Water supply and sanitation access and use by physically disabled people

Report of field-work in Uganda

H Jones and R Reed

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Water, Engineering and Development Centre
Loughborough University Leicestershire
LE11 3TU UK

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Glossary

AD	assistive device
ADL	activities of daily living
CBR	community based rehabilitation
CP	cerebral palsy
DPO	disabled people's organisation
D:	depth
H:	height
L:	length
W:	width
g.i.	galvanised iron
i/s, o/s	Inside, outside
LC	local council
LH	left hand
RH	right hand
NGO	non-governmental organisation
NUDIPU	National Union of Disabled Persons of Uganda
OT	occupational therapist
PI	physical impairment/physically impaired
PT	physiotherapist
PWD	people with disabilities
UNAB	Uganda National Association for the Blind
VI	visual impairment/visually impaired
VIP	ventilated improved pit latrine
WEDC	Water, Engineering and Development Centre
w'chair	wheelchair
UPE	universal primary education
RWSS	rural water supply and sanitation
Ø	diameter

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1. Introduction

1.1 Project Background

This report has been produced as part of phase two of KaR (Knowledge and Research) project R8059: **'Water supply and sanitation access and use by physically disabled people'**. This research is funded by the UK Department for International Development (DFID) and is being carried out at the Water, Engineering and Development Centre (WEDC), Loughborough University, UK, together with collaborators in the UK, in Bangladesh and Uganda. The project web-page is http://www.lboro.ac.uk/wedc/projects/auwsfpdp/index.htm

As part of Phase two of the research, in-depth field-work is to be carried out in four low-income countries. Criteria for selection of field-work locations are:

- Availability of current information about multiple examples of good practice on access for disabled people to water and sanitation.
- Commitment/interest from a local partner.
- Support/approval of a local DPO.
- Contribution to a diversity of cultural and geographic contexts.

On the basis of several pieces of relevant information received about examples of good practice, a preparatory visit was carried out to Uganda in December 2002, hosted by the Disability and Rehabilitation Desk, Uganda Ministry of Health (see Appendix II for report). The purpose of the visit was to decide whether or not Uganda would be suitable for in-depth field-work. Meetings were held with relevant agencies, to introduce and discuss the research project, and to identify potential field-visit locations. This also provided the opportunity for agencies to express an interest in collaboration in the project. Support was gained from NUDIPU, and the active involvement of several local NGOs.

1.2 Field visits

A temporary local co-ordinator was engaged to prepare for field-work, including co-ordination of an introductory planning meeting, supported by staff of the Disability and Rehabilitation Desk, Uganda Ministry of Health.

Field-work took place over a two-week period, from 28th January to 7th February 2003, under the supervision of WEDC staff. An initial planning meeting of interested people, hosted by local NGO 'Action to Positive Change on People with Disabilities' (APCPD), drew up a list of possible visit locations and key informants, which formed the basis for a two-week schedule of visits. It was unfortunately not possible to cover all suggested visits in the limited time available.

Criteria for selection of field-visit locations can be summarised as:
Accessible facilities, adaptations, equipment or approaches that have helped people with physical impairments and limitations improve their access to water and sanitation-related activities. See Appendix III for the criteria in more detail.
A total of 26 visits and meetings were made; see Appendix I for time-table of visits.

1.2.1 Contributors

At least 54 people contributed to the research, through interviews, meetings, telephone conversations or e-mail correspondence. They were from government and NGOs, including organisations run by disabled people (DPOs) and international organisations. 35 contributors were disabled, of whom 7 were children.

Table 1: Disabled people and carers visited

	Female	**e**	**total**
Disabled adults	6	21	27
Disabled children	3	4	7
Disabled elderly	1	0	1
Total	***10***	***25***	***35***
Carers	5	1	6
(child carers)	1	1	2

Of the six carers met, five times as many were female as male. Two were children. This is likely to be a fair representation of the ratio of female to male carers.

1.2.2 Types of impairment:

22 out of 35 disabled people had a physical impairment, including amputations, congenital anomalies, post-polio paralysis, juvenile arthritis, and cerebral palsy. 12 had a visual impairment (including 7 former soldiers in a focus group), and 5 (all children) had a cognitive/developmental impairment in addition to a physical impairment.

1.2.3 Visit locations

Table 2: Type of visits

	Total
Family homes of disabled people	11 (8 rural, 3 urban)
Institutions – schools, vocational training centre, rehabilitation centre – for disabled people	6

It is appropriate that almost twice as many family homes as institutions were visited, as the focus of the research is on the household context.

Table 3: Organisations visited

	disability sector	**watsan sector**	**other**	**total**
Government offices/ services	7	3	1	11
NGOs	8	1	1	10
(DPOs)	*(4)*			*(4)*
International organisations	1	1	1	3
total	***16***	***5***	***3***	***24***

The high proportion of agencies from the disability sector represented reflects the greater degree of interest shown, and the fact that more work had already been carried out by these agencies than in the watsan sector.

1.3 Methodology

Uganda was the first location for in-depth field-work for this project. In addition to data collection, a major objective was to develop the research methodology. Data collection frameworks were drafted for different visit contexts – visit to family home /institution/ service provider: These needed to be revised as they were used and omissions and drawbacks became apparent. (see Appendix IV for data collection frameworks).

In view of the early stage of methodology development, it would not have been appropriate to attempt to train local collaborators as data collectors. The role of local partners was therefore as informants, contact/liaison persons, interpreters and guides.

It should be stressed that the purpose of the field-work was to observe and document as wide a range of examples of good practice as possible in the available two weeks. Researchers deliberately sought to visit specific individuals and institutions who could provide the examples of good practice we

were looking for. Selection was neither random nor representative, but largely opportunistic. Findings presented do not in any way represent the typical situation of the average disabled person in Uganda.

1.4 Limitations and gaps

1.4.1 Misunderstanding of objectives

As much as possible was done to maximise the use of available time, but even after discussion and clarification with informants, visits did not always meet the research objectives. Conversely, surprising and unexpected data were occasionally identified.

1.4.2 Lack of involvement of water sector

Twice as many disability-focused agencies contributed as others, which was not intentional. It happened that, in the time available, it was quicker to make contact with agencies who were interested in this issue, than to spend time and effort contacting agencies who may turn out to have little to contribute to the research at this stage. There was a strong network of OTs and DPOs, which was the source of much of the information. This was a real strength, it led us to family homes where a high number of assistive devices was observed. Lack of time to prepare and build up contacts meant that the team relied heavily on this network. Because of weak links with the water sector, few accessible water sources were seen. Apart from those which were considered accessible due to their location, only one hand-pump was seen, and no protected springs.

2. Findings

2.1 Personal assistive devices and accessible facilities

Personal assistive devices (ADs) are pieces of equipment used by a disabled person, often designed specifically to meet their individual needs, which enable them to access and use water and sanitation facilities more easily or more independently.
Accessible facilities are those constructed with features – whether intentional or not – that make them possible, or more comfortable, or less arduous to use by a disabled or frail elderly person or their carer.

2.1.1 Drawing water

See Table 1 for complete data on drawing water.

Lessons learned:

Proximity: a major factor in accessibility of water point sources was proximity – piped water into or next to the house, a rainwater tank accessed by a tap near the house, or a tube-well only 100m from the house.

Reachability: the disabled person needs to be able to reach the water source. The width, smoothness and gradient of the approach path are therefore important. In one wheelchair user's case, reachability overrode proximity: he preferred to travel a kilometre to a pump along an accessible path than to use a nearer pump along a narrow, steep and bumpy path.

For blind people, mobility markers, such as rocks, or vertical or horizontal poles, help to indicate the way and often cost nothing.

Accessibility: being able to reach the tap or handle. This is particularly crucial in the case of using a hand-pump. The concrete apron is liable to be slippery when wet, and treacherous for a user with poor balance. If the handle is long enough to pump from the edge of the apron, this may be the preferred option, avoiding the need for a wheelchair or crutch user to go onto the apron.

Some pumps have a rectangular concrete platform for the user to stand on, which is outside the apron. This should be level with the surrounding ground, so as to be accessible to wheelchair or crutch user. The concrete should have a roughened finish so it is not slippery when wet.

Usability – how easy is the equipment or facility to use.

Height of tap: a low tap is useful for a person crawling, and can result in less water lost between spout and opening. If it is too low, however, the larger sizes of jerry-can cannot be used.

For persons with difficulty bending, e.g. wheelchair or crutch users, the raised tap-stand is useful, with taps at a suitable height for use while standing or in a wheelchair, but with a raised concrete slab to rest the container on while filling.

Type of tap: press action is good for a user with poor grip. A lever which can be padlocked enables a restricted number of users, and the owner to protect their investment, e.g. in the case of a rainwater tank.

No hand-pump was observed that was designed to be accessible. However, factors were observed that made them easier to use:

- A lengthened pump handle provides more leverage and is operable with less strength. It also makes the pump usable from further away, e.g. from outside the apron.
- A high water table makes the hand-pump easier to operate with little strength, e.g. by a child, frail elderly or one-handed person. Clearly this depends entirely on environmental factors.

Jerry-cans have a number of features that make them convenient for use by disabled people when drawing water:

- The handle of a jerry-can is suitable for holding in one hand, allowing the other to be used for balance if needed.
- A range of sizes is available; the smallest is light enough for a child to hold in one hand.
- The plastic is robust but strong enough to be cut and adapted.
- The handle can be lengthened with rope, which enables the user to lower the jerry-can where access is from above, e.g. in the case of a spring or shallow well. This can compensate for a user's lack of reach or flexibility, or not being able to descend to the level of the water source.

Several informants commented that the disabled family member could fetch water 'with help', or that "There's always someone around to help". In fact, it is the norm in Uganda to see children and women fetching water in pairs or groups. Often, one person pumps while the other holds the container. In this context, the contribution of a disabled person to the group activity is valued, even if he or she can only do one aspect of the task, e.g. carrying but not drawing water.

This confirms that a focus solely on self-reliance as a goal is too narrow and that for many disabled people, a broader goal of being able to contribute to the family is equally valid.

2.1.2 Transporting water

See Table 2 for complete data on devices for transporting water.

Lessons learned:

Jerry cans: are widely used by disabled people to transport water in various ways. They have a number of features that make them convenient:

- They are cheap, durable and widely available in different sizes, from 1l to 25l. The smallest - 1l - is light enough for a disabled child to carry.
- Wheelchair transport: the user can select the size of jerry-can that a) fits on footrest, b) he or she can lift on and off, and c) does not tip up the wheelchair.
- The handle makes it possible to carry using 2 or 3 fingers, which means it can be carried while walking with crutches.
- Using rope or string, the handle can be made any length for the convenience of the user. This is useful for someone who has trouble bending down.
- The square shape makes it just as easy to carry on its side, e.g. under a wheelchair, or to fit on a footrest, or carry on the head.
- The screw-on lid (or banana when the lid is lost) prevents spilling, even when the container is carried on its side, or moved erratically.
- They can be adapted by cutting and piercing.

Wheelchair trailer: has the advantage of being able to transport more weight than can be carried directly on a wheelchair or on the head. It can also be used to transport other things, e.g. goods to market, a young child, etc. However it may not be suitable for rough, narrow paths.

2.1.3 Storing water

No accessible water storage facilities were observed or reported.

Lessons learned:

The nearer and more convenient the water source, the less the need to store large quantities of water. This makes it realistic to collect small amounts regularly – e.g. up to 5l, which is feasible for many disabled people.

No ADs to facilitate storing water or pouring water from a storage point were observed or reported.

2.1.4 Drinking

See Table 3 for complete data on assistive devices for drinking.

Lessons learned:

A wheelchair tray can be useful in providing a stable surface, to reduce the risk of water spillage from a cup or mug. It can also support the user's body, providing stability to the person with poor balance, and enabling the drinker to take control over the activity, e.g. being able to drink at their own pace. A tray can also be adapted for use with an ordinary chair, if there is no wheelchair.

2.1.5 Bathing

See Tables 4 and 5 for complete data on accessible facilities and ADs for bathing.

Lessons learned

Accessible bathing facilities had the following features in common:

Reachability: ramped/level approach.
Accessibility: floor of facility level with the surrounding ground, entrance wide enough for wheelchair access, usually 750-800mm.

Internal space: extra room is needed depending on user needs:

- 110 x 210cm allowed the user to move around using crutches and sit on stool with legs outstretched.
- for transferring from wheelchair to bathing seat and back (dimensions not available).
- for a wheelchair to turn, and for a helper to move around (dimensions not available).

Seating arrangements: to avoid sitting or lying on a wet or dirty floor in the bather's own bathwater. A range of materials can be used – concrete, plastic, metal, wood, and even paper[1]. In general, the higher the cost of materials, the greater their durability.
Good drainage: the seat should be narrow so water drains off easily, or have holes or gaps in the seat to improve drainage.

