

### III. SECTOR-SPECIFIC DISABILITY ISSUES

This section discusses sector-specific disability issues particularly in education, energy, health and nutrition, information and communication technology, infrastructure, transport and urban development, social development and protection, environment, and water and sanitation. Some sectors have developed clear-cut disability guidelines over a long period, while others have just begun to assess the relevance of disability issues to their sector.

#### Education

Disability may be the single most important factor that keeps children from attending school. A recent World Bank study shows that disability has an even stronger impact on school attendance than gender.<sup>49</sup> According to UNESCO, only one to two percent of children with disabilities in developing countries receive an education; and conversely the World Bank reports that roughly one-third of all children not enrolled in school have a disability<sup>50</sup> --of the 115 million children not attending primary school in the developing world, about 40 million are estimated to have disabilities. The global literacy rate for all individuals with disability may be as low as three percent and as low as one percent for disabled women.

Children with disability are excluded from education for different reasons. It can be lack of resources or capacity to accommodate their disabilities. In many cases schools are physically inaccessible. Also, relatively a minor medical condition could turn into a very disabling condition; in Brazil, about 40 percent of the children not attending school because of a disability were not doing so because of vision problems correctable by glasses.<sup>51</sup> In other cases, children with disabilities are excluded from education since they are not considered in need of an education, and are assumed to be a distraction in schools, or because it is believed that they are not capable of learning. Even if in school, disabled children are less likely to receive science and health education, and are more likely not to have access sex education courses.

The exclusion of children and youth with disabilities from education results in their exclusion from opportunities for further development. Physical and mental disabilities are compounded by poor education outcomes. Their access to vocational training, employment, income generation and business development is diminished. Failure to access education and training prevents the achievement of economic and social independence and increases vulnerability to poverty.

In order for the disabled to participate in education, both universal design for physical access to schools and academic access to curriculum and instruction requires appropriate support. Infrastructure is an important consideration for a project entry point for addressing disabilities and social inclusion, since construction represents 45 percent of the Bank's Education lending.<sup>52</sup> Planners, both in-country and within the donor community need to better incorporate disability issues into a wide range of planning activities to increase the accessibility of schools, the availability of appropriate materials, and the provision of adequately trained teachers. The World Bank and other donors have yet to agree on a disability policy for school construction, the activity that still accounts for the largest amount of World Bank education funds.

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<sup>49</sup> Filmer (2005).

<sup>50</sup> Guernsey et al (2006).

<sup>51</sup> Mont (2006a).

<sup>52</sup> Sipos (2006).

Inclusive education, with access to education in the regular local neighborhood or community school, provides the best opportunity for the majority of children and youth with disabilities to receive an education, including those in rural areas. In some instances, special education may be the most appropriate form of education for some children with disabilities. The education of all children, including children with disabilities, assists in breaking down barriers and negative attitudes and facilitates social integration and cohesion in communities. The involvement of parents and the local community further strengthens this process.<sup>53</sup>

**Box 6: Guidelines for Cost Control: Increasing Accessibility to Schools**

**Design factors:**

- Use topography to advantage. Steeper ground often makes it easier to provide access, not harder. Paths oriented parallel to the slope of land are easier to make accessible than those that run perpendicular to the slope.
- Avoid level changes inside the building. This removes the need for ramps entirely. If abrupt level changes are kept below 15 centimeters, railings are not needed on ramps.
- Eliminate raised thresholds and steps at doorways. Thresholds are often used to bridge the gap between different floor surface materials on each side of a wall. When needed, thresholds should be recessed or kept low with a gradual transition from exterior floor surface to interior floor surface. This will eliminate the need for ramps and separate accessible entries to classrooms.
- Avoid the use of elevators and lifts. They are the most costly items to build and may be very hard to obtain, causing significant construction delays. They also create significant maintenance costs and may take a long time to repair.
- Where no site is available that is large enough for a one story school, plan the school using a split level design so that ramps can be used to connect levels. On steep sites, an accessible entry can be provided to each level connected by an accessible path of travel outside. In climates with extensive rainy seasons, it may be possible to shelter the paths with overhanging roofs or galleries.
- Provide increased space for wheelchair access without increasing the overall size of the building by careful design and efficient use of space everywhere.
- Run ramps in the direction of travel so that everyone will use them and stairs can be eliminated.

