a whole.

An example of the integrated approach:

> Latin America and the Caribbean (LAC) have only recently begun the process of making the physical environment accessible to its population as a whole, including people with disabilities. Making the transition to full accessibility requires integrating the concept into all facets of society from education and architecture to tourism and communications.
> A comprehensive overview of the key pathways to accessibility of the physical environment: infrastructure, transportation, technology, and communications is available in the following publication:
> Read more: Pathways to Accessibility: Disability and the Physical Environment (The Inter-American Development Bank) [25]

Applying Design-for-All (DfA) or Universal Design principles[26] to environments, technology, products and services help to minimise the need for parallel special solutions and applications intended to serve exclusively people with disabilities.

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> **Design-for-All (DfA) or Universal Design** principles and practices are such that they either
>
> a) Enable all users to use the facility as such, or
> b) Include adaptability that enables simple modifications to make it usable to disabled people, or
> c) Have a "slot" into which a necessary interface or assistive device can be "plugged in" to make the basic product/facility usable to disabled and elderly people.

A major stumbling block for both DfA and equal opportunity policies is that the barriers to disabled people are multi-dimensional by nature. But the institutions and bureaucracies that are meant to be tackling them are uni-dimensional. The infrastructure for agencies for networking or synergising is usually missing.

## 1.2.6  TOOLS FOR ACCESSIBILITY

There are a number of guidelines and standards on accessibility of the built environment and access to information.

**The United Nations:**

*Accessibility for the Disabled: A Design Manual for a Barrier Free Environment* [27]
This is a comprehensive accessibility guide published by the UN. It is based on the experiences during the reconstruction of Beirut. It contains urban and architectural design guidelines and standards.

**ESCAP, United Nations Regional Commission for Asia and the Pacific:**

*Promotion of Non-Handicapping Physical Environments for Disabled Persons: Guidelines (* ESCAP guidelines on non- handicapping environments) [28]
Access to the built environment was one of the focal themes during the Asia and the Pacific Decade of Disable Persons. The UNESCAP was supported by Japan in the preparation of the guidelines that are actually a comprehensive manual. There is also a report on the Pilot in three cities (Bangkok, Beijing and New Delhi): Read more: UNESCAP Promotion of Non-Handicapping Environments for Disabled People: [29]

**DFID, Department for International Development (UK):**

Enhanced Accessibility for People with Disabilities Living in Urban Areas (By C Venter, et al, PDF doc)[30].
In Latin America, the accessibility considerations have risen strongly on the agenda recently. For instance, in the region, DFID has supported projects that study and design appropriate access criteria in the developing country context. For instance, the above document contains general guidance as well as detailed design standards

**WEDC , Water, Engineering and Development Centre (UK):**

In the rural context, the general principles on how to accommodate people with various activity limitations related to seeing, moving, speaking, understanding etc. are applicable but the ways and means require innovative adaptations to the socio-economic realities, local customs and available materials.  There are a few examples of efforts to systematically collect and document good practice. For instance the DFID commissioned WATSAN project by Loughborough University (UK) [31] has made field studies in e.g. Bangladesh, Cambodia and Uganda and documented a wealth of local solutions related to water and sanitation.

**Adaptive Environments/ USA:**

Adaptive Environments Checklist[32]

This is one of the instruments produced for facilitating the implementation of ADA legislation in USA. It contains design standards for "reasonable accommodation" and checklists that can be used to develop applicable tools to various contexts.

## 1.3 International Norms and Standards on Disabled People's Equal Rights and Participation in Development

### 1.3.1 THE UN STANDARD RULES

Disability issues are high on the international political agenda as they are being seen as human rights issues. General human rights instruments do apply to people with disabilities as well - but in practice disabled people are discriminated, excluded and abused. More specific guidance on the application of universal human rights instruments to disabled people are provided in the UN Standard Rules on the Equalization of Opportunities for Persons with Disabilities.[33]

The Rules are not legally binding but constitute a strong moral commitment to include people with disabilities in the mainstream of society. The Rule on accessibility sets the basic standard for all operations involving human-made physical structures.

**UN Standard Rule 5 on Accessibility**

*States should 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.*

*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*

Rule 5 also contains a separate item on access to information.

As for development cooperation, the Standard Rules emphasise mainstreaming in development cooperation as well:

**UN Standard Rule 21 on Technical and Economic Cooperation**

*States, both industrialised and developing, have the responsibility to cooperate in and take measures for the improvement of the living conditions of persons with disabilities in developing countries.*
- *Measures to achieve the equalisation of opportunities of persons with disabilities, including refugees with disabilities, should be integrated into general development programmes.*
- *Such measures must be integrated into all forms of technical and economic cooperation, bilateral and multilateral, governmental and non-governmental. States should bring up disability issues in discussions on such cooperation with their counterparts.*
- *When planning and reviewing programmes of technical and economic cooperation, special attention should be given to the effects of such programmes on the situation of persons with disabilities. It is of the utmost importance that persons with disabilities and their organisations are consulted on any development projects designed for persons with disabilities. They should be directly involved in the development, implementation and evaluation of such projects.*

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- *Priority areas for technical and economic cooperation should include:*
- *The development of human resources through the development of skills, abilities and potentials of persons with disabilities and the initiation of employment-generating activities for and of persons with disabilities;*
- *The development and dissemination of appropriate disability-related technologies and know-how.*
- *States are also encouraged to support the formation and strengthening of organisations of persons with disabilities.*
- *States should take measures to improve the knowledge of disability issues among staff involved at all levels in the administration of technical and economic cooperation programmes.*

The international community is currently preparing an international legal instrument (Convention) from the human rights perspective. There will be a strong requirement for non-discrimination and accessibility.


### 1.3.2 ILO CODE OF PRACTICE FOR MANAGING DISABILITY AT THE WORKPLACE

An important aspect of equal opportunities and poverty reduction is access to work. The ILO has issued standards regarding the Management of Disability at the Workplace (PDF doc). [34]

The purpose of the ILO Code of Practice is to ensure equal opportunity, safety and health for all workers alike.

The **disability management strategy** should include provision for:

a) recruiting jobseekers with disabilities, including those who have not worked before and those who wish to return to work after a period of non-employment;
b) equal opportunity for employees with disabilities;
c) job retention by employees who acquire a disability.

ILO guidelines also apply to the formal employment sector in developing countries and should naturally be adhered to by donor agencies, as well. For instance, USAID and DFI D have an explicit policy on equal opportunities in development cooperation service. The European Union has also issued a Guidance Note including such a recommendation. The result may be non-existent, if there is no budget line. For instance, in developing country settings hiring people with disabilities on equal grounds is often impossible without arranging special transport as accessible public transport is not available. The donor (or an employer supported by a donor) should be responsible for reasonable costs of accommodating the special user requirements of disabled employees.


## 1.4 Donor Policies Regarding Disability and Development

This chapter reviews the general policies by international development organisations on how to include disability dimension in development cooperation projects. It also gives examples of the policies of selected OECD countries.


### 1.4.1 INTERGOVERNMENTAL ORGANISATIONS

**The United Nations:**
The role of the Headquarters of the UN is predominantly a norm setting role. Similarly the UN Global Programme on Disability focuses on norms and standards rather than field operations. Full participation, equal rights and accessibility are the key themes. The Enable website contains all relevant international legal instruments on the rights of disabled people and a baseline document on accessibility to the built environment. Read more: Accessibility for the Disabled: A Design Manual for a Barrier Free Environment**[35]**

Integrating Appropriate Measures for People with Disabilities in the Infrastructure Sector

The *UN Voluntary Fund on Disability* supports the **Education Initiative on Universal Design in Latin America and the Caribbean,** implemented by CVI-Rio – Centro pela Vida Independente Rio de Janeiro in collaboration with the US-based educational non-governmental organisation Adaptive Environments. An international Conference "Designing for the 21st Century" will take place in December 2004 in Rio.[36]

The first comprehensive manual on how to integrate disability issues in development cooperation projects was prepared by the UN Disability Programme in the 1990s with the support of the Finnish Government and STAKES. The Disability Dimension in Development Action. Manual for Inclusive Planning (PDF doc) [37] is now available on the UN website. It contains guidance for policy formulation and practical tools on how to include disability dimension in the project cycle. The EU project document format is used as an example. (See further the item "Tools" below).