[1] APT – Appropriate Paper Technology, is a technique for making objects – furniture, rehabilitation equipment, household items, out of cardboard and paper.

Height: a seat at knee height or above makes it easier for a bather with poor balance to sit down and get up again. For the wheelchair user, a seat of similar height to the wheelchair makes transfer convenient.
A low seat reduces the risk of injury if the bather falls, but makes independent wheelchair transfer more difficult.
Those with poor balance may benefit from back and side supports. Sides can be an obstacle to sideways wheelchair transfer.
A water source inside the bathing area is an advantage.

None of these arrangements need exclude non-disabled people from using the same facilities.

2.1.6 Washing clothes, dishes and doing house-work

See Table 6 for complete data on accessible facilities and ADs for washing clothes, dishes and doing housework.

Lessons learned

All the laundry facilities and ADs also had other uses, either for bathing or for drawing water.

A low-cost locally made dish rack that promotes general good hygiene can easily be made accessible for a wheelchair user at no extra cost, by making it high enough for a wheelchair user to get their knees under. Equally, it could be made low enough for a person to use while sitting on the ground.

Washing clothes was not observed to be a concern of disabled men.

2.1.7 Water disposal

Most water disposal facilities were observed to be informal, i.e. throwing water onto the ground of the compound. No ADs to facilitate water disposal were observed or reported.

2.1.8 Toilets

See Table 7 and 8 for complete data on accessible facilities and assistive devices for toileting.

This is the area where most accessible facilities and ADs were observed or reported – a total of 12 types of accessible latrine were reviewed, 11 of which were in institutional settings. These were therefore designed to be accessible for people with a wide range of impairments, whereas the one domestic facility

was designed according to the needs of a single user. 11 out of 12 were of an urban standard, only one was typical of rural latrines.

Lessons learned

Reachability and access

A ramp of concrete, or earth, which finishes at a similar level to the latrine floor is accessible for wheelchair users. The lower the gradient, the better for independent wheelchair access[2]. However, it should be noted that a ramp does not suit everyone. Some users, especially those with poor balance, may prefer one or two steps to a steep slope. A hand-rail is recommended, especially where the ramp is steep.
A level landing/ platform immediately outside the door is recommended for users to sit in a wheelchair without rolling backwards, or stand on crutches without losing balance, whilst opening the door. Where the door opens outwards, the flat area should be a wheelchair width deeper than the width of the door, to allow a wheelchair to manoeuvre around the open door. For example, if the door is 80cm wide, and the wheelchair 70cm wide, the flat area needs to be 80 + 70 = 150cm deep.
A grab-rail on the outside wall next to the door is useful to provide support for an unsteady ambulant user while opening the door.

Latrine doors

The majority of doorways were 75 - 90 cm wide, to allow a wheelchair to enter. An outward-opening door leaves more room to manoeuvre inside. However, this may make it more difficult to close from the inside. A rail or rope on the inside of the door is helpful. A door stop is recommended to prevent the door opening more than 90 degrees, otherwise it is more difficult to close.
A two-way hinge has the advantage of allowing the door to be pushed or pulled from either inside or outside.
Large bolts and/or handles on both inside and outside are good for easy grip.

Internal dimensions and layout

More space is usually needed inside by a disabled person, but the amount can vary. A range of internal dimensions was seen that provided a continuum of uses, as outlined below. Where a number of disabled people with a range of needs will use the facility, the preferred option is to provide more space, rather than less.

[2] International guidelines propose an ideal 1:20, maximum 1:12 for independent mobility.

1. The most spacious examples had extra room on all sides of the toilet: in front for a wheelchair to enter and turn, at the side for transferring to/from wheelchair, on all sides for one or more carers. Examples:
    - Overall dimensions with toilet in corner: W: 125 x L: 225cm.
    - Space between door and toilet: W: 180cm x D: 150cm.
2. Enough room between door and toilet for a wheelchair to enter and close the door behind. The user may need to reverse out.
3. Enough room between door and toilet for a person wearing callipers to sit with legs outstretched and to close the door.
4. Where lack of space means it is not possible to close the door, a curtain can provide privacy without restricting outstretched legs.

Floor – smooth cement is easier to keep clean than an earth floor, but more costly. It can also become slippery when wet. A slightly roughened finish is advised where crutches will be used, which can easily skid on a slippery floor and cause the user to fall. This should not be so rough however that a person crawling hurts their hands!
The disadvantage is that cement absorbs urine and so is difficult to keep clean and hygienic.
A water source inside (tap, jug, bucket) was considered desirable, especially for those who need water to wash themselves in privacy.

Internal support structures:

The most common need is for support to a person unable to squat independently. Some form of seat, for sitting on while urinating or defecating, and/or handles or rails for support while sitting or squatting, and to help lowering onto the toilet and getting up. Some of these were an integral part of the latrine structure, others were assistive devices which were removable.

Grab-rails

Grab-rails are invaluable for support while sitting or squatting, to help the user when lowering onto and getting up off the toilet, or when transferring to/from a wheelchair. Usually made of galvanised iron pipe, (25 – 50mm) they were seen in different locations:

- Horizontal rail, H: 38 – 80cm,attached to the wall on either side of the toilet.
- Diagonal rail, H: 60 – 90cm, attached to the wall on either side of the toilet.
- Cemented into the floor on either side of the toilet H: 30 (for a children's squat latrine) to 80 cm.

Where space is limited and wheelchairs must be left outside, a grab rail is needed from immediately inside the door, for users to support themselves while manoeuvring from wheelchair to toilet.

Iron rails should be painted to resist corrosion, particularly in a pit latrine, where fumes can contribute to corrosion.
Drawbacks: For most disabled people the easiest way to transfer from wheelchair to toilet is sideways, so a fixed rail at the side of the latrine may obstruct this.

Seats

A raised toilet seat is suitable for users unable to squat, or with poor balance. It is also convenient for transfer from/to wheelchair.

A seat can be fixed or moveable. Fixed may be of cement screed covered brick or commercially available ceramic pedestal toilets. Ceramic is the most durable and easiest to clean, but also the most expensive and not easily available in rural areas. Concrete is durable, and when painted, repels urine and is easy to clean. Materials are easily available.

Most designs seen were circular or square brick pedestals with a hole in the middle. The hole should not be set too far back in the seat, otherwise there is a risk of fouling by small children. A 'lip' around the edge of the hole can help minimise fouling of the sides of the drop hole. A PVC pipe lining the drop hole is easy to clean.

An alternative to a single seat is twin blocks. These are a cheaper option, and have the advantage of being more convenient for anal cleaning.

Drawbacks: concrete is colder to sit on than wood. Non-disabled users may prefer to continue squatting, and either make the seat dirty by squatting on it, or they may need a separate toilet, which increases costs.

Moveable seats came in a range of designs. These were mostly of wood, designed to place over the toilet hole, so that urine and faeces drop directly into the hole. They can be moved to one side when not in use.

A chair with back and arms provides support for a user with poor balance. Stools with no back or arms are suitable for those with good sitting balance, or where a carer is available to support the user. Sideways transfer from a wheelchair is easy when there are no chair arms.

Advantages: A wooden seat is generally cheaper than brick and concrete, as locally available materials can be used. When finished with varnish or paint it is more durable than unfinished, and easy to clean. The disabled person uses the same toilet as the rest of the family, with the same amount of privacy.

Drawbacks: If the seat is left in place, it may get dirty from others using it inappropriately. Enough space is therefore needed inside the latrine to move it

to one side of the toilet when not in use. If there is no room to do this, the seat needs to be lifted in and out of the latrine. A carer may need to do this.
A firm floor around the toilet hole is needed to support the seat. With a dirt floor, the risk of hole collapse may be minimised by attaching a runner on each side between front and back legs, to distribute chair weight more evenly.
There is a risk of splashing of legs or clothing between seat and hole. A splash guard – a board covering the space between front chair legs could prevent this.

Squat latrine

For persons able to squat, but with poor balance, a rail is often sufficient to make the squat toilet usable.
Alternatively, a moveable toilet seat may be used over the toilet pan, as described above.

Commode seat

Where reaching the latrine is a problem for whatever reason, a toilet seat can be used as a commode seat, by placing a container beneath – bucket, bowl, paper, can, the contents of which are then disposed of, either in the latrine or elsewhere.

Advantages: Can be placed in the most convenient position for the user or carer, e.g. near the house. The chair is less likely to become dirty or damaged by being moved around daily, or by other users.
Drawbacks: The receptacle needs to be emptied and cleaned by another family member. A separate private area needs to be created.

Internal water source

A source of water, either tap or container, inside the latrine cubicle, was considered highly desirable by many disabled informants. The possibility to attend to personal hygiene in privacy is particularly necessary for adolescent girls, and for people who use catheters, or manual bowel evacuation. The water source should ideally be within reach from sitting on the toilet.

Knee and hand protectors

For users who move around using hands and knees, unsanitary areas such as latrines are a significant health hazard. Soiling and potential infection can be combated in a low cost way by protecting hands and knees.
Rubber slippers (aka flip-flops, thongs) may be used on the hands, or wooden handles, which have the advantage of raising the hands higher off the ground.
For knees and stumps, recycled tyres can be made into protectors, against abrasion and dirt.

2.1.9 Rubbish disposal

An informal approach to rubbish disposal is the norm in rural areas – dispersal in a nearby banana plantation being standard.
Carrying rubbish while using crutches, otherwise no special methods or ADs were observed or reported. Usually other family members did this task.

2.2 Approaches to working with disabled people and their families

The main approaches were:

Institution-based rehabilitation, i.e. rehabilitation that takes place in a residential setting, such as a hospital or residential training centre.

Community-based rehabilitation (CBR), which here refers to all approaches that support the disabled person's rehabilitation and development in the family and community setting. Many of these schemes may also be termed 'outreach', especially when initiated by an institution.

Lessons learned

A few disabled people and their families have found their own solutions, based on a good understanding of their own needs, and often building on and adapting ideas from elsewhere.

Institution-based rehabilitation

The institutions observed provided water and sanitation facilities that were designed to enable the institution to deliver a service as efficiently as possible, whether that service be education, or medical care and rehabilitation. None of the facilities were designed with a view to helping the disabled person prepare to cope once they returned home, and none therefore bore any similarity to facilities that the disabled person would be likely to use at home.
Institutions tended to be focused on time-bound goals of education, curative care or treatment. Support for long-term well-being was largely seen not as the responsibility of the institution, but as the responsibility of CBR services, which would be provided once the disabled person returned home.
Equipment could be tried out and taken home, e.g. wheelchair, bed-pan, toilet seat, usually free of charge. It was not clear how much choice of equipment was offered or available, nor to what extent home circumstances were considered when selecting equipment.

Community-based rehabilitation

Different forms of CBR were observed and reported. In its best resourced form, a multi-disciplinary team of OT, PT, social worker and others were involved, depending on the needs of the family.
Priority needs were identified in consultation with the disabled person and family members, especially the main carer. Support was provided to try out practical solutions, and to monitor whether or not they work. For example, a blind woman first used bricks as markers for orientation, but these easily got moved, so wooden posts fixed in the ground were used instead (Appendix VII, Int.24).
ADs were not available to try out in the community, so options would be conveyed verbally and through drawings, diagrams or 3D models.
There is no need for an institutional stay, causing less disruption and expense for the family, and less segregation of the disabled person.
CBR workers were expected to network with other local resource persons as appropriate, whether education, health, or community development, in order to tap into available local services and initiatives. It was not clear to what extent this actually happened in practice.
The major drawback of CBR was the lack of resources and personnel to implement. CBR relies on a high number of community level workers, who ideally have a range of basic skills in health, community work, PT and OT. However the chronic lack of trained personnel in general in Uganda, is reflected in CBR: most CBR workers have no formal training except short courses. Most learn 'on-the-job'.
An OT or social worker working in an institution can see a large number of clients in one day. The same worker carrying out home visits can cover only a proportion of the number of clients, because of time spent travelling.

Demonstration centre

'Model' examples of ADs were constructed and available in a central location for disabled people to observe, and take ideas to adapt at home.
This is a low-cost option, in that only one of each AD needs to be made. The onus is on the disabled person to use the idea or not.
No information was available as to whether any disabled people have tried any of the ideas at home.

2.3 Approaches to inclusion of disability issues in watsan services

Two examples of sanitation facilities that included access for disabled people are documented. Both are accessible latrines in schools in Kampala.

Lessons learned:

The main initiative and responsibility needs to be taken by the mainstream agency, in both cases here the Primary School, which insisted on an accessible latrine. This was underpinned by the National policy on Universal Primary Education and the right of disabled children to education.

Collaboration between several organisations and sectors – education, water engineering, CBR (occupational therapy) – contributed to the project.