**Construction factors:**

- Avoid specialty products. Find locally available alternatives when costs are prohibitive. For example, make grab bars from steel bars, pipes or wood if it is more affordable.
- Be creative in the use of available materials and products. For example, if wide doors are not available, use double doors made from two narrow doors. Paved surfaces, although desirable, are not absolutely necessary for wheelchair access if walking materials are durable, even, stable and well drained.
- Educate builders about new practices before construction begins to avoid creating problems in the field and institute quality control procedures to insure things are being built properly. Rebuilding projects that are already under construction increases the cost of accessibility significantly.

**Social factors:**

- Invest resources in education and outreach during design to engage local builders and product suppliers in identifying how to accomplish the goals of accessibility. This will reduce lack of cooperation and reduce the need for quality control when construction commences.
- Use culturally appropriate means to provide access. For example, trying to save money by building one unisex accessible latrine instead of making the regular boy's and girl's toilet facilities accessible may be unacceptable in a culture that maintains strict separation between the sexes.

Source: World Bank (2005e).

<sup>53</sup> Edmonds (2005).

## Energy

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 three 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 severe health hazards and death traps, and contains many hazardous chemicals including a number that are carcinogenic. The combustion produces also large amounts of particulate matter including fine particles that penetrate deeply in the lungs and causes health damage, and in turn, can cause long-term disability.<sup>54</sup>

## Environmental Health, Water and Sanitation

Studies by the World Bank and others reveal that investments in environmental health, water and sanitation are cost-effective measures toward improving healthy living and minimizing disability, especially when the leading global risk factors contributing to deaths and disability worldwide are unsafe water, sanitation, and hygiene; indoor smoke from solid fuels; lead; agricultural chemicals; urban air pollution; and, climate change.

The environment is essential for health, but often the poorest have the least access and the worst health indicators. WHO estimates that environmental health hazards account for 24 percent of the overall burden of disease worldwide.<sup>55</sup> Approximately 1.7 million deaths worldwide are attributable to unsafe water, sanitation and hygiene. In low and middle income countries, the number of people living in highly polluted urban environments and slums are steadily increasing.<sup>56</sup> With ongoing labor migration and more demographic pressures on limited environmental resources, local conflicts can further environmental degradation and limited access to environmental resources.

Water and sanitation service systems are seldom planned to accommodate people who have functional limitations, although their livelihood and wellbeing, as with most other people, are linked to their access to and control over environmental resources for food, water, and shelter (Box 7). About 1.3 billion people depend on fisheries, forests and agriculture for employment.<sup>57</sup> Lack of access to water and sanitation system often make disabled people dependent on others for their basic needs, and furthermore, more vulnerable to the risk of contacting diseases.<sup>58</sup>

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<sup>54</sup> Wiman and Sandhu (2004).

<sup>55</sup> United Nations Population Division, *World Urbanization Prospects: The 2005 Revision Population Database*, 2005, United Nations Population Division.

<sup>56</sup> WHO (2002).

<sup>57</sup> World Resources Institute (2005).

<sup>58</sup> Wiman and Sandhu (2004).

**Box 7: Examples of Barriers to Access and Participation in Water and Sanitation projects**

**Individual:** 'Physical weakness means that disabled people have to rely on stronger household members to collect water for them (Hollingsworth, 2001), or to bath themselves, their children, clothes, dishes, etc. at communal water places.' (Van der Kroft, 2002)

**Physical:** An account from Zambia describes a village where a community project was carried out to build latrines. Persons with disabilities did not benefit as they could not use them for they did not have a sitting pan and the doors were too narrow for a wheelchair to enter. The same toilets were used for bathing purposes. I was talking to a disabled woman, who told me she bathed only at night and used the bushes as a toilet (Sachelo, 2002).

**Social:** Because many in Bangladesh believe that impairments are contagious or a karmic punishment, disabled people are sometimes prevented from using public latrine facilities, which then forces them to use unsanitary practices (CRP, 2002).

**Institutional:** Government services for physically disabled people to access water and sanitation facilities are minimal in Bangladesh. There is the NGO Forum for Water and Sanitation that comprises NGOs and government organizations (GOs) working in water and sanitation, but it does not include disabled in their programs. (CRP, 2002).

A study of more than 165 US-based relief and development NGOs found that organizational strategic objectives make no reference to disabled people; most do not collect data on participation of the disabled in their programs, and so cannot monitor the extent of their participation (Singleton et al, 2001).