**United Nations Specialised Agencies** also have focal points on disability and a range of policies and projects:

**ILO** concentrates on labour standards including the management of disability in the workplace. Recently the ILO also published a study on Disability and Poverty Reduction Strategy Papers (PDF doc). [38] It showed that the disability dimension was all but non - existent in most PRSPs.

**UNESCO's** mission is to promote Education for All in the spirit of the Salamanca Statement and Framework for Action (PDF doc).[39] The right of disabled children to education is a central theme but often hampered by the physical, social and attitudinal obstacles that bar their way to schooling.

**UNICEF** has a number of programmes on water and sanitation.[40] One particular focus is on school hygiene. UNICEF also focuses on building the capacity of communities [41] and putting in place community-managed systems that are affordable and easy to maintain.
UNICEF emphasises the following principles of good practice in W&S projects:
- Working with women – the primary stakeholders in the area of domestic water supply and sanitation – and involving them at all stages of project implementation.
- Working with traditional leaders, faith-based and other community organisations and local entrepreneurs.
- Ensuring that facilities are suited to children's needs so that they will be encouraged to use them safely.

**WHO** focuses on CBR (Community Based Rehabilitation). The current concept of CBR is summarised in the Joint Position Paper (2002) of four UN agencies UNESCO, ILO, WHO and UNICEF. It emphasises the integration of disability concerns in general community development.

**United Nations Regional Commissions**:

**The ESCAP** (United Nations Economic and Social Commission for Asia and the Pacific**)** has produced Guidelines on non-handicapping environments [42] and piloted the approach in  three countries. The Guidelines include detailed design standards and parameters.

**The ESCWA** (United Nations Economic and Social Commission for Western Asia) participated in the elaboration of the Accessibility for the Disabled. A Design Manual for a Barrier Free Environment. This manual was prepared by the Urban Management Department of the Lebanese Company for the Development and Reconstruction of Beirut Central District (SOLIDERE) in collaboration with the ESCWA.

**The World Bank:**

For some years the Bank has had a disability focal point or project which became a Unit on disability and development [43] led by the Disability Adviser in 2003. The project first worked on disability and social protection issues. Recently, with new leadership, the Unit has put much effort to mainstreaming disability into the Bank's activities.

*"The World Bank not only finances development projects involving disability components - such as in* [education](#),[44] [health care](#),[45] [infrastructure](#),[46] *employment, de-institutionalisation,* [children and youth](#) [47] *- but also works in a wide variety of disability-related fields, such as data collection and statistics, research and analysis,* [technical assistance](#) [48]*and* [knowledge sharing](#).[49]*"*

Infrastructure projects are supposed to include a disability component. This is not yet, however, very visible and evident. Studies and pilots are currently being prepared to maintream disability in the Banlk's activities including infrastructure projects.

Poverty Reduction Strategy Papers (PRSP) are the main framework for the Bank's cooperation with borrowing countries. The PRSPs have now become a general tool for coherent collaboration between donors in the field. The disability dimension has been connected with the *[PRSP Sourcebook](#)* [50] through a few reports that were commissioned by the Bank to STAKES and funded from the Finnish Trust Fund. The studies included the following sectors: Education, Health, Transport and ICT. The Bank's website makes available a number of basic reference documents on disability[51]. The inclusion of disability issues is not yet, however, explicitly required.

**The Inter-American Development Bank (IADB):**

[The Inter-American Development Bank](#) [52] has opened (March 2000) a dialogue among political and community leaders, representatives of the private sector and the media, and specialists to raise awareness on the importance of adopting policies that include persons with disabilities in economic and social life.

The initiative is titled "Dialogue on Development and Inclusion: Opportunities for People with Disabilities." IDB has focused in this phase on two main fronts: education and the labour market; transportation, infrastructure and urban design. The initiative also calls for new studies and reports on the magnitude of the problem and best practices and most effective projects. The video "Construyendo con todos: Discapacidad y desarrollo en América Latina y el Caribe"

"Development programs in such areas as infrastructure, city planning, housing, transportation, information technology, and education and training offer key opportunities to address access for persons with disabilities," noted Mayra Buvinic, chief of the IDB Social Development Division [Read more: IDB News](#) [53]

**The European Union:**

The EU has issued a [Guidance Note on Disability and Development (PDF doc)](#) [54] for EU delegations and services. It contains the general principles to be applied in EU foreign relations.

The main points of the EU guidelines are:
- Disability is a diverse and complex concept. People with disabilities do not form a homogeneous group.
- The course of action that emphasises the human rights of people with disabilities must be advocated and supported rather than the charitable and medical approach.
- There is a need to mainstream disability issues across all development programmes and projects. In addition, specific projects are needed for people with disabilities. People with disabilities must be ensured access to all activities supported by EU delegations.
- Mid-term reviews of country programmes must include an analysis as to what extent the programmes are responsive to the needs of people with disabilities.
- There is a need to ensure that all EU-funded development cooperation projects are truly inclusive of people with disabilities and their families.
- The needs of women and children with disabilities must be recognised.
- EU-funded training and employment programmes should enrol also people with disabilities. The EU should also employ people with disabilities.
- There is a need to ensure that the EU's own services are accessible for people with disabilities.
- Disability organisations should be supported and strengthened.

- Communication between disability organisations, the government and other stakeholders should be facilitated.

The EU guidelines suggest the twin track approach: mainstreaming disability in main programmes funded by the EU, such as transport and infrastructure, and also address the concerns of disabled people with specific disability projects. The guide suggests training EU delegation staff to raise awareness and the employment of disabled people in EU delegation offices in accordance with the ILO Code of Practice.

## 1.4.2 GOOD PRACTICE EXAMPLES IN POLICY DESIGN IN OECD COUNTRIES

A number of OECD countries have policies towards disability. There are several types of approaches. Some countries have a specific policy or policy document on disability and development (the Nordic Countries, USA, Australia, UK). Some countries include disability indirectly in their policies (The Netherlands, Canada). Some countries do not mention disability but consider it within the focus on poverty and vulnerable groups (e.g. the Netherlands). A more systematic study would be required to determine the extent and adequacy of disability coverage in policies and actual operations.

Below are some useable details on good practice in policy formulation and project planning:

**Germany**

The German Government's Programme of Action towards halving extreme poverty[55] worldwide by the year 2015 has a strong focus on the participation of poor people. It recognises that poor people are not an homogenous group, and that gender equality and non-discrimination policies are crucial factors. It mentions disabled people as an important target group in relation to enhancing 'social security'. Departing from capacity building projects for orthotic and prothetic technologists[56], integrated approaches and projects aiming at the social and professional integration of people with disabilities have also been developed. In the long run, German DC wants to integrate the topic as a cross-cutting issue in appropriate fields of action such as education, social protection and vocational training.

**The Nordic Countries**

The Nordic Countries have been active in the mainstreaming of disability in development cooperation for many years. In Denmark, Norway, Sweden and Finland a major role is given to disabled people's own organisations in policy making, planning and implementing the interventions. The Swedish SIDA, Danish DANIDA and Norwegian NORAD use disabled people's own umbrella organisations as planners and implementing agencies of disability projects.[57] Finland is increasingly involving FIDIDA (Finnish Disabled People's International Development Organization) in policy formulation and evaluation of disability projects

This has led to a very visible disability component in development cooperation. However, it may also have contributed to the situation where most disability relevant operations tend to be disability specific rather than inclusion of disability into mainstream.