Technical input was provided by a specialist: in both cases an OT provided design specifications and drawings, which were suitable for use by those responsible for construction.

A willingness to try something new on the part of an implementing agency was hampered by lack of experience and confidence; however the availability of support and design specifications helped to overcome this barrier.

The ability to communicate information needed by personnel of another sector, in a format that they can understand, was significant. For example, a health professional successfully conveyed information to teachers and engineers, by reinforcing verbal and visual information with 3D models.
Information from the project has been communicated more widely - photos of the latrines under construction were used in RWSS handbook (Carl Bro International, undated). See Table 7, No. 14.

Constraints: Photos appear to be the only documentation available. There is a lack of available documentation in any form, on the impact and any learning from these accessible facilities.

Box 1: Promotion of Participation of People with Disabilities in Water and Sanitation Activities
During the promotion of water supply and sanitation facilities it is important for you as an extension worker to ensure participation of all members of the communities and take into account their special needs.
You can promote the participation of People with Disabilities (PWD) by:
Consulting with representatives of PWD on the LC councils
Making home visits to PWD and discussing water and sanitation issues with them
Making a special effort to invite PWDs to community meetings and facilitating their participation during these meetings
Promoting/advocating for construction of latrine stances for PWD at schools, health units and other public places.
Whilst there are particular groups in communities i.e. women, household heads, local leaders, children, PWDs it is important for you as a facilitator of development to hold mixed group meetings in addition to special consultations with individual groups to ensure that others are also made aware of the problems of vulnerable groups.

Special designs for PWD are included in the Technical Development Handbook. For further assistance on designs for PWD contact the Occupational Therapist in the District Directorate of Health.

(Suggestions from RWSS Handbook for Extension workers (Carl Bro International, undated)

2.4 Policy/strategy issues for accessible watsan services

This field-work was undertaken in Uganda at a stage in the project when a specific focus on policy and strategy was not included. Information collected on this aspect is therefore sparse.

Lessons learned:

There was general recognition by watsan agencies contacted that this is an issue to which very little attention has been paid to date. It was referred to as 'a blind spot' on the part of both the water sector and of the DPOs. Reasons cited for this were:

The water sector is demand driven and responds to community applications, whilst demand for accessible water facilities has not been raised by disabled people or their representative organisations.

The issue of access to water and sanitation – especially water - is such a huge problem for disabled people that it seems insurmountable. DPOs have preferred to start by tackling issues that seemed more achievable, e.g. education.

Disabled people are the strongest advocates for their own needs and interests. They are represented by PWD councillors at all LC decision-making levels, and have a role in raising issues of concern to disabled people across all development planning, including advocating for accessible facilities and services that meet their needs. There is evidence that PWD councillors at a local level lack information about available options that could help them in promoting practical solutions to disabled people's issues.

Guidelines are now available for the mainstream watsan sector that include information on accessible latrines for disabled people: Rural Water Supply and Sanitation Handbook (undated), Semakula et al (2002), and Uganda Ministry of Health (2001). These include some practical suggestions for action, drawings, text explanations and design specs: Some dimensions are missing and there are some inconsistencies.

There is an apparent lack of strategy to promote implementation of these accessibility guidelines. For example:

- it is unclear how widely the guidelines have been made available to PWD councillors;
- TORs for school latrines need to include accessible features;
- accessibility issues need to be included in monitoring tools.

No guidelines yet exist on accessible water sources.

There is a lack of accurate data on the scale of the problems disabled people face in Uganda.

3. General Conclusions

Findings from data collection in Uganda confirm the need for extensive research in this area. The issue of access to water and sanitation appears to be a huge problem for disabled people in Uganda, the precise extent of which remains unknown because of a lack of data. What is sure is that very little attention has been paid to the issue so far.

There are a number of gaps in the data collected:

No data was found related to accessible water facilities as used by the majority of Uganda's population (i.e. hand-pumps, protected springs, etc), nor related to accessible facilities or devices to facilitate storage of water, or disposal of grey water or household refuse.

The area where the most data was found was that of toilets. There is the beginning of a recognition among some watsan providers that access for disabled people to latrines, particularly for schoolchildren, needs to be tackled. There is some limited practical experience of implementation of accessible toilet facilities. There is still a severe shortage of information on the subject, and it is not yet clear how the learning from the practical experience is being documented and shared.

There was a lack of engagement in this research by the water and sanitation sector. In common with informants from a number of different sectors, they felt unable to contribute to the research in terms of concrete activities. However, several expressed interest in learning from the results of the project.

It is clear that there is a need to develop new ideas to fill the gaps in information.

References

Carl Bro International (*undated*) **Rural water supply and sanitation. Handbook for extension workers. Vol.1: Community Management. Vol.2: Technology Development.** UNICEF, Uganda Ministry of Gender, Labour & Social Development, Directorate of Water Development & Ministry of Health.

Semakula, P, Ejangu, J & Victor, D (2002) **School Sanitation Latrine Options: (Design and constructions guidelines)**. Uganda Directorate of Water Development & Ministry of Health.

Uganda Ministry of Health (2001) **Home and Environment Improvement Campaign Guidelines. Better Sanitation Responsibility for all.** Uganda Ministry of Health, Environmental Health Division & UNICEF.

Appendix I: Timetable of visits

Preparatory visit 10.12 – 13.12.02	
Date	*Activity*
10.12.02	am: Arrive Entebbe pm: Discussion meeting, Kolpin Centre
11.12.02	am: admin, arrange meetings lunch: Simon Kenny, DFID pm: John Ndiraba Kiyaga, APCPD
12.12.02	am: Ian Arebahona, Senior Engineer – Planning Directorate of Water Development Benon Ndaziboneye, Senior Programme Officer, ADD pm: COMBRA: Maria Kangere, Director, Barbara Batesaki, Acting Director, Kiwanuka Moses, OT trainer Elijah Musenyente, HITS James Mwesigye, NUDIPU
13.12.02	am: Jackson Atria, Executive Director, USDC Nightingale Kalinda, OT, CBRN, Mulago Hospital lunch: Carolyn Atkinson, OT and Heather Robinson, speech therapist Dr Alice Nganwa, Head, Disability & Rehabilitation Dept, Ministry of Health Depart for UK

Field-trip 26.1 – 7.2.03	
Date	*Activity*
26.1.03	Arrive Uganda
27.1.03	pm: Preparatory meeting, APCPD
28.1.03	am: Home visit: John Kiyaga School visit, APCPD pm: Kampala School for the Physically Handicapped
29.1.03	Review of methodology
30.1.03	am: Home visit – John Kiwanuka pm: Katalemwa Cheshire Home
31.1.03	Luweero
1-2.2.03	Review, typing up
3.2.03	am: Ali Baguwemu, Victor Locoro, Moses Ddamulira, Godfrey Olural, UNISE Herbert Baryayebwa, Commissioner, Jackson Mirembe, CBR specialist, Disability & Elderly Division pm: Leave for Masaka - evening meal with USDC staff
4.2.03	Home visits with USDC in Masaka
5.2.03	am: Return from Masaka pm: Paul Luyima, MoH Elijah Musenyente, HITS

6.2.03	am: Mubende: District Community Services Dept Home visit: Mrs Annete Bugirwa Nalukwago pm: CAWODISA Hand-pump
7.2.03	am: preparation for summary meeting pm: Summary meeting

Appendix II: Preparatory trip notes

10.12.02 – 13.12.02

3.1 Summary

This was a very short but worthwhile four days, spent talking to a range of relevant people in and around Kampala. A lot of interest was shown by all the organisations visited. Unfortunately there was not enough time to contact everyone I intended.

There was recognition that the issue of water and sanitation for disabled people is an important issue that had not been addressed in a systematic way, either by DPOs or watsan providers. It was suggested that DPOs have focused to start with on issues that they saw as achievable, such as education, income-generation etc. whereas watsan is so huge that seems insurmountable (ADD). Ian Arebahona (DWD) acknowledged that this had so far been a 'blind spot' on the part of DWD, citing absence of demand as one (but not the only) factor.
Several people mentioned a lack of collected information/data on the issue, hence the importance of carrying out research.
It was recognised that a lot of information and experience exists that is not written down for different reasons: oral rather than writing culture, pressure of work, implementers thinking that what they are doing is nothing special, etc.
Several people expressed an interest in being involved in the research, to learn and to implement in their own work. It will however be important to try and achieve a balance of skills and experience in the research team.

3.2 Presentation meeting and discussion

3.2.1 Participants

Carolyn Atkinson	OT, Ministry of Health
Scovia Babyerabira	OT, APCPD
Caroline Batanda	Uganda Water & Sanitation NGO Network (UWASNET)
Beatrice Epenu	SCOWE Caring for Orphans, Widows and Elderly
A Kezaala	Friends of the Elderly
Elder Emmanuel	National Organisation of Older Persons of Uganda
Luyonza	NOOPU/FOE
Christine Ndiraba	Headmistress, APCPD Integrated Academy
Sylvia Ntegyereize	Min Gender, Labour & Social Development
Elijah Musenyente	Uganda Society of Hidden Talents
Nganda Fred Kawesa	" "

Kisekka James Weeraga Friends of the Elderly

3.2.2 Purpose of meeting:

To raise the issue of access for disabled people to water and sanitation
To inform about research project
To exchange information and experience on the issue in Uganda
Identify potential field-visit locations

3.2.3 Potential contacts/informants

CBR programmes –all ages – District level
Assistant District Community Development Officers
OTs & PTs are potential sources of information and researchers
District Development plans –Co-ordinator of Community Based services at District level – Assistant CBR officers
Pallisa District Co-ordinator of Community-based services (Musenyente)
WHO/Min of Gender, Labour & Social Development/ MoH
Plastic toilet devices in retail outlets
Would be useful to formulate a detailed questionnaire which could be circulated to field-workers to identify good practice/ adaptations

3.2.4 Useful research team members

CBR worker/ community development assistant/officer
OT
Health assistant/inspector
Carer/family member
Disabled person
Public health engineer

3.3 Meetings

11/12 APCPD John Ndiraba Kiyaga
APCPD integrated school – disabled and non-disabled children, including deaf, physically and mentally disabled. Adapted latrine, designed by OT – design plan available
Other activities: income generation – mobility aids centre; vocational training
Info on other orgs:

12/12 Ian Arebahona DWD
community contributions – how deal with most disadvantaged
funding for school sanitation – accessible latrines
so far DWD relied on community applications
- water needs to be demand driven - need for DPOs to create demand

need involvement of Min of Gender Labour & Social Dev in identifying causes and addressing barriers

12.12.02 Benon Ndaziboneye, Senior Programme Officer, ADD
Disabled people not yet involved in watsan issues
big challenge – hilly, distance, problem for disabled people esp W Uganda
C Uganda wetlands, majority of people use shallow wells, protected springs, tend to be inaccessible
Disabled women need several children to help carry water and other chores – heavy burden on children & women esp in C Uganda
Pallisa District - Bore-hole constructed nr EARS unit for disabled children – requires less effort to pump, can be used one-handed
3 yrs ago DWD promoted social mobilisation to promote community management & decision-making
blind spot on part of advocacy groups not to have got involved in this issue
Kampala slum areas – sanitation a big problem
Mulago Parish Disabled Women's Association – informal group
Disabled people tend to group together & live near each other, therefore it's not unrealistic to site accessible communal facilities near a group.

COMBRA
Urban poor – Kawempe Division - latrines built high because of high water table. Problem to build ramps because of small plots of land, ramp wouldd encroach on neighbouring plots (Waisi)
PLAN international and SC/UK
Portable pit latrines
durable plastic toilet seats
where high water table, cd use different technology to avoid having to raise latrine
SC/UK has constructed latrines in schools in Waise 1 Parish – New Bubajjwe Primary School
Tororo Model CBR District
E region, Palllisa – issue of getting piped water closer to homes

James Mwesigye Executive Director, NUDIPU
voice to promote equalisation of opportunities and improved quality of life
DRT – study into poverty and disability
Decision-making delegated to sub-counties
Need for NUDIPU reps to get involved in consultations at local level
Need to target policies, without which services can't develop.

12.12.02 Jackson Atria, Executive Director, USDC
USDC on PEAP review
Issue of access to latrines in schools, also at home in rural areas
no pit latrines, or inaccessible
e.g. 1 family, widened latrine , made 2 doors, frame for support to child

field staff cd provide more information – checklist wd be useful
Parents' co-operatives
- mothers share time with disabled children – release time for productive work

13/12 Nightingale Kalinda, OT, Mulago Hospital
First OT in Uganda, now nearing retirement. Has a lot of very practical grass-roots experience. Handbook on Assistive devices
State Council project – accessible protected wells
Commode adapted wheelchairs enable elderly to continue social activities, eg attending church, funerals, etc. with dignity
Suggested video would be effective

Appendix III: Criteria for inclusion of examples in field-work

We are interested in examples and ideas that other people can learn from, replicate or adapt to their own needs and situation.