Source: Jones and Reed (2003).

## Health and Nutrition

Nutrition and disability are interlinked in a vicious circle, as poor nutrition increases the likelihood of disease and disability, and vice versa. With improved social and nutritional status developed countries has experienced a clear decrease in the number of people living with mild to moderate mental disabilities.<sup>59</sup> The lack of certain micronutrients is clearly linked to various degrees of temporary or more permanent disabilities (e.g., vitamin A deficit for impaired vision and blindness; iodine and Vitamin C for scurvy). Also metabolic disorders, such as diabetes, result in various degrees of disability depending on the length, severity and management of the disease. One side of the story is this: securing proper nutrition for children, youth and mothers to be, another is the prevention of nutrition related secondary disabilities for people already affected by disability or malnourished due to overweight. Cardio-vascular diseases, diabetes and musculoskeletal conditions, such as arthritis, are very common disabilities, partially caused by chronic degenerative processes that increase as a person ages.<sup>60</sup>

While young people tend to become disabled from poor access to adequate health care and common infectious diseases and accidents, some are born with disabilities. Mental health problems are most prevalent in the youth often combined with substance abuse and alcohol. Overall alcohol and substance abuse are often underestimated as the primary or underlying cause of disability in most age groups from youth and upwards.<sup>61</sup>

<sup>59</sup> Not limited to obstructed labor, up to 20 million women are affected by disability impairments associated with pregnancy and childbirth. Improved maternal health can also prevent disability in children (Sipos, 2006).

<sup>60</sup> Rockhold (2006b).

<sup>61</sup> <http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTHEALTHNUTRITIONANDPOPULATION/EXTPHAAG/0,,contentMDK:20786149~menuPK:64229809~pagePK:64229817~piPK:64229743~theSitePK:672263,00.html>

Equity in access to information and technology, and other resources is central to improved public health and equitable and sustainable development.<sup>62</sup> People in the developing and transitional countries have limited access to new knowledge and technologies resources are scarce and individuals with disabilities are given the lowest priority as well as health care, rehabilitation and other essential services. People with neurological, mental or development deficiencies often find themselves confined to a bed, a home or an institution where they sometimes become victims of physical, psychological and sexual abuse.

While most health systems focus on promotion, prevention and cure, the capacity to provide continuous care for people with chronic conditions or rehabilitation, vocational training and mental or psychosocial health services are often very limited. The availability, access and quality of medical rehabilitation including assistive devices (e.g., prosthetics, orthotics, wheelchairs and walking aids) enabling people to attain the highest possible level of functional ability, living an independent quality life as productive members of their society, is often very low.

In 1993, the UN General Assembly adopted the Standard Rules on the Equalization of Opportunities for Persons with Disabilities. The rules obligate the States to ensure the provision of effective medical care, rehabilitation and support services for persons with disabilities to reach and sustain an optimum level of independence, functioning and economic productivity world wide. The UN standard rules are preconditions for equal opportunities for all. To meet the rehabilitation needs of persons with disabilities in a cost effective and timely manner it is essential that rehabilitation programs be organized at local, regional and national level as integrated parts of the national health care and social support systems. A special effort needs to be made to prevent avoidable disability, not only through early identification, treatment and rehabilitation, but also through the promotion of inclusive societies.

## **Information Communication Technology**

Information Communication Technology (ICT) is a great challenge for the disabled. New accessible technologies provide a unique opportunity for people with disabilities. ICTs are tools that have the potential to improve the access to and delivery of basic services, such as health and education, and increase the effectiveness of government and business institutions in addressing human development issues. However, if not accessible, they build further barriers that inevitably broadening the divide.

There are two issues to be addressed: accessibility of life environments and access to opportunities and participation. The application of universal design principles in mainstream contexts and the specific advances in mainstream ICTs, as well as in assistive devices, have a major role in improving the accessibility of living environments for people with disabilities. However, the problem of access to opportunities requires additional measures as people with disabilities have, as a rule, fewer resources at their command. Aside from developments in medical care, which have had a significant impact on the quality of life around the world, developments in ICTs offer tremendous opportunities to do the same. These technologies can assist people with disabilities in undertaking activities for daily living (ADL) to compensate and even substitute for mental, sensory, and physical impairments and consequently to realize their potential for independent, meaningful, and productive living.

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<sup>62</sup> Rockhold (2006a).