**Norwegian Agency for Development Cooperation (NORAD)** has produced detailed guidelines on Planning and Monitoring for the Inclusion of Disability Issues in Mainstream Development Activities (WORD doc) (2002) [58]that has been adopted by the Norwegian Ministry for Foreign Affairs. This document also builds on the Norwegian Ministry's Plan that was endorsed in November 1999. A key strength is that it integrates an overview of key policy issues with a very practical section on how to include the disability dimension in development cooperation programme and project cycle management. Read more: Norwegian views on Poverty Reduction Strategy Processes in Partner Countries(WORD doc) [59]

**Finland** has prepared a disability and development policy in collaboration with disabled people's organisations, disability and development experts and the Ministry for Foreign Affairs. In the process, A Proactive Evaluation of the Finnish Development cooperation from the Disability Perspective (PDF doc) [60] was commissioned to STAKES. The study followed the framework presented in the previously

mentioned UN Manual. [61] The evaluation revealed that most of the projects and funds were channelled through NGOs and were targeted towards disabled people. Mainstreaming is rather an exception than a rule. However, in the policy disability has been defined as one of the crosscutting issues to be taken into account as a human rights and social development issue in all operations. Amongst others, Finland supports the World Bank's Disability and Development Unit financially together with Norway.

**USA**

The US Agency for International Development (USAID) has a very explicit policy on disability **"**To avoid discrimination against people with disabilities in programmes with USAID funds and to stimulate engagement of host country counterparts, governments, implementing organisations and other donors should promote a climate of non-discrimination and equal opportunity for people with disabilities " Read USAID policy paper on disability (PDF doc). [62]

The US policy seeks balance between prevention, rehabilitation, equalisation of opportunities and barrier-free access in the spirit of the Americans with Disabilities Act (ADA) legislation. USAID Bureaus are to ensure that "issues are reviewed with respect to the enabling environment, regulatory concerns, quality assurance standards and maintenance of donor-financed disability activities." Furthermore, the staffing of the USAID offices are expected to reflect the non-discrimination policy. Consultation with disabled people and participatory approach is recommended.

Program Planning documents, and hence, as applicable, contracts, co-operative agreements, and grants "should include language that stipulates that people with disabilities are part of the target development community and that activities should be designed to accommodate their inclusion." Read more on USAID policies. [63]

**United Kingdom**

The UK DFID proposed a comprehensive approach to mainstreaming disability (PDF doc).[64] There are a number of issues included such as the following: better data, integration of disability into existing social, educational, health and labour structures, effective participation of disabled persons in decision-making processes through using local and international guidelines for infrastructures, ensuring that buildings are accessible and taking account of transport needs;  acknowledgement of disabled persons in all training materials; access to information in barrier free formats; assessment of impact on disabled persons/families in evaluation.

**Australia**

Australia's aid policy in relation to people with disabilities is based on the social model of disability and supports a rights-based approach to sustainable development. It aims to promote practical approaches to the inclusion of people with disabilities as participants and beneficiaries in all development activities implemented in partnership with developing countries, other donors and international development agencies. [65]

**Japan**

JICA ( Japan International Cooperation Agency) has included disability issues as part of the focus on vulnerable and disadvantaged people. The strategy is outlined in "The Government Action Plan for Persons with Disabilities – A Seven-Year Normalization Strategy" of 1995. It has supported the United Nations by e.g. secondments of disability experts and funded a number of projects. *"At the same time JICA is working to promote consideration for persons with disability in other areas of cooperation, even those areas that do not directly target them."[66]*

### 1.4.3   EXAMPLES OF TOOLS FOR INCLUSIVE DEVELOPMENT PLANNING

Back in 1987, following the review of the UN Decade of Disabled People it was evident that not enough progress had been made in integrating disability issues into development cooperation. The Government of Finland pledged to support the UN Disabled Persons Unit by making available funds and an expert to elaborate a manual on integrating disability into development cooperation projects: *The Disability Dimension in Development Action: Manual on Inclusive Planning (PDF doc)*.[67] The focus is on the mainstreaming of disability and turning the focus from adapting the disabled individual to adapting societies to accommodate people with disabilities. This turn of focus was implied by the long-term strategy "Towards a Society for All" that was prepared parallel to the Manual.

This instrument was prepared in collaboration with UN organisations, individual experts and disabled persons organisations. It has, in turn, influenced the Nordic Countries' policies and approaches to disability and development. The Manual contains policy guidelines and project planning guidance as well as checklists. There is also a simple tool, the Rapid Handicap Assessment (RHA), a 10 point list for checking whether the project (document) is handicapping (discriminating) or not. It is adapted to follow the EU project documentation format. An application of the approach to evaluation can be found in the Label us able" report (PDF doc) which also contains a disability sensitivity checklist for PRSPs .

Some countries have elaborated their policies into practical tools. For instance, the Norwegian Agency for Development Cooperation NORAD has prepared the NORAD policy document (WORD doc) that contains checklist for various stages of the project cycle.[68]

**MIUSA** (Mobility International USA) sponsored by USAID has produced a comprehensive manual: Building an Inclusive Development Community Manual [69] to support the implementation of USAID policy on disability. The Manual contains strategic guidance and checklists for making one's own organization accessible, on accessibility to various sectors and on practical implementation in the field.

It is evident that there are good models available for feasible policies and tools for including disability concerns in development cooperation. However, disability matters are too often left to disability experts or outsourced to disabled people's organizations. This approach ensures that the specific expertise on disability is effectively utilized in each project. At the same time it does keep disability as a marginal issue that does not need to be considered in mainstream activities that deal with other issues than social protection.

There is a need to decide on inclusive policies. There is a need for closer interaction between mainstream planners, disabled people and their organizations. For this interaction to be productive development project planners must learn about disabilities - and disability experts must learn about development project planning.

Integrating Appropriate Measures for People with Disabilities in the Infrastructure Sector

# 2  Infrastructure and Disability

Inadequate infrastructure is a major cause for ill health and disabling conditions. Inaccessible infrastructure further impoverishes the already poor disabled people. Women and girls with disabilities are multiply disadvantaged and discriminated against. In developing countries aging due to past population growth is rapidly increasing the number of people with disabilities. While in some cultures disabled people may be well integrated in the traditional informal safety nets in rural areas, the rapid pace of urbanization has led to the concentration of a large number of disabled people in cities where the only means for making a living often is to engage in begging.

The role of properly designed infrastructure is particularly important in efforts to prevent disabilities. This is particularly true for road safety issues in urban areas, for indoor pollution (to prevent eye, skin and respiratory diseases of women and children) and for water borne diseases such as river blindness, malaria and sanitation related issues.

Donors have been reluctant to allocate additional funds for financing disability related components in infrastructure projects. Given the opportunity costs of such investments vis-a-vis enlarging infrastructure coverage and general access, partner countries often do not see such investments as priorities. However, improved accessibility of environments, technology, products and services from the disability perspective improve the quality of the environment and services for all people. Designing development interventions to benefit all is not an economic burden if done at the inception of the planning phase. Rebuilding and reconstructing inaccessible facilities is usually expensive.

In this chapter the water and sanitation, transport and energy sectors are viewed through a "disability lens". As disability considerations are not the mainstream of planning and practice in development cooperation or domestic policies of economically poor partner countries good practice is scarce. There are, however, a few outstanding projects that are documenting and producing good examples. To bring such practices on the agenda will require much awareness raising, knowledge sharing and research.

## 2.1 Water, Sanitation and Disability

Poor water resource management and inadequate sanitation are major causes for disabling conditions. Correspondingly, studies of the World Bank revealed that investments in water and sanitation are a cost-effective measure to increase healthy life years. Water and sanitation service systems have seldom been planned so as to accommodate people who have functional limitations. This can exclude disabled and older people as well as children from using communal facilities that are needed by and meant for all. Furthermore, restricted access to water and sanitation services leads to a much higher risk for disabled people for contacting diseases.

Further reading on Water and Sanitation issues on WHO website Water, Sanitation and Health [70] and on the WorldBank website on Water supply and sanitation. [71]

WHO and UNICEF have formed a partnership to follow up progress on global water and sanitation goals through the Joint Monitoring Programme (JMP) for Water Supply and Sanitation since 1990. The JMP deals with the development of monitoring systems and indicators to provide comparable data among countries. They also inform policy makers about the status of the water supply and sanitation sector worldwide through publications.