Accessible facilities, adaptations, equipment, (home-made or provided externally), or activities that have helped children and adults with physical impairments and limitations improve their access to water and sanitation-related activities. Can also apply to people with visual impairments, or elderly frail or confused people and children with co-ordination problems.

Water and sanitation-related activities:

Drawing and transporting water, domestic water storage, i.e. placing water into and taking it from a secondary source, such as a storage jar.

Domestic bathing and laundry, household cleaning, grey water disposal.

Sanitation - urination and defecation; household solid waste and excreta disposal.

Communal facilities are to be included where domestic facilities may not be available, e.g. in informal settlements such as peri-urban slums.

Facilities:

Water sources such as springs, wells, rivers, streams and ponds, hand-pumps, tap-stands (both public and private), and rainwater catchment tanks.

Domestic laundry and bathing facilities,

Solid waste and toilet facilities, both pedestal and squat, water-seal and non water-seal.

Physical: drawing/ transporting/storing water

- Water sources that have been designed to be accessible and easy to use by disabled /frail elderly people/children/pregnant women.
- Home-made equipment or assistive devices to make collecting and transporting water easier for a disabled person.
- Water storage facilities – jars, tanks, etc. that have been adapted for easy use by disabled people.

Using water:

- Accessible bathing facilities, or assistive devices/equipment to make bathing and personal hygiene easier, for disabled person or for carer –
- Accessible laundry, food/dish washing facilities, or equipment - either bought or home-made - to make household tasks easier.
- Drinking water – assistive devices.

Latrines/toilet facilities

- Accessible latrines, or adaptations to latrines to make them more accessible for disabled /frail elderly people/children/pregnant women.
- Assistive devices/equipment to make toileting easier, for the disabled person or carer.
- Alternatives to latrines – ways that disabled people cope.

Approaches:

- Examples of projects/initiatives where community-based approaches have been used at community level in consultation/ needs assessment, and disabled people included.

Appendix IV: Data collection frameworks

Introduction

Name Age: under 20; 20 – 29; 30 – 39; 40 – 49; 50+
M/F Job/profession
Location /Address
Contact details
Impairment; functional limitations
Relationship to disabled person/role in relation to facility

General Background
Context – geographic – rural/peri-urban/village/farm, flat/hilly dry/wet etc

Domestic water cycle *Drawing water* *Transporting /storing water* *Using water:* • Bathing/personal cleanliness • Laundry, food/ dish-washing • House cleaning • Drinking water • Disposing of waste water ***Sanitation*** • Latrine access & use/ alternatives • Rubbish disposal	*Description* Accessibility features; dimensions, materials used, technology used, cost *Function* – does it function as envisaged *Quality* – well-made; durability appropriate for level of wear and tear *Use*: - Who uses it? The person it's designed for? How easily? Used, regularly, more/less than it could, why? Who else uses it? How easily? *Appropriateness*: Cost, affordability; Cheaper options? Locally available materials Cultural acceptability / Local beliefs and attitudes Gender appropriateness Convenience; safety; privacy; comfort, ease of use, *Problems,* suggestions for improvements? *Impact* Difference made to disabled person Difference to other family members Any negative impact? *General applicability:* Who else could use it? eg elderly, children Suitable for which physical limitations? Suitable for anyone else? Could it be used in a different context? Could it be adapted for other uses? Could it be made more accessible? How?

Institution/process
Description of process of implementation/ provision of AD Who/ How initiated?
Individual where idea from Who provided advice/ training Who made it happen? How? *Institutional* Agencies/personnel involved How/whether disabled person or family involved in process/choice/ design Factors contributing to success Obstacles to implementation? Whether/how overcome At what stage in project process was accessibility thought about? Why at that stage? Optimum stage? Funding source? How sustainable? Why has this happened here rather than elsewhere? To do with policy, law, individuals, training, NGO pressure? *Comments/recommendations* Could it be done differently Anyone else involved or should have been *Role of community* View of community

Accessible processes

How? Institution/process	
Describe process of implementation/inclusion of disability issues	
How initiated? Who initiated? At what stage in project process was accessibility thought about? Role of community? View of community	Factors contributing to success Obstacles to implementation? Whether/how overcome Why at that stage? Optimum stage? Comments/recommendations
Funding – source?	Sustainable? Comments/suggestions
Why? Why has this happened here rather than elsewhere? Is it to do with policy, law, individuals, training, NGO pressure?	

Appendix V: People contacted

Name	Place	Contact
Mrs Annete Bugirwa Nalukwago	Kyamukona Village, Nabikakala Parish, Bageza S/C, Mubende District.	
Ms Annet Naiga	Mukunyu Village, Kawoko Parish, Butenga sub-county, Masaka District c/o USDC – Masaka	
Ms Agnes Kalibbala Country Rep Benon Ndaziboneye Senior PO	ADD Plot 81, Bukoto Rd, Kampala	041 531 446/7 adduganda@addug.co.ug agkka@addug.co.ug
Mr John Ndiraba Kiyaga Director	Action to Positive Change on People with Disabilities (APCPD), Mulago 2 Parish. Katale Zone, Kampala PO Box 12305 Kampala	077 449 852 apcpd@infocom.co.ug
Ms Christine Nomwanje, Director	APCPD Integrated Academy Mulago 2 Parish. Katale Zone, Kampala PO Box 16293 Wandegeya	Tel: 077 391064
Mr Fred K Lukabwe	APCPD, C/o Min of Gender, Box 3306, Kampala	077 500686 kisiriko@dehezi.net
Ms Scovia Babyerabira OT	APCPD, PO Box 16293 Wandegeya	Tel: 077 373654 Scoviabab@yahoo.com
Mr James Magala Occupational therapist Senior supervisor Mrs Kalinda Nightingale National Co-ordinator	CBRN Dept, Mulago Hospital PO Box 7051 Kampala	Jm_magala40@yahoo.com
Ms Joanna Mujurizi, General Sec Ms Angella Mworozi, Treasurer Ms Shamim Anyeko Mwesgye, Chairwoman Ms Mary Achilles Namatovu, Administrative Sec	Children & Wives of Disabled Soldiers Association (CAWODISA) Cawodisa Head Office, PO Box 39, Mubende	cawodisa@hotmail.com cowadisa@hotmail.com achmarnam@aol.com
Ms Barbara Bataseki, Acting Director Mr Kiwanuka Moses, OT, CBR trainer	COMBRA PO Box 708 Kampala	041 290803 077 380672 combra@utlonline.co.ug
Mr Simon Kenny	Watsan adviser, DFID	kenny@infocom.co.ug
Mr Bengt Kokhauge Uganda representative	DSI (Danish Council of Organisations of Disabled People) c/o NUDIPU, PO Box 8567, Kampala	041 531380 benkir@starcom.co.ug
Mr Ian Arebahona	Directorate of Water Development	arebahona@dwd.co.ug
Elder Emmanuel Luyonza	Friends of the Elderly/ National Organisation of Older Persons of Uganda NOOPU	041 232 960; 071 876650 foelderly@yahoo.com

	PO Box 931 Kampala;	
Mr Lubega FX Chairman	Friends of the Elderly Luweero Home for the Elderly	041 540580
Mr A Kezaala	Friends of the Elderly	071 221331
Ms Gladys Namugenyi	Friends of the Elderly	041 540425
Mrs Veronica Alibazewa Mbabali	grandmother of Barbara Namaanda Kakonyu village, Mkoni Parish, Kingo sub-county, Masaka District c/o USDC – Masaka	
Mr Musenyente Elijah	HITS - Uganda Society of Hidden Talents,Box 7304 Kampala	071 839 801 musenyente@hotmail.com
Mr John Kiwanuka FEDEDEPO	Kamokya 2 Parish, Kisenyi Zone, PO Box 7072 Kampala (also c/o APCPD)	
Ms Joy Mwesigwa, Director Mr Fred Semakula, Assistant Director	Kampala School for the Physically Handicapped PO Box 14278, Kampala	041 272128
Mr John Lubega	Kasambya 2 Village, Kigege Parish, Nakaseke, PO Box 1003, Nakaseke SDA	
Sister Mary Gertrude Natalie (Administrator/Nurse), Mr George William Makombe (Book keeper) Ms Joan Opar (Social Worker)	Katalemwa Leonard Cheshire Home for Children, Kampala, PO Box 16548, Wandegeya, Kampala	
Ms Namuli Agnes Councillor	Masaka Municipal Council Kairikiti LC1, Nyendo Parish, Nyendo Senyange sub-county, Masaka District PO Box 210, Masaka	
Mr Baryayebwa Herbert, Commissioner Mr Jackson Mirembe, CBR specialist, Masiga Samson, Head of CBR Section Ms Sylvia Ntegyereize	Ministry of Gender, Labour & Social Affairs, Dept of Disability & the Elderly PO Box 7136, Kampala	mglsd@swiftuganda.com disability@infocom.co.ug
Mr Luyima Paul Head	Ministry of Health, Environmental Health Section PO Box 7272 Kampala	041 341696 paulluyima@hotmail.com
Ms Carolyn Atkinson Occupational therapist	Ministry of Health, Disability and Rehabilitation Desk	carolyn_atkinson@hotmail.com
Ms Josephine Nalugo	Ministry of Health, Disability and Rehabilitation Desk	
Mrs Takia Nambi Sonko, Miss Nakivumbi Joweria	Kaboyo Village, Nakaleembe Parish, Kiseka sub-county, Masaka District	

	c/o USDC – Masaka	
Ms Mabasumba Mary Ms Nabakoza Rose	Kyekulula Village, Busubi Parish, Liseka sub-county, Masaka District c/o USDC – Masaka	
Mrs Mary Kabiito	mother of four disabled children Ka-kunyu Village, Mkoni Parish, Kingo sub-county, Masaka District c/o USDC – Masaka	
Mr Kobusheshe Stephen Mobility instructor, Treasurer	Mubende District Association of the Blind	
Mr Yiga George, Chairman	Mubende District Association of the Blind	
Mr Kurahiira Godfrey District Community Services Officer	Mubende District Community Services Dept, Box 165/201/83 Mubende	0464 4025/4022
Mr Opoya Vincent, CBR co-ordinator	Mubende District Community Services Dept PO Box 93, Mubende	0464 4167
Mr Andrew Mubangizi District OT, President of UAOT Mr Tondo Samuel, CBR worker/OT assistant	Nakaseke Hospital PO Box 1022, Nakaseke, Wobulenzi, Luweero District	
Ms Eva Nakatudde	Namusale Village, Namusale Parish, Kapeka c/o Samuel Tondo	
Mr James Mwesigye Executive Director	National Union of Disabled Persons of Uganda PO Box 8567, Plot No 530, Kisasi Rd, Bukoto, Kampala	Tel: 041 540 179 Fax: 041 540178 nudipu@starcom.co.ug nudipu@utlonline.co.ug
Ms Rachel Kansiime, Head of OT Dept	OT Department Mulago Hospital, PO Box 7051 Kampala	rachelkansiime@yahoo.com
Richard Mutabazi	Former Project officer, responsible for watsan, Save the Children/UK	ricmuta@yahoo.com
Beatrice Efenu	SCOWE : Caring for Orphans, Widows & Elderly Box 611 Kampala	
Mr Kyamuwendo Elijah	Son of Mrs Nalukwago Bulamu Farm, PO Box 77 Mubende	kulikaug@infocom.co.ug
Ms Agnes Bitature	UNICEF Water & sanitation 7 Kisozi Lane off Kyagwe Rd, Kampala	Abitature@unicef.org 041 259913/4 235923/4 234591/2
Baguwemu Ali, CBR Lecturer & research co-ordinator, Ddamulira Moses, CBR Lecturer & Disability Re-source Centre Manager,	UNISE: Uganda National Institute for Special Education PO Box 6478, Kampala	Tel: 041 222935 Fax: 041 222961 Alibagu-wemu2002@yahoo.co.uk

Locoro Victor, CBR Lecturer, Olural Godfrey, Public Relations Officer.		drcu-nise@swiftuganda.com unise@swiftuganda.com
Mr Kalema Vianney	uncle of Niko c/o Nassolo Cate Jjunko Kiwaga Health Care PO Box 346, Mukomo	
Mr Jackson Atria Director	USDC: Uganda Society for Disabled Children Plot 1 Kanjokya St Kamwokya	041 530 864 ugasoc@africaonline.co.ug
Mr Katek Moses Owere, Occupational therapist Ms Neema Teddy, Programme Assistant	Masaka Regional Referral Hospital c/o USDC – Masaka PO Box 1738, Masaka	omokat@scientist.com neemab85@hotmail.com
Mr Martin Ogwang Centre Manager	Masaka Vocational Rehabilitation Centre USDC – Masaka	mogwangb@yahoo.co.uk
Ms Caroline Batanda	UWASNET: Uganda Water & Sanitation NGO Network	041 222922; ngocoord@infocom.co.ug