Developments in basic and applied technologies—such as microelectronics, opto-electronics, material technologies, mechanical and production engineering, and rehabilitation and biomedical engineering—are relevant to disability. In the context of disability, low, medium, and high technologies all have a role to play in creating products and services that can enhance the quality of life.<sup>63</sup>

## Infrastructure and Urban Development

Inaccessibility in the infrastructure environment is still the major barrier for people with disabilities toward active participation in social and economic activities. Some governments recognize disabled persons' basic right to equal access to build environments. The application of universal/inclusive design (Box 7) has emerged as a result of the struggle of persons with disabilities for accessible physical environments.

### Box 8: What is Universal Design?

Universal Design or the creation of barrier free environments is a very simple idea: all buildings, products and services should be designed in such a way that the number of potential users is optimized. The need for specialized design or adaptations must be minimized and one simple design that can meet the needs of people of all ages, sizes and abilities equally should be made prevalent.

Source: [www.worldbank.org/disability](http://www.worldbank.org/disability)

Universal/inclusive design approaches provide safer environments for all by reducing the rate of accidents. As physical barriers reduce the economic and social output of persons with disabilities, investments in the removal and prevention of architectural and design barriers are increasingly being justified on economic grounds. Recent experience has demonstrated the cost effectiveness of incorporating accessible design features into built environments, particularly when they are being newly constructed. Research has shown that providing full access facilities from the outset has additional costs of approximately one percent.<sup>64</sup>

To the extent that the World Bank makes loans for the construction of schools, public buildings, streets paths and other public infrastructure, it has the opportunity to facilitate their accessibility at a very low cost simply by promoting barrier free design and providing information to its clients about the most cost-effective methods for its application. The Bank's Post-Conflict Reconstruction Unit, for example, operates in environments characterized by many such opportunities in the reconstruction of war-torn infrastructures. The systematic application of cost-effective barrier free design to all new Bank financed construction is a critical and cost-effective element of a successful World Bank disability strategy, which simply requires a commitment to accessible design and an in-house expertise on accessibility and Universal Design.<sup>65</sup> Further action is needed to develop guidelines on universal/inclusive design.

## Social Protection

While disability touches all sectors, in the formal sense of government benefits and services, disability is handled by the social protection system. In some countries (primarily the OECD and ECA), Ministries of Social Affairs are responsible for residential institutions for people with

<sup>63</sup> Ballabio and Placencia –Porrero (1998).

<sup>64</sup> Edmonds (2005).

<sup>65</sup> Metts (2000).

disabilities, although typically Ministries of Education and Health also run such institutions. It is important to note that in some cases, large residential institutions have been implicated in severe human rights violations, including neglect, abuse, sexual abuse, torture, and death. There are numerous cases where disabled children and adults are denied the legal freedom to live outside of institutions. While a legal remedy could presumably be easily taken, providing the range of services needed in communities instead of large institutions would present a larger financial and technical challenge. OECD countries have, by and large, set up much smaller group homes in the community as a preferential approach, but even these have been plagued by human rights violations in some cases.

Disability benefits may take the form of cash,<sup>66</sup> quasi-cash (such as tax and duty easements, price and wage subsidies) or service. Cash benefits are only a part of the whole picture and disregarding the other two types of provisions may lead to distorted analyses and, consequently, to incomplete policy recommendations. Practical advice to internal and external clients that can be incorporated into Bank operations focusing on HD areas—primarily labor market, social assistance and social security systems—is needed. This latter goal is particularly important in ECA and LAC where large disability cash benefit systems exist.

#### *Benefit uptake*

In all ECA and many OECD countries, the trend of uptake of disability benefits is upward sloping. This is counterintuitive for two reasons: the quality of health care, preventive, curative and rehabilitation technologies and services is continuously improving which should, in principle, reduce the need for disability pensions. Second, as long as disability pensions are intended to help those who lose some or all of their capacity to work, the shift toward services, more accommodating and flexible work conditions should also contribute to lower incidence. This is not the case, however, suggesting that both governments and individuals view disability benefits as an entitlement based on health status and not on the capacity to earn income. Since our own definition is changing as to what is considered a state of “health”, the effect of positive developments in the work environment and health status (in absolute terms) of the population fails to be reflected in benefit uptake. In other words, the question should not be whether someone is healthy or not but whether the person is *healthy enough* to be gainfully employed if there were jobs commensurate with his/her remaining capacities. This question also raises the issue of how unemployment insurance, disability insurance and old age pension insurance relate to each other.