Further information about UNICEF and the JMP can be found on the Unicef website [72] and on the JMP programme site [73].

Over 40 billion work hours are lost in Africa alone due to fetching water by women and girls. They are also the main carers of disabled members of the family. The time-consuming domestic duties too often make it impossible for girls to go to school and for women to engage in activities that would bring

incomes to the family. Recent research by Water Aid, a non-government organisation, highlights the importance of water and sanitation in achieving education improvements, especially for women. For example, a project in Ethiopia reduced the time required each day to collect water – the job of women – from six hours to less than 20 minutes. A school sanitation programme in Bangladesh increased the enrolment of girls by 11%.

Read more about Water Aid [74]

There appears to be a chronic mismatch between, on the one hand, a growing recognition of the links between better water and sanitation provision and other development goals, and on the other, the lack of priority given to them in recent overseas aid programmes. Moreover, meeting the water and sanitation needs of the poor - and the 20% of disabled people among them - involves more than building pipes and sewers in the right places. At the heart of any infrastructure policy on water and sanitation should be the realisation of competing interests of industry, agriculture, urban and rural communities, tourist facilities, water wasteful hydroponically grown vegetables for richer countries, etc. The markets do not yet seem to be ready to internalize the costs of accessibility improvements. There is a need for public sector intervention through the elaboration of incentives, disincentives, regulation and standards.

Water and especially sanitation needs of disabled people have, however, seldom been taken into consideration by planning authorities and donor countries. Aside from the Water Engineering and Development Centre at Loughborough University (WEDC) there are few studies of note which focus directly on the topic. Consequently, there are few examples and hardly any viable statistical information on disabled people and water and sanitation to draw on. [75]

### 2.1.1 PREVENTION OF DISABLING DISEASES

According to WHO definition, water related diseases include those caused by:
- micro-organisms and chemicals in drinking water;
- parasitic diseases which have part of their lifecycle in water (e.g. like schistosomiasis)
- parasitic diseases with water-related vectors, such as malaria;
- others such as legionellosis carried by aerosols containing certain micro-organisms;
- arsenic and other contaminants in the water (e.g. Bengal and Bangladesh)
- drowning and injuries;

Diarrhoea alone currently takes 1.8 million lives each year – many are left permanently debilitated.

WHO's efforts and policies have a strong bearing on infrastructure strategies. Its "aim is the reduction of water- and waste-related disease and the optimization of the health benefits of sustainable water and waste management." [76] The organisation has produced a wealth of information and guiding documents: International norms (guidelines) on water, sanitation and hygiene [77] and information on Water related disease. [78]

The prime thrust of WHO's Water, Sanitation and Health Programme focuses on:
- health impact assessment [79]
- intersectoral collaboration, and [80]
- environmental management [81]

Water resource development projects tend to either increase the number of vectors or increase the contact between the vectors and people. Consequently the risk of water borne diseases increase and the net total benefit of the project is much reduced. According to WHO, two requirements must be fulfilled if such an increase is to be prevented: the first is a strong and binding commitment to finance and implement projects which maintain public health and safety, to care for the environment and to consult with and provide adequate resettlement for displaced communities; the second is a rapid, simple and cheap procedure for determining whether, and how, the first requirement can be fulfilled.

Read more about the guidelines for forecasting the vector-borne disease implications of water resources development. [82]

Water resource development projects are usually planned by economists, agricultural specialists and engineers, debated by politicians and contended by community groups without the input of experts in disease prevention. The WHO expert group has worked out guidelines to provide a basis for rapid assessment usable by those without specialist knowledge in health. However, it is advised that all relevant stakeholders, including the health sector be involved right from the start.

With the report "Healthy Villages - A Guide for Communities and Community Health Workers [83]", WHO covers such topics as water and sanitation drainage, waste management, housing quality, domestic and community hygiene, and provision of health services, providing extensive source materials for adaptation to local needs and conditions.


### 2.1.2 ACCESS TO WATER AND SANITATION BY DISABLED PEOPLE

Toilet facilities that have not been planned and equipped with consideration for people with mobility or visual difficulties are hazardous. People who are unable to walk end up crawling on the floors of public toilet facilities that have too high thresholds, too narrow doors, too little space, no handles etc. An important factor in accessibility to water is proximity. The benefits can be tangible as proximity allows functionally disabled people to draw water by themselves. Proximity also reduces the time and effort in getting to and transporting water. Smaller quantities of water tend to be drawn each time, which is feasible for many disabled people who would not be able to carry large amounts. It should be noted that good access to W&S benefits not only the disabled person but the whole family and neighbours as well.

However, there are various local solutions [84] focusing on mainstream rural populations that enable them to access water sources and toilet facilities. The most pertinent systematic study on rural disabled people was undertaken by the Water, Engineering and Development Centre (WEDC) at Loughborough University and commissioned by DFID/UK. The study made field observations in Bangladesh, Uganda and Cambodia.

Read more about access to water and sanitation for disabled people in low-income countries: Water related disease and Water and sanitation for the disabled in low income countries [85]

Toilet facilities in urban environments are also rarely accessible,  despite that standard solutions are readily available. These are often applications of western accessibility norms and guidelines. The ESCAP guidelines on barrier free built Environments [86] is a thorough guide to various accessibility aspects in the urban environment including the design of washrooms and toilets including piped water and related community facilities.


### 2.1.3 EXAMPLES OF DESIGNS AND TOOLS

Taking into account the sources of information mentioned this far[87] a range of good examples with positive impact  already exist.

The Water, Engineering and Development Centre (WEDC), Loughbourough University, UK has compiled several examples of good practice in toilet design and access to water pumps. The researcher has come across bamboo toilet seats in Malaysia, a bamboo lever action well and ramps to water sources in India, and a treadle-operated water pump for a disabled woman in Sri Lanka. However, these are all one-off solutions rather than the utilisation of design-for-all approaches to solve a serious problem faced by disabled people across geographical and cultural boundaries. The British Intermediate Technology Group (ITC ltd.) which has been working in developing countries since the mid-sixties has several water and sanitation examples for poor mainstream populations but none for disabled people. There is an urgent need to build on whatever good practice is available.

Read more about WEDC [88] and ITC ltd. [89]

The Small Town Pilot Project in Peru (STPP) is another example of mainstreaming with the collaboration of municipalities and the private sector. Some governments (Cambodia, Bangladesh, Peru, etc) are beginning to specify requirements in contracts with the private sector, NGOs and other organisations. Simple modification of existing participatory processes can ensure inclusion of disabled people. There is an increasing pace to develop good practice in communal facilities through national programmes of development for awareness raising.

Read more about the International Water Management Institute [90]

However, it becomes obvious that there is still little communication between the disability and the water and sanitation sector. Disabled people's organisations and organisations working with disabled people have not raised the issue of access to water and sanitation in a consistent way. Moreover, lessons from implementation within individual organisations have not been documented properly or shared more widely.

It is obvious that people with different impairments often have different access requirements. More importantly, the issues and needs of disabled women often differ from those of disabled men and therefore need to be consulted separately. Disabled people generally know their own needs, but often don't know how to communicate their requirements to the technical sector. A significant stumbling block is the low level of current use of latrines/sanitation in the poor rural population which also leads to limited understanding for the need of improved sanitation for disabled people.

### 2.1.4 INFRASTRUCTURE CONSIDERATIONS

There is a crucial need for targeted information aimed at both the disability and the water and sanitation sectors, in raising awareness and in improving practical implementation.

In addition to the above information, disabled people and their families need case studies illustrating the benefits of accessible options. The current knowledge gap on issues of accessibility needs to be addressed, which could be done in several ways: existing information, especially in the form of printed exemplars that use photos, culturally tempered graphics, icons or symbols, etc., needs to be made more widely available; organisations currently involved in good practice – especially those prioritising the most vulnerable, should be encouraged to document and share their knowledge and experience, e.g. in the process of needs assessment.