Appendix VI: Data tables

Table 1: Drawing water

1. Drawing water						
1.1 Accessible water sources						
#	**Description**	**Dimensions**	**Accessibility**	**How used**	**Lessons learned**	**Ref**
1.	Piped water to domestic tap to side of house	H: ~50cm	3m from back door along concrete ramp	Disabled man can independently fill 5l jerry-can while supporting self on crutches	*Strengths:* Proximity of water point. Cheaper in the long-term than buying water. Handle of jerry-can suitable for crutch user to hold in one hand. *Drawbacks:* High cost of initial investment	Int.1 Ug_001
2.	Tap from rainwater storage tank	Circular brick built tank. Tap H: ~80cm	5m from back of house along rough ground	Disabled child can independently draw water into 1l jerry can, while leaning on one crutch and against tank & tap	*Strengths*: Proximity of water point Small jerry-can light enough for child to hold in one hand. Height of tap used to lean on & help balance. *Drawbacks:* Tap too high to stand jerry-can on ground while filling Leaning on tap could damage it	Int.12 Ug_062-064

1. Drawing water						
1.1 Accessible water sources						
#	**Description**	**Dimensions**	**Accessibility**	**How used**	**Lessons learned**	**Ref**
3.	Tap from rainwater storage tank	Circular brick built tank. Tap H: 30cm. Tap can be padlocked	8m from house via rough level ground	Elderly blind woman finds way to water tank, using white cane and wooden marker posts, that also support gutter from roof to tank. Fills 5l jerry-can at tap.	*Strengths*: Proximity of water point Low tap means spout enters jerry-can opening, while resting on ground - no water wasted. Lockable tap prevents other people using water Mobility markers cost nothing. *Drawbacks*: Need to bend down to use. Low tap unsuitable for jerry-can larger than 5l.	Int.24 Ug_088-093
4.	Water piped to tank, access by tap	H:~80cm	Central point reached via dirt paths. W'chair users can approach, but not near enough to draw water.	Ambulant children draw water for others, w'chair users transport on footrests for friends	*Strengths*: Proximity of water point *Drawbacks:* Lack of access for w'chair users	Int.3
5.	Piped water to taps over concrete washstand.	Long concrete waist level slab, tap spouts ~25cm above slab. Press-action taps Additional low level tap H: ~30cm	Central point reached via concrete paths Concrete surround.	Used by persons standing with crutches, or sitting in w'chair or crawling. Used to fill 1 – 10l jerry-cans. Concrete slab to stand jerry-can on.	*Strengths*: Proximity of water point Press-action tap easy to use by person with poor grip Close access for w'chair, slab high enough for knees to wheel under Jerry-can stands on slab, takes weight of water while filling – can be done one-handed. Low level tap can be used by person crawling.	Int.19 Ug_083-084

1. Drawing water						
1.1 Accessible water sources						
#	**Description**	**Dimensions**	**Accessibility**	**How used**	**Lessons learned**	**Ref**
6.	Communal hand-pump	Standard India Mark II hand pump on circular raised concrete apron H: ~30cm Handle L: ~80cm	Proximity: 100m from users' houses Access via rough narrow sloping track. Alternative source is stagnant marsh-water.	Used by elderly people. Ambulant disabled people can reportedly reach, and use with help. (Comment: "There is always someone around to help").	*Strengths*: Proximity of water point *Drawbacks:* Persons crawling, using crutches or wheelchair could not use pump unaided, due to raised apron and short handle.	Int.9 Ug_044
7.	Communal hand-pump	Standard India Mark II hand pump drawing on shallow well On circular raised concrete apron H: ~30cm Handle L: ~95cm	Reached via a rough rutted sloping track off the main road.	Used by local community. Water released on light up stroke (result of high water table?)	*Strengths*: Easy to operate with little strength, e.g. by child/elderly /one-handed person. This could be achieved wherever high water table exists. Longer handle enables pump to be operated from ground o/s apron. *Drawback:* Ease of operation not intentional, depends on environmental factors.	Int.26 Ug_104-106
8.	Communal hand-pump	(Reported, not observed)		W'chair user prefers to use hand-pump 1km away along accessible path, than nearer pump along steep rough slippery path.		Int.7

1. Drawing water						
1.1 Accessible water sources						
#	**Description**	**Dimensions**	**Accessibility**	**How used**	**Lessons learned**	**Ref**
9.	Communal hand-pump Pallisa	Standard India Mark II hand pump. Handle L: ~95cm Circular concrete apron, level slightly below surrounding ground. Low concrete rim. Square concrete slab to stand on while pumping. Raised ~15cm	Reached via rough ground – w'chair user can wheel up to edge of apron.	Used by local community. W'chair/crutch user can reach handle. Hard pump action – much strength needed.	*Strengths*: Disabled person can get up to pump and reach handle. *Drawback:* Concrete slab slippery for person with poor balance. Slab prevents w'chair from getting in best position to pump	Int.28 HITS_13, 14
1.2 Assistive devices						
10.	Adapted rope-handled jerry-can	20l jerry-can with top cut off, rope pierced either side to form handle of desired length		Disabled man with one short arm collects water in jerry-can from spring, by leaning down and lowering can til under spring.	*Strengths:* Length of handle can be adjusted to suit user. Longer handle enables user to lower the jerry-can further from above. This compensates for lack of reach or flexibility, or not being able to descend to level of water source. Plastic flexible but strong enough to be cut and adapted.	Int.5 Ug_028 – Ug_030 Ug_dwg01

Table 2: Devices for transporting water

2: Devices for transporting water					
#	**Description**	**Size**	**How used**	**Lessons learned**	**Ref**
1.	Jerry-can carried by disabled adult whilst walking using crutches.	5 l	User hooks two/three fingers through handle of jerry-can, with the rest of his hand holding cross-bar of crutch.	*Strengths*: Jerry-can has handle which is possible to carry using 2 or 3 fingers Screw-on lid prevents spilling even when being moved erratically Jerry-can available in small enough size for child to carry	Int.1 Ug_001
2.	Jerry-can carried by child whilst using crutches to walk	1 l			Int.12
3.	Communal hand-pump		Disabled girl with one arm can fetch water if someone else pumps for her.	*Strengths* : Where fetching water is a pair/group activity, the contri-bution of a disabled person to one part of the task is valued. Screw-on lid (or banana) prevents spilling when carried on side – more flexible use.	Int.16 (Reported, not observed)
4.	Jerry-can carried on its side.	20 l	Girl with no forearms carries full jerry-can on its side, once a companion has lifted it onto her head for her, and takes it off on arrival. (She is unable to draw water)		Int.15 *Ug_074*
5.	Jerry-can carried on its side on w'chair.	25l	Several jerry-cans can be carried on their side beneath seat of a long-distance hand-operated wheelchair.	*Strengths*: Square shape suitable for carry on footrest or under w'chair. Screw-on lid (or banana) prevents spilling when carried on side – more flexible use. Jerry-cans available in range of sizes – user can select size that a/ fits on footrest, b/ can lift on and off, and c/ doesn't tip up w'chair (may depend on weight of user).	Int.1 Ug_012
6.	Jerry-can carried on foot-rest of w'chair	10l 20l	Carried on foot-rest between feet of user on locally made Huckstep* wheelchair - tricycle with single small rear wheel. Footrest dimensions: 33 x 23cm		Int.4, Int.7 *Disabled Village Children p606
7.	Jerry-can with top cut off, rope pierced either side to form handle of desired length.	20 l	Man with one very short arm hooks rope handle over arm to carry water. Filled half full. (Idea from nearby car washers who adapted cans in the same way)	*Strengths*: Handle can be made any length for convenience of user. *Drawbacks:* Open top container more vulnerable to contamination.	Int.5 Ug_028 –031 Ug_dwg01

2: Devices for transporting water					
#	**Description**	**Size**	**How used**	**Lessons learned**	**Ref**
8.	Wooden two-wheeled trailer, hooked onto rear of w'chair with single rear small wheel.		Used by w'chair user to transport jerry-cans of water.	*Strengths*: Trailer has other uses: transporting e.g. goods to market, young child, etc. More weight can be pulled than can be carried directly on w'chair *Drawbacks:* Not suitable for rough, narrow paths. Photo only seen. No user interviewed.	Int.22 Photo HITS_06
9.	Four-wheeled wooden trailer with harness.		Person using crutches or crawling ties harness round waist or shoulders, to enable him/her to pull trailer.	*Strengths*: More weight can be pulled than can be carried on person's back. *Drawbacks:* Drawing only seen. No actual example observed.	Ug_dwg17, 18
10	Long bag with backpack type straps. One wheel attached to bottom of bag		Person using crutches carries backpack using straps over shoulder and around waist. Some of weight taken by wheel, so combination of carrying and wheeling used	*Drawbacks:* Drawing only seen. No actual example observed.	Ug_dwg15, 16
11	Portable wooden ramp		Wooden ramp for w'chair access to buildings or facilities with steps. Kerb either side to prevent w'chair falling off edge	*Strengths*: Can be placed wherever needed. Cheaper than concrete. *Drawbacks*: Less durable than concrete Heavy to manoeuvre. User may need helpers to move ramp as needed.	Int.22 HITS_2, Ug_006

Table 3: Assistive devices for drinking

3. Assistive devices for drinking					
#	Item	Description	Use	Lessons learned	Ref
1.	Wheelchair tray – waist level	Wooden tray with iron rods welded each side, which slot into iron tubes welded onto arms of w'chair. Rim round edge prevents things sliding off. Semi-circular cutaway in tray allows snug fit with user's body	Boy sitting in w'chair uses tray for a variety of activities, mainly drinking & eating.	*Strengths*: Drinker has control over activity - can drink at own pace. Chair and tray support child's body making the activity easier Stable surface with rim and close fit reduce risk of spilling drink. This kind of tray can also be adapted to use with an ordinary chair, if there is no w'chair. *Drawbacks*: Welding skills and equipment needed.	Ug_067-69 Ug_dwg05
2.	Wheelchair tray – shoulder level	Wooden tray with iron rods welded each side, slot into vertical iron tubes attached to each wheel axle of w'chair.	Girl with limited use of arms, drinks without using hands, from plastic mug placed on tray in front of her.	*Strengths*: Drinker has control over activity - can drink at her own pace. Plastic mug locally available. *Drawbacks*: Risk of knocking mug over. Welding skills and equipment needed.	Ug_035-041 Ug_dwg07

Table 4: Accessible facilities for bathing

4. Accessible facilities for bathing					
#	**Description**	**External access**	**Internal facilities**	**Lessons learned**	**Ref**
1.	Family bathroom designed by man using crutches to walk	Entrance wide enough (80cm) to enter on crutches, no door concrete ramp and path approach	Concrete 110 x 210cm	*Strengths*: Used by whole family Room for user to sit with legs outstretched	Int.1 Dia 1 Ug_005
2.	Communal bathroom with concrete sitting blocks in school for children with physical impairments	Entrance wide enough for wheelchair to enter. No door. Floor level with approach path.	Rough concrete floor Fixed blocks 23cm square Concrete covered brick Varying heights from 10 – 18cm	*Strengths*: Child sitting on seat not in dirty bathwater Room for child to sit with out-stretched legs Blocks narrow so water drains off easily Low height of blocks reduces risk of injury if child falls. Room for helper/s and w'chair *Drawbacks*: Those with poor balance need support Low height – most need help getting back into wheelchair No internal water source in bathroom	Int.3 Ug_01 Ug_014
3.	Communal shower cubicles in residential centre for children & adults up to age 25	Entrance wide enough (80cm) for wheelchair to enter Inward opening door	Concrete floor Low mixer taps operate shower Low tap to fill bowl/ bucket	*Strengths*: Water source inside cubicle Room to transfer to/from w'chair, & for helper *Drawbacks*: High cost	Int.6
4.	Communal shower cubicles in residential centre for young people with physical impair-ments	Entrance wide enough for wheelchair Floor level with concrete approach path	Concrete floor Internal tap H: 110cm	*Strengths*: Room to transfer to/from w'chair & for helper *Drawbacks*: Tap may be too high for a person crawling High cost	Int.19 Ug_086

Table 5: Assistive devices for bathing

5. Assistive devices for bathing					
#	**Item**	**Description**	**Use**	**Lessons learned**	**Ref**
1.	Plastic stool Second plastic stool for bowl		One for sitting on while bathing, with wash-bowl on the other	*Strengths:* Durable, easy to clean. Bather comfortable - not sitting in dirty water (applies to all bathing seats) Convenient height for transfer to/from w'chair *Drawbacks:* High cost Unsuitable for person with poor sitting balance	Int.6
2.	Wooden bathing stool	H: 14cm No back or sides	For sitting on while bathing	*Strengths:* Durable materials, low cost 14cm stool, low enough to use washing bowl on floor.	Int.1
3.	Wooden bathing stool	Solid seat and sides H: 25cm, L: 30, D: 20cm		Narrow seat allows water to drain easily *Drawbacks:* Unsuitable for person with poor sitting balance Strength and balance needed to transfer to/from stool	Int.22 HITS_05
4.	Wooden bathing chair (doubles as commode chair)	Seat H: 40cm, W: 35.5. D: 33cm Oval hole in seat 24 x 18cm Back H: 67cm No sides.	For sitting on while bathing	*Strengths:* Low cost, locally made, durable Easy to transfer to/from wheelchair Hole in seat allows water to drain easily *Drawbacks:* User with poor balance risks falling off sideways	Int.8 Diag.8.1
5.	APT[3]. bathing stool APT stool for bowl		One for sitting on while bathing, with wash-bowl on the other	*Strengths:* Low-cost *Drawbacks:* Not durable because not waterproof	Int.18 Described, not observed

[3] APT: Appropriate Paper Technology, is a technique for making objects – furniture, rehabilitation equipment, etc. from cardboard and paper.