In the absence of catastrophic events--such as war, natural disasters, epidemics--disability benefit uptake, both temporary and permanent, should be represented by slowly trending time series where the reasons for seasonalities and shocks should also be easy to identify and filtered out. In the ideal case, disability uptake should have a zero correlation with economic growth, (un)employment and household income. The more disability trends mirror labor market and general economic developments, the more likely it is that these benefits also serve as an alternative to or augment unemployment benefits and social assistance.

OECD countries and many ECA countries have non-contributory disability grants for congenital disabilities that then continue through adulthood if the recipient remains unable to work.

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<sup>66</sup> Cash benefits payable as a result of losing certain physical, cognitive or psychological abilities may be categorized in a variety of ways, according to whether they are (a) temporary vs. permanent, (b) contributory vs. non-contributory (c) privately vs. publicly managed, (d) financed by the employer (directly or through insurance policy), an industry-wide or public entity, (e) conditioned on the circumstances of the onset of disability vs. unconditional, (f) designed to avert poverty vs. to replace labor income, etc.

Disabilities which are acquired in adulthood or in old age are often contributory in nature, but this is not a requirement. A housewife who becomes disabled from an illness would be eligible for disability non-pension benefits in most countries, while her husband who became disabled from a work injury received in the formal sector would become eligible for a contributory disability pension.

Non-contributory non-pension disability benefits are thought to be necessary because of the implicit recognition that the presence of a disabled household member has a significant welfare impact. Not only are the material needs of such a household greater for special equipment, etc.<sup>67</sup> but the earnings potential of the household is often affected, as family members might withdraw from the labor force in order to provide extra care to the disabled child.<sup>68</sup>

## Transport

Traffic accidents are a major source of premature deaths, lifelong disability and losses to households, as well as to the public and private economy. Road traffic injuries are a growing public health issue, disproportionately affecting vulnerable groups of road users, especially the poor and other vulnerable groups. Developing countries bear 85 percent of annual deaths and 90 percent of the disability-adjusted life years (DALYs) lost because of road traffic injury. Death rates from road accidents in 2002, which can be used as a proxy for injuries from road accidents, are high. More than half of the people killed in traffic accidents are individuals between the ages of 15 and 44 years—often the primary breadwinners in a household. Furthermore, road traffic injuries cost low income and middle-income countries between one percent and two percent of their GNP. Worldwide, it is estimated that road traffic accidents kill 2.4 million people, which would be more than those dying due to malaria, TB or HIV/AIDS.<sup>69</sup>

Lack of access to transport creates income poverty. Inaccessible design of the transport services limits access for the disabled and the elderly, and many other groups to social, political and cultural activities, and thus perpetuates exclusion. Various studies and analytical approaches 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 (e.g., the lack of assistance from operators and drivers) but also psychological barriers and fear for personal safety when using transport systems.<sup>70</sup>

The Transport Sector plays an important part in the Bank strategy by strengthening focus on accessible environments and inclusive transport systems. Inclusive transport systems are all the more critical in reducing the isolation, vulnerability and dependency of people with disability – thereby helping to improve the lives of many of the world's poorest.<sup>71</sup> Inadequate monitoring and enforcement of compliance with existing accessibility legislation is widely cited as the key impediment to providing inclusive transport in developing countries. The legislation has rarely been matched by adequately detailed regulatory frameworks and has therefore generated a very limited response on the ground. For example, legislation in Mozambique, Malawi and India requires that there should be seats in urban public transport and trains reserved for passengers with disabilities and that these passengers should be granted fare concessions of up to 100 percent. However, experience shows that only occasionally are these measures implemented or

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<sup>67</sup> Zaidi and Burchardt (2003).

<sup>68</sup> Kuklys (2004).

<sup>69</sup> World Bank (2005d).

<sup>70</sup> Wiman and Sandhu (2004).

<sup>71</sup> Roberts (2005).

enforced. In most cases, applying Western disability standards and facilities to deliver access solutions and ensure universal access in transport systems is not affordable or realistic for the provider or for the users in low- income countries -as most of them are too poor to pay the costs of such standards.<sup>72</sup> In the rural context it is often very difficult to establish basic transport services to be sustainable because of the low population densities and limited economic activity. Inevitably, making these services accessible to all will be an even greater challenge in such rural areas.

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<sup>72</sup> Roberts (2005).