DPOs and disability sector organisations should be invited to participate in the development of strategy to implement national and local policies on W&S to help identify practical ways to include disabled people. For example, there should be clauses in government / private sector contracts to ensure the poorest and most vulnerable are served with appropriate W&S.

Water and sanitation sector agencies should be invited to comment on draft disability legislation, with a view to remedying significant omissions and to discuss a framework for implementation. In each urban situation there is the need to perform diagnostics of the prevailing legal framework, the structure of the W&S organisation, the governance within which providers operate, regulations, commercialisation (with explicit budget support as necessary), social and environmental protection, and expansion of the role of the private sector. Barriers to private sector providers (PSPs) need to be identified including their potential role in rural areas. A critical requirement is to identify the triggers and constraints for changing existing habits and behaviour patterns amongst disabled users and their families e.g. risks of open defecation and other insanitary practices and provide technical information on alternative latrines, such as their costs, construction and maintenance requirements.

### 2.2.1 ROAD SAFETY AND THE PREVENTION OF DISABLITIES

Traffic accidents are a major source of premature deaths, lifelong disability and losses to households, as well as to the public and private economy. Lack of access to transport creates income poverty. Inaccessible design of the transport services chain also bars access to disabled and older people, and many other groups to social, political and cultural activities and thus perpetuates exclusion.

According to the World Report on Road Traffic Injury Prevention (WHO 2004)[91], injuries are a growing public health issue disproportionately affecting vulnerable groups of road users including the poor. The database/DFID/WB conclude that in 1999 there were at least 11 million injuries in Highly Motorised Countries (HMCs); 12 - 34 million in Less Motorised Countries (LMCs). The global estimate is between 23 and 50 million road accident injuries per annum. World-wide, the number of people killed in traffic accidents is estimated at almost 1.2 million. An unknown number of injured people will end up with functional problems and dependant on others for their needs. More than half of the people killed in traffic accidents are young adults aged between 15 and 44 years – often the breadwinners in the family. Furthermore, road traffic injuries cost low income and middle income countries between 1% and 2% of their gross national product – more than the total development aid received by these countries.

For further information see:
World Report on road traffic injury prevention (PDF doc)

According to WHO and Red Cross studies traffic accidents will become even more prevalent. The most vulnerable group for accidents are pedestrians and cyclists. But especially in the case of road traffic, crashes and injuries are preventable. In high-income countries, an established set of interventions have contributed to significant reductions in the incidence and impact of road traffic injuries. Reduction in road traffic injuries can contribute to the attainment of the MDGs that aim to halve extreme poverty and significantly reduce child mortality. Road traffic injury prevention must be incorporated into a broad range of activities - the health sector is an important partner in this process. Road safety can be seen as an investment issue in urban areas, a technical assistance issue for rural areas, and a mitigation issue particularly for railway projects (e.g. stations) and partly for town planning/urban traffic. It is clear that if donors do not invest in urban transport there will be little chance of implementing changes to benefit potential disabled users of the transport sector.

The economic consequences of road traffic injuries include costs of prolonged medical care and loss of income due to disability, which , especially in many low- and middle-income countries can push families into poverty. Such costs typically consume between 1.0% and 2.5% of a country's gross national product. In low- and middle-income countries, the costs are estimated to be US\$ 65.000 million per annum.

See details on: Road safety and health (PDF doc)[92]

A specific case study on the issue of rural road and poverty alleviation in Morocco [93] has been commissioned by the World Bank. The remit of the study is predicated on The Shanghai agenda for poverty reduction (PDF doc) [94] which concludes in its point 23 that "Inclusion is critical in all aspects of scaling up. Special attention must be given to the plight of the ultra-poor, to gender disparities, to the participation of youth and to the disadvantaged and disabled."

### 2.2.2 ACCESSIBILITY OF TRANSPORT SERVICES TO DISABLED PEOPLE

Various studies and analytical approaches highlighted in the links below indicate the problems that disabled people face when trying to use transport systems: **physical** barriers, esp. for those using wheelchairs and other mobility aids, **structural** barriers (eg. the lack of assistance from operators and drivers), but also **psychological barriers** and fear for **personal safety** when using transport systems

as well as obstacles in accessing information. There is an urgent need for a comprehensive approach of tackling those barriers. For example, it is not sufficient to eliminate physical barriers if no assistance in using enabling installations is given or if others ignore and block them. Disabled people themselves often cite the attitudinal barriers as being very important. [95]

Structurally, it would be beneficial if planners and service providers focused on a wider group of 'mobility impaired' users which would encompass older people, those who are illiterate, women late in pregnancy and young children, in addition to people with disabilities. Moreover, it should be noted that disabled people are not a homogenous group but have varying transport requirements due to sensory, cognitive and movement limitations and multiple disabilities.

A DFID funded research project in Pune, India, Blantyre, Malawi and Maputo, Mozambique[96] studied and analysed good access practice for disabled people, esp. concerning bus shelters, safer street crossings, accessible footways, bus entry and driver training.

The research which included focus group discussions and workshops with disabled people stated that low progress in eliminating those barriers was not only due to scarce funds but also to a lack of good practice available which sometimes resulted in the design of non-appropriate or unsufficient approaches. The research concluded that good access has to take four essential elements into account. Those are Safety, Accessibility, Reliability and Affordability ('SARA'):

> "**Unsafe** conditions both deter vulnerable users, and contribute to further injury and disability. **Accessibility** requires that services be designed and operated with a wide range of physical, sensory and mental abilities in mind. **Reliability** of services and assistive devices has proven to be extremely important to vulnerable travellers. Access solutions need to be **affordable**, both to the user (who is often poor) and to the provider, to be sustainable in the long run."

[Venter & al: Practical solutions for transport access of urban residents with disabilities](#) [97]

As noted earlier, these criteria should be applied to the whole transport system[98] in order to produce a usable solution to people with mobility restrictions:

- Infrastructure (terminals, stations, stops, service and rest areas)
- Vehicles (railway, metro, bus, taxis, jitneys, boats)
- Interface (platforms/sidewalk)
- Information (schedules, signing, spoken information)
- Service (personnel's attitudes, behaviour, driving habits)

A study by E. Alvarez reminds us that accessibility features must satisfactorily incorporate or be compatible with other criteria[99] such as:
- Safety also for non-disabled users
- Funding possibilities
- Design
- Setting
- Cultural heritage

The cost of accessibility improvements depend on the desired level of accessibility and the extent of technology required. Basic physical accessibility of the transport environment is not costly if done at the design and construction phase. Rather it is part of basic quality criteria. Even many technological elements are relatively cheap: according to United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) estimates a lift for a bus costs 5% of the total value of the bus.
More information about [UNESCAP and poverty reduction](#) [100].

Accessibility is a public good that benefits several groups of people, not only people with disabilities. It should be noted that if the costs of accessibility are not shouldered by the operators or public authorities the burden of direct and indirect costs of inaccessibility of the transport system falls on disabled people and their families which is an unacceptably inequitable situation.

## 2.2.3 DESIGN CRITERIA

There are directly applicable design criteria and tools for evaluating and planning of accessibility. As far as the physical environment is concerned, the ESCAP guidelines[101] and the UN Accessibility Manual provide checklists and design criteria.

A DFID funded project also provides specific accessibility solutions to the transport system.[102]

The report Mobility for All. Accessible Transportation around the World [103] contains guidelines and illustrations and photos of accessibility solutions.