5. Assistive devices for bathing					
#	**Item**	**Description**	**Use**	**Lessons learned**	**Ref**
6.	Metal bathing frame:	H: 30cm, W: 50cm, L: 100cm	For sitting on while bathing, with enough room for wash-bowl. Can also be used for clothes washing.	*Strengths:* User not sitting in dirty water Enough room for user and bowl Durable *Drawbacks:* High cost	Int.19 Ug_086
7.	Wash-bowl stand	Wooden stand - bowl 'slots in' to side supports	To hold wash-bowl while bathing	*Strengths:* Wash-bowl held firmly in place. *Drawbacks:* Suitable for one size of bowl only	Int.22 HITS_05
8.	Jerry-can shower	Adapted 5l jerry-can looped over pole controlled by rope held by bather	For bather with limited arm movement	*Strengths:* Low cost *Drawbacks:* Time-consuming – jerry-can needs filling and preparing	Int.8 Ug_dwg04
9.	Plastic bed bathing sheet	Larger than size of bed	Bather covers bed with plastic sheet, then lies prone to bathe, with wash-bowl on floor	*Strengths:* Prevents bedclothes getting wet Easy to clean Low cost, available locally	Int.7 Ug_dwg03
10.	Toothbrush stand	Wooden floor standing pole, with slots to hold toothbrush at required height	For use by person with limited or no use of hands	*Strengths:* Could be made to any height Could be adapted to stand on table *Drawbacks:* Uses a lot of wood. Not fixed so may be unstable	Int.22 HITS_04
11.	Implement holder	'Arm' attachment to wheel-chair tray, with cleft end, to hold spoon.	For user with no/limited use of arms. Suitable for holding sponge, toothbrush, comb, or other implement	*Strengths:* Low cost, locally made *Drawbacks:* Support needed to use.	Int.8 Ug_036-40

5. Assistive devices for bathing					
#	**Item**	**Description**	**Use**	**Lessons learned**	**Ref**
12.	Long wash-cloth	1.2m long, made of sisal Loop at each end Bather holds one loop in hand, the other in foot to wash whole body	For user with limited use of arms	*Strengths:* User can bathe independently Low cost, materials locally available	Int.5 Ug_dwg02
13.	Bathing ring	Wire ring, padded with foam rubber (mattress foam) covered with cotton fabric. Fixes into crack in wall.	For washing arm, when bather has only one arm, or limited arm movement.	*Strengths:* Low cost *Drawbacks:* Can work loose, may wobble making it less effective	Int.16 Ug_080-81 Ug_dwg08
14.	Floor cloth		Placed at bathroom entrance, signals to blind user to slow and step up.	*Strengths:* No cost	Int.24 Ug_101
15.	Well-organised bathing area		For blind user to know where things are	*Strengths:* No cost *Drawbacks:* Need co-operative and well-organised family	Int.24 Ug_102

Table 6: Assistive devices for washing clothes/dishes/house-work

6. Assistive devices for washing clothes/dishes/house-work					
#	**Item**	**Description**	**Use**	**Lessons learned**	**Ref**
1.	Laundry slab at residential centre	Concrete platform with tap in middle, with knee hole high enough for wheelchair to go under.	Used by wheelchair and crutch users for washing laundry (& drawing water).	*Strengths:* Durable No need to transport water. *Drawbacks:* High cost	Int.19 Ug_083-84

6. Assistive devices for washing clothes/dishes/house-work					
#	**Item**	**Description**	**Use**	**Lessons learned**	**Ref**
2.	Metal frame	H: 30cm, W: 50cm, L: 100cm. Frame of welded metal pipe, painted. Top consists of 4 cross struts, allowing drainage.	For sitting on while washing clothes, with enough room also for wash-basin. (Also used for bathing).	*Strengths:* Durable Enough room for user and bowl *Drawbacks:* High cost	Int.19 Ug_086
3.	Well-organised laundry area		Blind woman keeps laundry area orderly and organised so she can find and use everything independently.	*Strengths:* No cost	Int.24 Ug_102
4.	Dish-rack	Made of wood, designed like a table with wooden slats on the top for drainage. High enough for knees of wheelchair user to go under..	Aimed at promoting general good hygiene among the local population, but its design makes it suitable for a wheelchair user.	*Strengths:* Low/no cost – materials freely available locally	HITS video
5.	Mopping floor	A blind man describes washing the floor systematically, and feeling with his hand whether or not the floor is clean.		*Strengths:* methodology costs nothing	Int.25

Table 7: Accessible toilet facilities

7. Accessible toilet facilities								
#	**Description**	**External**	**Internal**	**Toilet an/seat**	**Support rails**	**Use**	**Lessons learned**	**Ref**
1.	Toilet designed and used at home of disabled man	Approach w'chair accessible via concrete path, W: 80cm Floor level with outside path. Door opens outward	Cubicle: 125 x 96cm (wheel-chair left outside) Concrete floor. Space to shut door with legs outstretched	Seat – raised cement covered brick, raised slightly at back for support. Painted - easy to clean . W: 42 x D: 52 x H: 41-44cm Lip around top of hole helps prevent fouling of drop hole walls (see diag 2) Hole 19 x 11cm	Not needed	Used by one adult male crutch/ wheel-chair user, strong upper body. Wears rigid callipers	*Strengths:* Room for *u*ser to sit with legs outstretched Painted cement seat easy to clean. Designed by user so tailored to individual needs. *Drawbacks:* Family uses separate toilet - high cost of 2 toilets	Int.1 Dia App1.1#1 & 2 Ug_004
2.	Toilet in school which includes disabled children	Earth ramp to door W'chair accessi-ble entrance (70cm) 2-way hinged door - opens out & inwards Slide bolts o/s & in	Enough space to turn wheel-chair (125 x 225cm) Cement floor Toilet in corner	Square cement-covered brick raised toilet seat: W: 48cm D: 52cm H: 37cm. Hole 22 x 12cm Painted for easy cleaning	Hand-rail: 25mm o/s Ø g.i. pipe from door to length of toilet, & on other side of toilet H: 80cm	Used by disabled children aged 6-18. majority lower limb impairments, incl w'chair, crutch calliper users, some with general poor co-ordination.	*Strengths:* Raised seat suitable for user unable to squat or with poor balance. Easy transfer from/to w'chair Painted screed seat easy to clean. Room for w'chair to enter, turn, for helper & for child to sit with out-stretched legs. Grab-rail from door to toilet supports user with poor balance. 2-way hinge lets door be pushed open from o/s or i/s *Drawbacks*: Rail on i/s of door would make it easier to close from i/s	Int.2 Ug_007-011

7. Accessible toilet facilities								
#	**Description**	**External**	**Internal**	**Toilet an/seat**	**Support rails**	**Use**	**Lessons learned**	**Ref**
3.	VIP latrine with twin sitting blocks	Earth path to door. floor ~4cm higher Door opens outwards, too narrow for w'chair to enter	Wider than standard, but no room for w'chair. Cement floor Brick built with roof	Twin brick & cement blocks for sitting, one either side of hole. H: 17cm; D: 25cm, W: 13cm, gap: 17cm	Hand-rail gi pipe, floor attached each side of toilet (50% missing due to corrosion)	Used by disabled children with PI, aged 7-18yrs. Majority with CP, w'chair users, others poor balance & co-ordination, weak grip.	*Strengths:* Room for helper *Drawbacks:* No room for w'chair, so transferring a problem Children with callipers can't bend legs - no room to shut door – lack privacy Blocks far apart, not safe for small children No rail between doorway and toilet so no support as child enters Corrosion of iron rails due to latrine fumes	Int.3 Ug_015, 021, 022
4.	VIP 'model' squat latrine	Concrete ramp approach with level area o/s door, hand-rail along one side of ramp Wide entrance, door opens outward Grab-rail attached to o/s wall for support while opening door. Large slide bolt for easy grip.	Brick built roofed Rough finish cement floor W: 180 80 cm space behind toilet for carer 150 cm between door and front of toilet	Squat latrine, footplates raised 3cm from floor	Horizontal 50mm Ø g.i. pipe hand-rail from front to back wall; support rail on both sides of toilet at different heights All attached to side walls Lowest rail H: 38cm	children with PI as above	*Strengths:* Rough floor non-slip Space for w'chair to enter, turn Space for carer to stand at front or behind Preferred by carers for ease of supporting child *Drawbacks:* High cost Rough floor – absorbs urine so difficult to clean Side rails prevent sideways transfer from w'chair	Int.3 Ug_016, 018, 019
5.	VIP 'model' latrine with raised seat			Brick built round raised toilet seat (41cm)		children with PI as above	*Strengths:* Preferred by male users Raised seat convenient for w'chair transfer *Drawbacks:* Hole quite far back in seat – risk of fouling seat by small child	Int.3 Ug_016, 017, 019

7. Accessible toilet facilities								
#	**Description**	**External**	**Internal**	**Toilet an/seat**	**Support rails**	**Use**	**Lessons learned**	**Ref**
6.	VIP 'model' latrine with twin blocks	Hole in door allows adult to open from o/s if needed.		Twin blocks H: 25cm, gap between blocks 14cm		children with PI as above	*Strengths:* Preferred by girl users – reason not clear *Drawbacks:* Gap between blocks may be too wide for small child to use	Int.3
7.	Standard squat toilet with low rails	Wide entrance, no door w'chair accessible	Smooth cement floor	Squat toilet with wide ceramic pan no footplates. W: ~30cm. Flush toilet.	g.i. pipe hand-rail attached to floor on both sides of toilet. H: ~30cm.	children with PI as above	*Strengths:* Suitable for user able to squat. Rails support user with poor balance. Smooth cement floor & ceramic pan easy to clean. Could be used with toilet chair over pan. *Drawbacks:* Unsuitable for child unable to squat Children risk falling into toilet because pan so wide. Smooth floor becomes slippery when wet. Needs water to flush.	Int.3 Ug_020
8.	Western pedestal toilet with rail each side	Wide entrance Door opens inward	Smooth cement floor, tiled walls Hand-basin inside cubicle.	Ceramic pedestal toilet with plastic seat and lid. Flush toilet.	50mm o/s Ø g.i. pipe rail, fixed to floor on both sides of toilet.	children with PI as above	*Strengths:* Raised seat convenient for w'chair transfer. Smooth cement floor & ceramic pan easy to clean. Hand-basin inside allows privacy for personal hygiene. *Drawbacks:* High cost of ceramic Needs water to flush. Hand-basin too low for w'chair to go under.	Int.3 Ug_023-025

7. Accessible toilet facilities								
#	**Description**	**External**	**Internal**	**Toilet an/seat**	**Support rails**	**Use**	**Lessons learned**	**Ref**
9.	Indoor toilet with either pedestal or squat toilet	Entrance wide enough for w'chair (80cm) door opens inward Slide bolt o/s & i/s	Room for w'chair to enter & turn + helper if needed. (250 x 145cm)	Ceramic pedestal toilet Space either side for transfer or carer to stand	No support rails		*Strengths:* Room for w'chair to enter & turn, & for helper Raised seat convenient for w'chair transfer. *Drawbacks:* High cost of ceramic. Needs water to flush.	Int.6 Diag A6.1
10.	HITS accessible pit latrine	Dirt path to wide entrance, low threshold, door opens inward Brick built structure. Thatched roof.	Room for w'chair to enter & turn + helper if needed. Smooth earth floor	Simple hole in dirt floor for squatting, no footplate. Suitable for use with toilet chair. (Room for chair to be moved on and off the toilet).	None	Can be used by person using w'chair, crutches or crawling.	*Strengths:* Easy access for w'chair user, with or w/o helper Low cost – locally available traditional materials used. *Drawbacks:* Earth floor less easy to keep clean.	Int.22 HITS_03, 11, 12
11.	Accessible toilet in Primary school New Bubajjwe	Accessible toilet 1 of 6 stances at school. Concrete ramp approach with wall on each side. Entrance wide enough for wheelchair to enter.	Room for w'chair to enter Room for helper. Room for child to sit with outstretched legs.	Square cement-covered brick seat, H: ~35cm Toilet hole lined with 150mm HDPVC pipe (same as used for ventilation)	Grab-rail – g.i. pipe attached to each side wall for length of toilet seat H: ~80cm	Disabled pupil, w'chair user	*Strengths:* Raised seat convenient for w'chair transfer. PVC pipe makes drop hole easy to clean. Planned from outset - negligible extra cost *Drawbacks:* Hole set quite far back in seat – risk of fouling seat. Comment: "Cement cold for sitting". No rail between doorway and toilet so no support as child enters.	Int.27 Bubaj_1 – 3

7. Accessible toilet facilities								
#	**Description**	**External**	**Internal**	**Toilet an/seat**	**Support rails**	**Use**	**Lessons learned**	**Ref**
12.	COMBRA raised seat toilet	Outward opening door No room for w'chair to enter	Brick built roofed Smooth cement floor	Square cement covered brick seat, W: ~50, D: ~50, H:~25-30cm	Grab rail attached to each side wall, L:~50cm, different heights	Disabled CBR workers	*Strengths:* Raised seat convenient for w'chair transfer. Comfortable for persons unable to squat. Painted cement seat easy to clean. Grab-rails provide support for lowering onto and getting up from seat. *Drawbacks: w'chair* needs to be left o/s Grab rail from door to toilet could help users with poor balance. Door opens 180°n. Door stop & rail on i/s of door could make it easier to shut from i/s.	COMBRA_01, 02

7. Accessible toilet facilities								
#	**Description**	**External**	**Internal**	**Toilet an/seat**	**Support rails**	**Use**	**Lessons learned**	**Ref**
13.	School Sanitation Latrine Options: Design and construction guidelines.	Concrete ramp; level landing if affordable Cubicle located at one end of row of stances for privacy. Dwg shows door wider than for standard cubicles, opens inwards.	D: 120cm x W: 150cm	2 dwgs: 1 with squat latrine 1 with circular raised seat	Hand-rails attached to wall, one horizontal, one diagonal on at least one side of toilet.		*Strengths:* Accessible toilets included as part of main government guidelines on school sanitation. Drawings, text & design specs provided for conventional pit, pour flush & eco-san latrines. *Drawbacks:* Design specs incomplete, some dimensions missing. Eco-san latrine shows wider door for wheelchair access, but with steps & no ramp. Inconsistencies – drawing shows inward opening door, diagram outward opening. Independent access difficult: diagram shows no landing + outward opening door; no rail on ramp or o/s wall. No i/s washing facilities. Separate washroom for girls provided – also accessible? Dwg shows it located at opposite end of stance to accessible toilet.	Ug_dwg09, 10 Semakula et al (2002).
14.	Rural water supply & sanitation handbook for extension workers	Ramp approach with handrail. Level landing/platform in front of door Door W: 75cm max [sic] Door opens outwards	Cubicle dimensions: 115cm x 170cm Floor cement screed.	Squat latrine	5cm Ø handrail on each side of toilet, attached diagonally to wall. H: 60 – 90cm		*Strengths:* Accessible toilets included as part of mainstream sanitation guidelines. Drawing and design specs provided. *Drawbacks:*	Ug_dwg12-14 Carl Bro Int'l, Vol 2, Annex

Table 8: Assistive toilet devices

8. Assistive toilet device					
#	**Description**	**Specifications**	**Use**	**Lessons learned**	**Ref**
1.	Wooden commode chair, used with bucket underneath (doubles as bathing chair)	Seat H: 40cm, W: 35.5. D: 33cm Oval hole in seat 24 x 18cm Back H: 67cm . No sides. Varnished wood	Used by f w'chair user, carer pushes chair, helps her transfer Situated beside house. Carer empties bucket into latrine	*Strengths:* Low cost, locally made, durable Easy transfer from wheelchair. Easy to clean *Drawbacks:* User with poor balance risks falling off sideways. Need to dispose of waste in latrine, & to clean receptacle.	Int.8 Ug_033-034 Dia.App1.8
2.	Wooden toilet stool, used in latrine over toilet hole	Unpainted wood, 2 planks for seat, hole made by gap between. No back or sides. W: 30 x L: 40 x H: 25cm	Used independently by child with weak legs, crutch user.	*Strengths*: Durable, locally made, low cost Front plank acts as splashguard. Comfortable height [Child's comment: "the potty made my legs go numb"] No need to empty & clean potty– child not dependent on others Uses same toilet as rest of family – privacy & inclusion. *Drawbacks*: Unpainted wood absorbs urine – difficult to keep clean Need enough room in latrine to move stool on/off toilet hole.	Int.12 Ug_065-066 Ug_dwg06

8. Assistive toilet device					
#	**Description**	**Specifications**	**Use**	**Lessons learned**	**Ref**
3.	Wooden toilet stool, used with paper underneath.	Unpainted wood, 2 planks for seat, hole made by gap between. No back or sides. W: 30 x L: 36 x H: 29cm	Used by 3 disabled children aged 8 – 18, near house, helped by mother Mother disposes of excreta in latrine	*Strengths:* Stool can be placed in convenient location – e.g. near house. Mother can keep an eye on child without interrupting housework. No need to carry child long distance to latrine Increased use of toilet – > reduces clothes soiling – > less laundry – > reduced carer work-load. *Drawbacks:* Unpainted wood absorbs urine – difficult to keep clean Need to dispose of waste in latrine.	Int.13 Ug_dwg06
4.	APT toilet stool, used in latrine over toilet hole	Materials: appropriate paper technol-ogy	Used by disabled woman crutch user	*Strengths:* Low cost - cheaper than wood, *Drawbacks:* Less durable than wood – lasted 2 years (Durability would depend on finish – paint, varnish, etc. and how wet it got)	Int.18
5.	Wooden toilet chair used in latrine over toilet hole	Wood, with back & sides. Hole in seat.	Demonstration model	*Strengths:* Low cost, durable *Drawbacks:* Hole quite far back in seat; small hole, risk of fouling seat	Int.22 HITS_03
6.	Wooden handles	Wood	Disabled person holds handles when using hands to crawl, to prevent soiling of hands on ground	*Strengths*: Locally available materials, low cost, durable. Easy to clean. Reduced soiling of hands & knees - reduced risk of infection. *Drawbacks:*	HITS_01
7.	Rubber knee/stump protectors	Recycled car tyres	Placed over knees/stump/s when crawling, to protect knees and/or stump.		HITS_07-09

Table 9: Approaches to provision of services/ADs

9. Approaches to provision of service/ADs					
#	**Description**	**Process**	**Who involved**	**Lessons learned**	**Ref**
Institution-based approach					
1.	Kampala School for the Physically Handicapped	Primary & vocational training for 78 children with PI – majority mobility problems, aged 7 – 18. Residential. For secondary education, children have to move to an ordinary school. Training & advice for parents at home not provided by school; this is role of CBR workers. Parents can observe school facilities when collect child, & take ideas home. Lessons from pilot accessible latrine could be relevant to family situation.	Headteacher Teachers Ministry of Health Occupational therapist	*Strengths:* Accessible facilities enable dch to use with least assistance; enable carers to carry out responsibilities effectively. Enables school to focus on main goal, ie providing education for child. *Drawbacks:* Facilities v different to home facilities; do not prepare child for coping at home. Coping strategies learnt by child at school may not be applicable at home. Advice to family on how to support child not passed on – not part of school's responsibility. Similar facilities not available at secondary school, so education limited. Risk of isolation – contrast between accessible facilities in institution and those outside/in the village means leaving the institution can be difficult.	Int.3, 4
2.	Katalemwa Cheshire Home	Hospital & rehabilitation centre for children aged 0 – 25 needing surgery, post -operative rehabilitation & PT to improve function & mobility. Children stay 1 – 12 months, then discharged usually back to community. Carer usually accompanies child. Treatment focuses on medical rehabilitation. Training in ADL left til child returns home.	Centre staff – nurses, carers.	*Strengths:* Accessible facilities enable centre's main goal of rehab to be achieved more easily. Carer taught to support child in ADL Toilet chair can be made specially for child to take home if needed. *Drawbacks:* Similar facilities unlikely to be available at home, so strategies for coping with home facilities not addressed.	Int.6

9. Approaches to provision of service/ADs					
#	**Description**	**Process**	**Who involved**	**Lessons learned**	**Ref**
3.	Nakaseke District Hospital	Treatment provided on premises, both in-patient and out-patient. No outreach/home visiting service. JL returns to hospital periodically for review. During rehabilitation in hospital after accident, JL introduced to idea of using bed-pan, and bed-bathing. W'chair and bedpan provided by hospital.	Nurses OT	*Strengths:* Equipment, methodologies available to try with support. *Drawbacks*: Detached from home setting, solutions not always appropriate to home circumstances No outreach/follow-up at home for adults.	Int.7
4.	Masaka Vocational Rehabilitation Centre	68 disabled people, male & female, aged 14 – 25 with PI. Most from Masaka District. Training in leatherwork, metal-work, carpentry, computer skills, printing & design. According to Min of GLSD, trainees return to community with tools to start own business. Monitored by District rehab officers & by SC level community workers.	USDC	*Strengths:* Accessible facilities enable centre's main goal of vocational rehab to be achieved more easily. *Drawbacks:* Similar facilities unlikely to be available at home, so strategies for coping with home facilities not addressed.	Int.19,.11
Community-based approaches					
5.	Katalemwa Chesire Home post discharge CBR/ outreach service	CBR worker visits family to find out main needs. These will depend on the family and child but usually relate to ADL, e.g. toileting, and mobility. Makes assessment and advises on possible improvements: selects what they think are the best options (depends on skill of CBR worker - carers often don't know what is possible). Decisions re adaptations made jointly between CBR worker, child and carers. CBR worker supervises work. Local materials used as much as possible. Cost of adaptations met by family: financial status taken into account when selecting. If family cannot afford, CBR worker will seek external support. Other activities of CBR workers: follow-up visits to monitor progress, counselling of parents, especially single mothers, hygiene and nutrition advice.	Government CBR workers are mainly drawn from Community Development Assistants.	*Strengths*: Multi-disciplinary approach. Consultation with disabled person and family identifies priority needs. Solutions identified suited to home environment, so more likely to be effective & sustainable. Local materials used – cheaper, culturally acceptable, replaceable. *Drawbacks*: Most personnel have no formal CBR training except short courses. The majority learn on the job. Not easy for CBR worker with minimal training to be aware of and clearly present available choices and options.	Int.6

9. Approaches to provision of service/ADs					
#	Description	Process	Who involved	Lessons learned	Ref
6.	USDC CBR programme, Masaka	Home visit by OT: After introductions, explain purpose of visit; ask how client coped before, what differences noticed. Identify priority need, according to client and carer. Establish common goals/ objectives, monitor progress. Establish kind of social support available– training may be required for carer or support network. Materials/tools used: checklist developed by OT training dept, can be adapted depending on home environment. ADL checklist depends on client's condition: checklist specifically for use with children is being developed. Guidelines for rehabilitation of different conditions at different levels, from health centre to District hospital. OT School has a detailed assessment Environmental assessment to assess whether client able to function, or use any ADs already provided in existing environment, whether ADs appropriate to client's needs; identify any structural or organisational changes needed at home. When providing equipment, choices are presented, strengths and weaknesses of each are explained. OT takes decision about design – explains why and how to be used and what to expect. Assisted by visuals – drawings/ mini examples/cardboard models. Cost-sharing – clients pay what they can, e.g. buy materials. 60% of families receive completely free. Where contribution made, families tend to take better care of equipment and use more frequently For example: USDC OT designed ADs - commode chairs, wheelchair tray attachment, bathing ring, etc. in consultation with family. USDC provided materials and constructed at OT workshop. (Except for bathing ring, where family contributed materials and PT made it). Where needed, USDC PT provides physiotherapy and crutches.	Team involved: OT, PT, orthopaedic technologist, medical social worker, mental health nurse, orthopaedic clinical officer, CORPs (community own resource persons) are link at village level, are volunteers, and include: community development workers, community health facilitators (lay person trained in CBR) health educators (from health centres) councillors for PWD, parents/carers of disabled people. Some are teachers. Many received some CBR training. At village (LC1) level there is link with Parish Development Committee, responsible for planning and development at local level. PDC in turn works with sub-county health committee, which reports to District Health Dept. For one child, wheelchair provided free of charge by EARS special needs co-ordinator.	*Strengths*: Multi-disciplinary approach. Collaboration between trained specialists & local volunteers with local knowledge taps into local networks and resources. No need for institutional stay – reduced family disruption, and segregation of disabled person. Consultation with disabled person and family (especially main carer) identifies priority needs. Solutions identified suited to home environment, so more likely to be effective & sustainable. Available options presented through drawings, 3D models. Strengths & weaknesses explained. Support provided to try out practical solutions, monitor whether or not it works and adapt where needed. *Drawbacks*: Lack of resources & trained personnel to implement.	Int.12, 13, 14 & 20