The NGO Access Exchange International, which promotes accessible public transport for persons with disabilities and seniors in Africa, Asia, the Americas, Russia and eastern Europe,  also gives illustrated examples of low cost special transport for people with disabilities [104]

The MIUSA Manual contains general guidance on vehicle design, operational practices, strategic advice and cases on accessible transport systems.[105]

## 2.2.4 IMPLEMENTATION AND ENFORCEMENT MECHANISMS

In accordance with the principles of the Standard Rules, accommodating people with functional limitations is predominantly the duty of each sector that provides services to the public. Unregulated privatization has, however, made it even more difficult to get the SARA considerations to be taken into account in vehicles, systems and behaviours. However, while SARA improvements would benefit all users, markets do not have  proper incentives to provide better quality.
Adequate legislation, comprehensive design criteria and sufficient education and training of concerned parties are the cornerstones for the creation of a barrier-free transport environment in developing countries.

The World Bank commissioned study, Transport, Poverty and Disability in Developing Countries, [106] concluded that the most efficient mainstream strategy for promoting a barrier-free transport environment should include a combination of different approaches but stress the significance of a particular approach at an appropriate stage of development:

- *Economic approach, which emphasizes the cost-effectiveness and other economic benefits in increasing the involvement of different sectors of society in the promotion of an accessible built environment.*
- *Incentive-disincentive approach, in which the promotion of accessibility is encouraged by a combination of incentives (e.g. through public procurement policies).*
- *Good practice approach, which aims at incorporating the creation of barrier-free environment into everyday thinking in society.*
- *Mandatory approach, which is based on the compliance of legal instruments or administrative decrees.*
- *Initiative approach, which focuses on increasing the sensitivity and responsiveness as well as promoting the active role of different sectors in society to the access needs of people with disabilities.*
- *Social responsibility approach, which emphasizes the fulfillment of the responsibility of different sectors of society to contribute to the elimination of barriers encountered by people with disabilities.*

Meriläinen & Hellaakoski, Transport, poverty and disability in developing countries (PDF doc)

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### 2.2.5 STRATEGIC CONSIDERATIONS

Improving access and mobility of people with disabilities is a necessary element for alleviating poverty in developing countries. Best practice frameworks indicate the basic progression that has been observed in countries in the developing world, with regard to access and mobility needs of passengers with disabilities. Progression should be grouped into three stages: a basic rights and personal mobility stage, an environmental access and special programmes stage, and lastly a focus on public transport. [107]

Most of the least developed nations are dealing with problems and issues in the first and second stages, while some have progressed beyond these to implement responses to the third stage. This common progression of responses suggests some critical issues that may need to be considered by professionals and advocates for accessible transport, such as, advocacy by disability organizations which can play a major role in putting access issues on the social agenda. In countries where very little progress has been made in accessibility, the strengthening of effective advocacy may be amongst the most important immediate interventions needed.

Improvements in accessibility requires a system-wide and integrated approach to be functional. It requires the setting of standards and the decision on the level of accessibility to be achieved. [108] An incremental approach is often the most feasible solution - to start with new construction of the transport environment and new vehicle stock is more cost effective than retrofitting old stock.

Issues of access to personal mobility devices and affordability of public transport are still major challenges in many developing communities. It may be sensible to focus constrained government budgets on improving access to wheelchairs, canes and the like as a matter of priority. Concessionary fare schemes should be applied with caution to suit local circumstances.

In countries where anti-discrimination legislation has laid the foundation for moving towards greater inclusiveness in transport, there is a need to translate legal principles into concrete actions for implementation. It is at the level of strategy formulation and programme development for transport that many developing countries could benefit most significantly from the sharing of international experience. As long as local circumstances are taken into account, there can be significant benefits in transferring technical standards and good practice across countries.

Read more: Improving the accessibility of transport services [109]

## 2.3 Disability Considerations in the Energy Sector

### 2.3.1 IMPLICATIONS OF ENERGY USE: INDOOR AIR POLLUTION AND DISABILITY

More than a third of the world's population, 2.4 billion people burn biomass (wood, crop residues, charcoal and dung) for cooking and heating. When coal is included, a total of 3 billion people – half the world's population, cook with solid fuel. The smoke from burning these fuels turns kitchens in the world's poorest countries into death traps. It contains many hazardous chemicals including a number which are carcinogenic. The combustion produces also large amounts of particulate matter including fine particles which penetrate deeply in the lungs and causes health damage.

Indoor air pollution causes acute respiratory infections (ARI), such as pneumonia, chronic obstructive pulmonary disease, perinatal conditions, middle ear infections, blindness and cancer. In addition, there is evidence to link indoor air pollution to asthma, low birth weight and infant mortality, tuberculosis and cataracts. It is the fourth greatest risk to death and disease in the world's poorest countries and causes 1.8 million deaths per year. Especially endangered are children under five years. Acute respiratory infection is one of their primary causes of morbidity and mortality due to spending a large amount of times indoors, close to the cooking place. In this context, it is also a major cause of disabling conditions. While the world spends millions of dollars combating levels of pollution in

Western cities, it has neglected to tackle the death toll caused by lethal levels of smoke in the homes of the poorer world.

Read more about air pollution and health:
GTZ - Household Energy Programme, HEP [110]
Exposure to indoor air pollution from the combustion of solid fuels (PDF doc)[111]
Health aspects of air pollution (PDF doc)[112]
Air quality and health [113]
Addressing the links between Indoor Air Pollution, Household Energy and Human Health (PDF doc) [114]

In 1994 the World Bank launched an Improved Stoves Programme which had wide ranging ramifications way beyond the upgrading of stoves. The lessons learned are crucial to this report. In successful sites like Sri Lanka the programme not only provided employment opportunities for stove producers and builders but also income for distributors and sellers. Additionally, the programme enhanced the technology development capacity of local artisans/research organisations/agencies. It is clear that if interventions can work on the economic level, they can become sustainable, running without the further interventions of external agencies. The success in Sri Lanka highlights that such programmes can raise awareness about environmental, ecological and energy concerns, and educate at national and household levels about health, safety and hygiene. Key programmes can act as a springboard to other community and gender development initiatives.

For further information see Worldbank Indoor Air Pollution Newsletter, Issue No. 3/2000 [115]

It is interesting to compare the improved stove programme in China, which had a high level of success, with that in India, which produced mixed results. The Chinese scheme was a national programme with effective and targeted local implementation. The Indian scheme attempted national implementation of a centrally controlled programme. Read more: ITDG Smoke Report.[116] and ITDG - Smoke Report - Appendix [117]

| China | India |
|---|---|
| The programme focused on areas with the greatest need and selected pilot counties with biomass fuel deficits. | The programme was implemented country-wide, resulting in dispersion of effort and dilution of financial resources. |
| Direct contracts between the central government and the county bypassed much bureaucracy. This arrangement generated self-sustaining rural energy companies that manufacture, install, and service stoves and other energy technologies. | The programme administration was cumbersome, moving from the centre to the state level, then to the district, and finally to the taluka, where the stove programme is just one of many national efforts being implemented locally by the same people. |
| Local rural energy offices run by provincial governments are in charge of technical training, service, implementation, and monitoring for the programmes. These efforts are separately funded and relatively independent. | Lack of a strong monitoring plan was a severe weakness in early programmes. Some improvement has occurred through assignment of the task to university-based technical backup units. Coverage is still incomplete, however. |
| Stoves are not only suitable for fuel savings and reduction of household smoke, but also are designed for convenience and attractiveness, highlighting the lessons learned from problems in early programmes that stressed only fuel savings. | India has made a wide variety of attempts to integrate efficiency and convenience, which have suffered from the top-down structure of the programme. |
| Stove adopters pay the full cost of materials and labour. The government helps producers through stove construction training, administration, and promotion support. | Stove adopters pay about half the cost of stoves; the government pays the rest. As a result the producer's incentive to construct stoves is oriented towards the government. |

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| | |
|---|---|
| Emphasis has been on long-lived stoves made of ceramic or metal and otherwise designed to be a significant household asset for a number of years. | Many of the stoves have been made from local materials and by unskilled villagers, resulting in short lifetimes in day-to-day household use. |

## 2.3.2 ACCESS TO ENERGY SERVICES BY DISABLED PEOPLE

Over 1.6 billion people today have no access to electricity, including 80% of the people in sub-Saharan Africa. Read more: Energy for the Poor (PDF doc) [118] . However, access to basic, clean energy services is essential for sustainable development and poverty eradication, and provides major benefits in the areas of health, literacy and equity. The MDGs for halving poverty cannot be achieved without improved energy services to increase production and income, create jobs and reduce drudgery. Improving health and reducing death and disability rates will not happen without energy for the refrigeration needed for vaccination campaigns and lighting for maternity services.