9. Approaches to provision of service/ADs					
#	**Description**	**Process**	**Who involved**	**Lessons learned**	**Ref**
7.	Nakaseke District Hospital CBR/ outreach service	OT on temporary placement at Hospital visited family & introduced ADs – jerry-can shower, trays, spoon holder. Health worker used to visit. Volunteer CBR worker continues to visit, as a friend, to check she is all right. Hospital has no budget for CBR.	Trainee OT on placement. Volunteer CBR worker	*Strengths*: Specialist skills adapted ideas to local context and to meet family's needs *Drawbacks*: Lack of follow-up. Lack of resources & trained personnel to implement consistently.	Int.8
8.	UNISE CBR training programmes	During community placement, students required to identify disabled people and assess their needs – learning, social and that of family as a whole; identify sources of support in community, e.g. what community leaders can do; where possible to train families to support disabled family member. Where poverty an issue, to come up with an IGA. CBR workers need to understand the areas of community development, water and sanitation, environmental health, to be able to advise families appropriately about these issues.	Need to liaise with local CBR worker, community development and primary health care workers, as appropriate.	*Strengths*: Multi-sectoral approach advocated. Collaboration between trained specialists & local personnel with local knowledge taps into local networks and resources as appropriate. *Drawbacks*: Lack of resources & trained personnel to implement consistently.	Int.10
9.	Ministry of Gender, Labour and Social Development	Community-based rehabilitation: PWD and their families mobilised to contribute resources to the rehabilitation of disabled family member. Implemented in only 16 of 56 Districts, due to lack of resources & trained personnel. Special needs education co-ordination officers (SNECOs) have role of identifying, assessing, sensitising and referring disabled children for relevant service.	Collaboration with NUDIPU, UNAD, UNAB, COMBRA, USDC & ADD. Links with Ministries of Health, Education & Finance. Work closely with community development assistants (CDAs) at SC level.	*Strengths*: Multi-sectoral approach advocated. *Drawbacks*: Lack of resources & trained personnel to implement.	Int.11

9. Approaches to provision of service/ADs					
#	**Description**	**Process**	**Who involved**	**Lessons learned**	**Ref**
10	Mubende Distrcit Community Development Dept: CBR service & UNAB	District mobility officer provides technical advice and support to blind children and adults in home or school environment, e.g. on mobility and orientation. UNAB provides white canes free of charge.		*Strengths*: M&O is a no cost solution, relies on skills development. Consultation with disabled person and family identifies priority needs. Solutions suited to home environment, so more likely to be effective & sustainable. *Drawbacks*: Lack of resources & trained personnel to implement	Int.23 & 24
11	UNAB mobility and orientation training	Provides white canes & mobility & orientation training. Role model of UNAB mobility instructor helped many of blinded veterans change attitude. See an independent blind person, e.g. looking after chickens, and are encouraged to think more positively.		*Strengths*: No cost solution, relies on skills development. *Drawbacks*: Lack of resources & trained personnel to implement	Int.24 & 25
12	HITS community programme in Pallisa District	Community awareness on hygiene and sanitation Design of low-cost locally made ADs and facilities for disabled people to be self-reliant, e.g. accessible latrine, latrine seat, wheelchair trailer, toothbrush stand for people without use of hands, bathing stool. Models of ADs developed as examples - when disabled people attend events at HITS compound, they can observe and try out ideas at home. No information available re effectiveness of 'model' approach - what worked, what not. Sensitisation may be needed to convey benefits of ADs, e.g. workshops where disabled people and families use problem solving approach to improving access.	Suggestions for project outputs: Case studies could have questions after them, for use in training/ discussions.	*Strengths*: Disabled person identifies solution to own needs, onus on him/her to implement /adapt at home. Low cost approach – minimal staff costs. Only one of each AD made. No wastage – AD provided but then not used. *Drawbacks*: Level of uptake not known.	Int.22

9. Approaches to provision of service/ADs					
#	Description	Process	Who involved	Lessons learned	Ref
13	Home support	Mother always encouraged Rose to do as much as possible for herself and taught her ways to manage ADL as independently as possible.. Son of blind woman constructed rainwater tank with lockable tap, and other facilities, for mother to carry out daily activities independently.		*Strengths*: Disabled people and families find own solutions, based on own needs, or adapting ideas from elsewhere. *Drawbacks*: Lack information & support, may spend effort & resources re-inventing the wheel.	Int.15, 24

Table 10: Accessible facilities – process of implementation

Accessible facilities – process of implementation				
#	Description	Responsibilities/ Process	Lessons learned	Ref
1.	APCPD Integrated Academy	School for disabled & non-disabled children aged 6 – 18. Most mobility problems, some poor co-ordination. The visit was during school holidays so no children observed. Need for adapted latrine recognised when disabled pupil having difficulty using existing latrine. Headteacher, OT involved	*Strengths*: Adapted latrine enables dch to use w/o assistance. Enables school to focus on main goal, ie providing education for child. Initiative came from school. Technical advice provided by OT. Detailed design spec provided.	Int.2

2.	New Bubajjwe Primary School accessible school latrine	Primary school that includes disabled pupils. School contributed approx 1/6th of total construction cost. Extra cost of accessible features negligible in relation to overall cost, because planned from outset. Project engineer closely followed design and measurements provided by COMBRA, because he lacked experience. In future, he would have more confidence to try different ideas and adaptations. Implementation of sanitation project created a demand from primary schools for latrines. Within the last year of the project, latrines were installed in at least 12 primary schools. Introduction of UPE - disabled children have a right to attend school. New Bubajjwe PS had to reject disabled pupils in past because of no suitable facilities. Now had a disabled pupil at the school, and insisted from outset, that accessible facilities be included. Disabled children not a specific focus of SC's project, but SC had done some activities with the disabled within the community in collaboration with COMBRA. Engineer discussed with contractor how to incorporate into existing design. Explained construction details (they had worked together previously, so collaboration not a problem).	*Strengths:* Adapted latrine enables disabled child to use w/o difficulty. Collaboration between GO/NGO/INGO, & sectors – water engineering, PHC, disability. education. Main initiative taken by Primary School – insisted on accessible latrine. Supported by National policy on UPE and right of disabled child to education. Save the Children/UK (SC) aimed to improve PHC for all children – recognized that it included disabled children. Technical input provided by specialist NGO: COMBRA (see Table 11, No.22) had a CBR project with disabled children in Bwaise. A COMBRA staff member was on School Board & very instrumental: design specs & drawings provided to contractor; 3D models to communicate concepts and principles. INGO implementer willing to try something new but lacked experience and confidence. Ability to communicate information needed by another sector in a format it understands. Photos of latrine used in RWSS handbook (see Table 7, No.14) – learning communicated more widely. *Constraints:* Apparent lack of documentation on impact.	Int.27

Table 11: Policy Issues

11. Policy issues				
#	**Description**	**Responsibilities**	**Lessons learned**	**Ref**
3.	Directorate of Water Development (DWD), Ministry of Water, Lands & Environment	responsible for water supply in rural areas; access for disabled people so far a 'blind spot' – not done anything. Collaboration with DANIDA	*Strengths*: Recognise that serving the needs of disabled people is an issue previously neglected. *Constraints*: DWD responds to community applications – demand driven, demand not been raised by DPOs. Min of Gender needs to identify causes and address barriers.	prep report
4.	Environmental Health Section, Ministry of Health	Lead institution for sanitation promotion in Uganda Before 2000, disabled people were forgotten in the initiatives and publications of this section. Recently, more attention has been paid and images and issues related to disability are starting to be addressed. e.g. lack of appropriate sanitation facilities could be associated with non-attendance of school by disabled children.	*Strengths*: Acknowledge that disabled people part of their responsibility, starting to include information on access in publications. A major player, with influence in watsan sector has started to address access issues. *Constraints*: Lack of accurate data. Apparent lack of strategy to promote implementation of accessibility guidelines, including sharing of information	Int.21
5.	Mubende District Dept for Community Development	Supports Community Development Assistants who carry out home visits to disabled people. Water tank provided by District Water Dept to Unit for blind people, stores water during rainy season, accessed by ordinary tap. DCD tried to sensitise water dept to accessibility issues, e.g. in Kasanda there is a ramp leading to a shallow well. In Katenga SC, water committee includes 1 disabled person; 1 Primary School has accessible latrine. Tenders for school latrines invited by Head according to TOR. Budget provided, e.g. by WES, District Council make decisions - take advice from technical persons. Designs depend on context/water source.	*Strengths*: Guidelines on accessible latrines now available *Constraints*: Policy not in place from National to District level. policy and guidelines need to be clearly stipulated. TORs for school latrines do not include accessible stance. Lack of ADs in Mubende, including wheelchairs, crutches Accessibility issues need to be included in monitoring tools. Not all agree with plans. Construction of new latrines in schools & health centres often does not include accessible facilities. No guidelines yet on accessible water sources.	Int.23

11. Policy issues				
#	**Description**	**Responsibilities**	**Lessons learned**	**Ref**
6.	School Sanitation Latrine Options: Design and construction guidelines	Guidelines on including accessible facilities, line drawings of accessible latrines for disabled pupils, integrated as appropriate throughout the text. Design specifications for accessible latrines provided.	*Strengths*: Disabled access included in guidelines for wat-san sector. Collaboration between DWD & MoH, Environmental Health Section, MoGL&SD. *Constraints*: Design specs incomplete, some dimensions missing. Unclear how widely guidelines have been made available.	Semakula et al, (2002)
7.	Rural water supply & sanitation handbook for extension workers	Includes design specs of 'institutional sanitation for PWD, & photos of accessible latrine under construction (probably taken at New Bubajjwe Primary School, see Table 10, No.12). Also, discussion of promoting participation of disabled people during community consultation, practical suggestions on how to do this.		Carl Bro Int'l Vol 1 Section 7.6.
8.	MoH guidelines on Environment & Sanitation	Illustrations include images of disabled people at community consultation meetings. Disabled people not mentioned in text.		Uganda MoH, (2001)
9.	National Union of Disabled Persons of Uganda (NUDIPU)	Role: advocacy & lobbying, to promote equality of opportunity Provide some mobility ADs.	*Strengths*: Branches in all 56 Districts. Decision-making delegated to SCs, NUDIPU representatives involved in consultations at local level. *Need* to target policies, without which services can't develop	prep report
10.	PWD councillor	PWD are represented at every LC level, by a male and female councillor, whose role is. PWD should be included in all areas of Main roles - consultation on all areas of rural community development; advocacy for suitable and accessible facilities for PWD; education of community – parents and carers, health workers, etc. on disability issues. e.g. in education – construction of accessible class rooms. In a water project, role would be to advocate for features suitable for PWD, e.g. low level taps, wider doors, etc. Examples of different accessible designs, choices and options would be helpful especially when communicating with engineers.	*Strengths*: Disabled people are strongest advocates for own needs and interests; are represented at all LC decision-making levels; have role in raising interests of disabled people, including accessible facilities & services that meet their needs. *Constraints*: They lack information about available options in order to be able to propose practical solutions to disabled people's access.	Int.18

11. Policy issues				
#	**Description**	**Responsibilities**	**Lessons learned**	**Ref**
11.	ADD	District Community Development Dept responsible for protected springs.	*Strengths*: 3 years ago DWD encouraging social mobilisation to promote community management & decision-making. *Constraints*: 'Blind spot' on part of disabled people not to have got involved in watsan issues – big challenge.	prep report
12.	COMBRA (Community based Rehabilitation Alliance)	NGO implementing CBR & providing technical support & ADs; training for CBR workers & CDAs.	*Strengths*:	prep report
13.	Poverty Eradication Action Plan (PEAP) review	USDC involved in PEAP review.	*Strengths*: mechanism in place for PEAP to address disability issues, e.g. in UPE, PHC, & watsan.	Prep report
14.	Poverty Monitoring & Analysis Unit (Min of Finance)	Scrutinises budgets re pro-poor implementation – value for money study, including aspects of efficiency, value defined in terms of wider outcomes, e.g. access, equity	*Strengths*: mechanism in place for disability issues to be addressed as equity issue in PMAU.	prep report

Appendix VII: Visit notes