Achieving MDGs means reaching the poorest and isolated communities with disabled individuals. Most of them live in rural areas, though there is an increasing marginalised urban population who have no access to basic services. Poor (disabled) people often have limited choice of technologies that convert energy to useful services. To date the technologies most readily available to them are typically inefficient or of low quality, so they end up paying much more per unit of useful energy service than the rich. Women whether disabled or not generally bear the brunt of generating energy through their labour at home.

See Worldbank document: Energy, Poverty and Gender - A Synthesis [119] (PDF or WORD doc)

Renewable resources are indigenous, do not require fuel purchases, and can be used locally for power generation. They are particularly advantageous for off-grid applications. In fact, the future of renewable energies in the developing world may be determined by the extent they serve rural populations. Some households are nominally served, but service is so unreliable that they choose to invest in their own sources of power. In the absence of reliable grid power, residents become "self-generators" - they use diesel generators, kerosene lamps, lead acid batteries charged by diesel generators, candles, and diesel pumps. Many of these sources emit pollutants with adverse environmental and health effects. Kenya is a good example of alternative energy usage but it is beyond the reach of rural and urban poor and there is no information of its benefits to disabled people generally.
Read more: ITDG: Powering poverty reduction [120]
International Conference on Renewable Energies [121]

## 2.3.3 KEY ISSUES FOR INFRASTRUCTURE CONSIDERATIONS

At the policy and strategy level there is a need for a global campaign that matches the level of this chronic problem. There are well-tried design solutions which are cheap, local and easy to install. These solutions centre on improved stoves, smoke hoods, chimneys, improved ventilation and changing patterns of behaviour. There is an urgent need to disseminate good practice including the possibilities of linking up with micro-credit schemes.

Although solutions need to be based primarily around interventions that are sustainable in the market, donor funding can have a valuable and appropriate input, at least in the short to medium term. The recommendations in this report would provide a useful starting point for selecting priority actions and deciding how much, and where, funding can most usefully be made available. Research and policy should be co-ordinated and integrated where this is useful and appropriate. A mechanism for co-ordination should be established to support efficient collaboration and the dissemination of new research knowledge and experience with interventions and policy.

Action could be adopted more quickly if entry points on the issue of health impacts of household energy in various sectors were identified and developed, including: Integrated Management of Childhood Illnesses; focus for community action in the context of Healthy Cities projects; policies for

the oil and gas industry, national and local environmental action planning mechanisms; including the development of locally appropriate targets for air pollution and access to cleaner fuels; clearer linkage of energy issues (efficiency, ventilation, sources) in housing standards.

Tools[122] should be developed for application in household energy, including: community needs assessment; health impact assessment; standardised indicators to monitor progress with implementation and outcomes. The Global Village Energy Partnership (GVEP) and the European Union Energy Initiative (EUEI) have produced some useful tools for monitoring and evaluation. Read more: Global Village Energy Partnership Online [123]

Integrating Appropriate Measures for People with Disabilities in the Infrastructure Sector

# 3    Recommendations

## 3.1 General Recommendations

- Particular emphasis has to be placed on the prevention of disabilities. This is particularly important for urban transport projects, and for rural water supply issues targeted at areas with high incidence of specific water born diseases causing disabilities.

- While planning and designing public amenities and communal facilities that are intended to be used by all, basic appropriate requirements in design should be met as a matter of basic quality criteria.

- Include empowering support to disabled people and their organisations so as to enable them to participate effectively in the PRSP process.

- While most accessibility improvements serve all people, specific mitigation measures targeted for disabled and elderly people should include appropriate interface services (ramps tactile markings, large print figures and text, advisory services, accessible school transport etc.). Such services can often be made feasible through partnerships with other sectors, other donors or NGOs.

- Partner with the beneficiaries, such as disabled people and the elderly, and utilise their (user) expertise in planning, design, testing and monitoring of accessibility and general usability.

- Produce easy-to-use guidelines on disability inclusion at programme and project level and distribute to all stakeholders and arrange appropriate awareness raising and training.

- Establish a broader dialogue to seek understanding and consensus about the need, appropriate standards, costs and benefits of the inclusion of disability aspects in infrastructure projects[1].

- Include complementary (additional) social protection components/measures and/or the provision of personal assistive devices that facilitate the participation of people with disabilities.

### 3.1.1 POLICIES

- In order to establish a coherent approach decide on an overall mandatory inclusive policy as required by human rights standards, social development goals, other principles endorsed by the international community as well as cost-effectiveness considerations. Include equal opportunity non-discriminatory employment policies in development contexts, with particular attention to disabled women, as well as a high standard of occupational safety in all operations.

- Follow the principle of sector responsibility for non-discriminatory service for all, including people with disabilities. However, make financial provision for complementary components or target incentives or appropriate regulation to operators in order to cover people with disabilities on equal grounds.

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[1] For instance, some countries such as USA have a mandatory accessibility policy. Also the World Bank is in the process of producing a guiding note on baseline standards for its operations.

- Note that efficient environmental and public health measures, gender equality and non-discrimination on basis of other personal traits, basic services and basic social security for all, and high level of accessibility and usability in design of products, environments and services not only reduce vulnerability of the highest risk populations. Rather they constitute a necessary pool of public goods that benefit all. As markets often fail to ensure the supply of public goods there is a case for public intervention.

### 3.1.2 STRATEGIES

- Use a four pillar approach[2]:
  a) Design infrastructure projects so as to prevent disabling conditions in a sustainable way
  b) Include access for disabled people as part of the mainstream context and design the solutions to accommodate the difference of people cost-effectively as widely as feasible.
  c) Use additional, complementary disability components to ensure a wide coverage and high social quality of operations
  d) Partner with the intended beneficiaries, in this case add empowering support to disabled people and their organizations to tap their user expertise and to enable them to make their voice heard at the planning phase

- Take into account the rural/urban differences in the health risks, the situation of disabled people, the barriers they encounter and the feasible solutions. This often means that there are usable accessibility solutions and models for urban areas[3] readily available but in the rural context there is a need for tailored solutions and design.[4]

- Implement the equal opportunity employment policies in the field regarding local employees. Identify entry points where people with various disabilities could be involved in employment or other income generating activities in the context of the project.

### 3.1.3 IMPLEMENTATION MECHANISMS

- Include the disability dimension in sector policies, all relevant aid instruments and require the commitment by all public and private stakeholders. Include concrete quality criteria on safety and accessibility in tenders, public procurement and Terms of Reference of infrastructure projects.

- Include disability aspects in project cycle management procedures. [5]

- Produce easy-to-use guidelines on disability inclusion at programme and project level and distribute to all stakeholders and arrange appropriate awareness raising, training, appraisal, monitoring and evaluation mechanisms.[6]

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[2] This is the model applied by a number of OECD countries (See the background study). See also the UN documents.

[3] For instance: Accessibility for the Disabled: A Design Manual for a Barrier Free Environment (United Nations): http://www.un.org/esa/socdev/enable/designm
Also: Practical solution for transport access of urban residents with disabilities (Venter et al, PDF doc)

[4] For instance the studies by the WATSAN project: Access to Water and Sanitation for Disabled People (Water, Engineering and Development Centre (WEDC) at Loughborough University, UK): http://wedc.lboro.ac.uk/projects/new_projects3.php?id=60

[5] There are general model frameworks available. For instance, the Manual on Inclusive Planning provides a basic framework for inclusive donor policies and disability sensitive project cycle management. (Wiman, Ronald (ed.), Disability Dimension in Development Action - A Manual for Inclusive Planning (1996, 2003): http://www.un.org/esa/socdev/enable/publications/FF-DisalibilityDim0103_b1.pdf )

[6] A manual that contains a Rapid Handicap Assessment adapted to the EU project document format is available in the web: Ronald Wiman (ed): The Disability Dimension in Development Action: Manual for Inclusive Planning (Stakes): http://www.un.org/esa/socdev/enable/publications/FF-DisalibilityDim0103_b1.pdf

### 3.1.4 FINANCING

- Through consultation with stakeholders set priorities and apply an incremental approach in improving safety and accessibility. Start by applying improved quality criteria to new facilities/ services. The additional costs of basic accessibility (ramps, handles, railings, accessible W&S facilities, large print etc.) can be achieved at low cost if included at the planning phase. Advanced solutions (elevators, low-floor buses, ICT solutions etc) are more costly and should be seen as part of the cost of the modernising the infrastructure as a whole.

- Donors should consider facilitating disability inclusion with complementary grants in infrastructure operations.

- The additional benefits of inclusion in terms of social quality of the outcome, wider usability and markets, reduction of health and social risks, support to sustainable development targets etc. should be given due consideration as they support the objectives of sustainable development.

- The intangibles such as the creation of social capital, social responsibility of business and social development resulting from inclusive policies and good practice of non-discriminatory design and service should be considered.


### 3.1.5 MONITORING AND SHARING

- Use indicators that are disability sensitive and utilise disabled people's organisations as a source of user expertise[7]. Encourage and support forums for good practice exchange and particularly South-South cooperation.

- Make arrangements to compile, accumulate and disseminate examples of good practice in rural and urban contexts of developing countries.

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[7] Many OECD countries use disabled people's organisations as a source of expertise in development co-operation

## 3.2 Sector Specific Recommendations: Integration of Disabled Persons in the Infrastructure Sector

### 3.2.1 WATER & SANITATION

**Design integrated and inclusive W&S policies:**

- Decide on the principle that public W&S services must be planned and designed to be accessible to all by design including people with functional limitations.

- Include complementary measures or components targeted particularly at disabled people at community and family level.

- Accord a high priority to accessibility and cultural sensitivity of W&S facilities e.g. in schools so as not to block the participation of disabled girls and boys in regular schooling.

- Include the disability perspective in Water and Sanitation sector policies, baseline studies, project identification, planning, appraisal, monitoring and evaluation of W&S projects.

- Give high priority to raising awareness, preventing and managing water born diseases such as river blindness, bilharzia, malaria etc.

- Use participatory methods of community involvement to raise awareness and ownership. [8]

- Employ and adapt simple guidelines usable for stakeholders without expert specialist knowledge. [9]

**Apply accessible and appropriate design**

- In urban area projects, consult existing guidelines on accessible design of public/ communal W&S facilities.[10]

- In rural projects apply the experiences gained e.g. in DFID commissioned WATSAN project to identify feasible solutions for rural communities.[11]

- Use existing guidelines to produce model safety and accessibility guidelines e.g. for public procurement in the W&S sector applicable in rural and urban context respectively. [12]

- To be accessible, public built water and sanitation facilities should be fitted with rails/handles, non-slipping ramps and enough space for a disabled person to move around.

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[8] e.g. WHO - Healthy Villages - A Guide for Communities and Community Health Workers:
www.who.int/docstore/water_sanitation_health/Healthyvil/html/begin.htm#Contents

[9] WHO - PEEM 2: Guidelines for forecasting the vector-borne disease implications of water resources development:
www.who.int/water_sanitation_health/resources/peem2/en

[10] For instance: UNICEF Bangladesh has produced a booklet "Low-Cost Latrine Options" (UNICEF-GoB, 2003). It includes low-cost ideas for how to improve access for disabled people to toilets.

[11] Jones, et al., Delivering WATSAN services to disabled people (2003): http://wedc.lboro.ac.uk/projects/proj_contents/WEJY3%20-%20WSS%20Special%20Needs/www/outputs/SACOSAN%20paper_watsan%20for%20disabled.pdf
[12] Use ESCAP guidelines: Accessibility for the Disabled: A Design Manual for a Barrier Free Environment (United Nations): http://www.un.org/esa/socdev/enable/designm and Design-for-All principles.

### 3.2.2 TRANSPORT AND DISABILITY

- Provide more technical assistance to address road safety issues, including multisector linkages, legislation, enforcement, road infrastructure standards, establishment of road safety plans; inclusion of road safety issues in public awareness campaigns for health, transport, environmental and educational programmes.

- Support the review of legislation, regulations and standards for safety aspects in regard to road infrastructure, vehicles, town planning, health care systems, insurance and rehabilitation systems as well as the eligibility criteria of operators.

- Make appropriate policies, plans and provisions to improve safety and accessibility of roads, streets and transport service systems for the majority by emphasising the needs of non-motorized transport (space, side-walks, street furniture, traffic lights with sounds etc.).[13]

- Include accessibility requirements/standards to the plans and budgets of new facilities and services to ensure general usability and appropriate quality. In upgrading operations provide, as feasible, for specific accessibility improvements (such as ramps, elevators, bridges, side-walks, traffic lights with sounds etc.) in e.g. road/street construction, bus terminals, railway stations and harbours.

- Facilitate the adoption of local basic safety and accessibility standards of vehicles and the use regulatory methods as well as economic incentives/disincentives to enforce these.

- Introduce an incremental approach to set reachable goals to accessibility improvements.[14]

- Given that the major barrier as experienced by disabled people are the attitudes of operators, drivers, the public, and sundry service providers use awareness campaigns and training to improve attitudes and practices. Use disabled people and their organisations in planning and conducting of such events.

- Support the development of low-cost private/public special transport solutions to cater for disabled people (e.g. disabled school children) who have no access or who cannot utilize the existing stock.

- Improve the accessibility of and access to ICT applications and services of poor people including those by people with sensory, mobility, cognitive or skill limitations.[15]

- Use targeted support or social protection measures to enable the poor and people with disabilities, particularly school-age children, to use public transport. [16]

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[13] The documents referred to in this transport item and the transport chapter of the background study contain applicable guidelines and design standards.

[14] See e.g. Venter, et al. Practical solutions for transport access for urban residents with disabilities (2004): http://www.transport-links.org/transport_links/filearea/publications/1_834_PA4060-04.pdf (359 kb)

[15] e.g. Sandhu, Saarnio & Wiman: Information and Communication Technologies and Disability in Developing Counties (2001, PDF doc): http://siteresources.worldbank.org/DISABILITY/Resources/Technology/Information_and_Communication_Technologies_and_Disability_in_Developing_Countries.pdf

[16] Poverty, transport and disability in developing countries (World Bank, PDF doc): http://siteresources.worldbank.org/DISABILITY/Resources/Accessibility/Transport_Poverty_and_Disability_in_Developing_Countries.pdf

### 3.2.3 ENERGY SERVICES AND DISABILITY

- Give household energy greater funding priority in the context of health promotion and poverty reduction, targeting especially women and children who are amongst the most affected by indoor-air-pollution.

- Collect models of good practice in locally available safe cooking, lighting and heating equipment [17] and involve local disability organisations in the identification and design of safe and accessible cooking artefacts.

- Incorporate interventions in community development, Integrated Management of Childhood Illnesses (IMCI) and Mother and Child Health Care for health education and awareness raising concerning the effects of unsuitable facilities and habits.

- Establish mechanism for co-ordination to support efficient collaboration and the dissemination of new research knowledge and experience with interventions and policy.

- Integrate awareness components on safe cooking, lighting and heating practices  in nutrition programmes.

- Support the development of locally appropriate housing design that incorporates functioning ventilation.

- Use enabling Social Protection measures to support income generating activities by disabled people. For instance, support access to electricity and tools by disabled people to enable them establish small scale business or industries.

- Use targeting subsidies as part of eventual social protection programmes to enable families with disabled members to utilize modern energy sources.

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[17] Intermediate Technology Development Group website: www.itdg.org

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