



TECHNOLOGY AND DIGITAL ACCESSIBILITY TOOLKIT

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Welcome to the Fingo Powerbank Accessibility Toolkit!

THIS TOOLKIT IS TO HELP development organizations utilizing technology in their program work.

It consists of information, guidance, recommendations when designing and implementing inclusive projects. It includes information for Finnish NGOs, but mostly applies to any development actor.

In the following pages you will find tips, guidance and further resources to help you on the journey of disability inclusion.

Abilis Foundation and Abilis Consulting have partnered with Fingo to assist organisations who are developing solutions and products for users in the global south. If you are new to the topic of disability, don't worry! The toolkit also gives some background on disability, accessibility, and inclusion. We hope users will look at the best practice contained in this toolkit to guide their journey of product design through the challenges lived by persons with disabilities every day all around the world.

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In this section part A provides a quick introduction to 10 simple examples how to improve the level of access in your work.

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In this section you will find thematic lists of resources that you can utilize from guidelines to available tools.

SECTION 1

Introduction to Disability and Inclusion in development

What is disability?

THE CONCEPT OF DISABILITY has evolved significantly over the last decade. Progressively, the approach towards persons with disabilities has shifted from the so-called ‘medical and charity’ approach to a human rights-based approach to disability.

This reframes the question so that persons with disabilities are no longer seen as patients or service receivers who need to be pitied and “fixed” to fit in with society. Rather, persons with disabilities are recognized as full and equal members of their communities who can take an active role in public life, provided they receive the necessary support and assistance.

Persons with disabilities are not a homogenous group. Persons with different types of disabilities have different needs and will require different forms of assistance and measures to ensure their access and participation.

Ensuring that persons with disabilities play an active role in the political and public life of their societies contributes to strengthening both respect for their rights and disability-mainstreaming in the legal and policy framework to better reflect the needs of all community members.

There are more disabled individuals than ever with a vastly growing population in the Global South.

While recent years have seen a shift in attitudes towards disability, the representation of persons with disabilities in political and public life remains disproportionately low across globally.

This is due to legal, social, economic, physical and other barriers which continue to prevent many citizens from exercising their democratic rights.

These multiple barriers result in a situation where persons with disabilities are often not consulted and their views are rarely taken into consideration. Women and youth with disabilities or persons with disabilities belonging to ethnic or other marginalized groups are also excluded and so reaching out to them is a key development priority.



Common barriers to participation of disabled people in the Global South:

- Outdated paternalistic approaches, administrative barriers and prevailing social stereotypes
- Lack of access (physical, linguistic, infrastructural and to information)
- Legal barriers (laws not implemented, costs and restrictions on legal capacity)
- Institutional segregation (e.g. in schools, work places, public institutions)
- Lack of quality inclusive education
- Limited support and funds for participation
- Poverty
- Lack of comparable data disaggregated by disability, and lack of monitoring mechanisms at the national level

What does access really mean?

Accessibility is a precondition for the participation of persons with disabilities in all areas of public life, including in business, education, institutions, public meetings and other forms of civic engagement.

An “accessible environment” means that information, infrastructure, transport, public meetings, institutions and materials are available to persons with various types of disabilities: intellectual, sensory, psychosocial as well as physical.

This includes developing materials in easy-to-read formats, Braille, providing subtitles, audio descriptions and ensuring that Sign Language interpretation is available.

In addition, “reasonable accommodation” should be provided for persons with all kinds of disabilities, which goes beyond adjustments for persons with physical impairments. The definition of reasonable accommodation is vital in the ongoing progress that assistive technology can bring to developing standards in the Global South.

It means providing the necessary individual support or adjustment which would allow a person with disability to play an active role in society, for example, in the labour market or in political life. This would include, for example, providing a personal assistant to allow a person with a disability to work or study.

Why is inclusion so important in development cooperation?

Disability has been approached in development mainly in three ways:

Persons with disabilities are by far the world’s largest minority. More than a billion people are estimated to live with some form of impairment, or about 15 percent of the world’s population. The World Bank estimates that 20 percent of the world’s poorest people have some kind of disability, and tend to be regarded in their own communities as the most disadvantaged.

The number of people with disabilities is growing at a high rate throughout the Global South and inclusion is the common goal of donors, local governments and the international community.

Some of main reasons are growing global populations – older people have a higher risk of impairments; more advanced technology and developed living standards to save lives of babies and mothers who would have otherwise died from birth complications but now live with a disability.

Increased incidence of war and conflicts, natural disasters, and extreme poverty; traffic accidents and unexploded ordnance; and increasing chronic health conditions associated with disability globally.

In addition to medical or health conditions, people with disabilities are often amongst the most socially and economically disadvantaged people. Their human rights are denied in daily life in all Eastern African countries although development is significant but will yield results slowly due to disability coming to the forefront of development within the last decade.

Why is disability important to any development organization?

Disability has most often been misunderstood as a medical or health issue. While some people with disabilities require ongoing medical intervention, and all people – with and without disabilities – require basic health services, the fundamental problem people with disabilities face across the world is the violation of human rights and lack of or inadequate access to systems, services, facilities and information.

84-85 percent of people with disabilities live below the poverty line in developing countries. 62 percent of people with disabilities in developing countries have access to basic services and habilitation or rehabilitation.

Roughly 97-98 percent of children with disabilities in developing countries don't attend school, and one out of three children out of school is a child with disabilities.

Goal is now to materialize the commitments every government has made and Finnish NGO is a partner as inclusive education is a shared development priority where technology can have a profound meaning on success on this development goal.

Without inclusion your project can not succeed reaching the wanted development goals. However it is better to start inclusion by practical step-by-step - approach. Work is always in progress.



SECTION 2 A

Top 10 Tips for Accessibility in Digital Development

1 **As an organisation, make a commitment to disability accessibility and inclusion**

Commit to accessibility in your organisation. Use the [World Bank's Disability Inclusion Commitments](#) as inspiration and the WBU/ [CBM Accessibility = GO! Guide](#) as a practical manual to implement full accessibility in your organisation and work.

2 **Go social! Make the most of social media for accessible engagement**

Social media sites have numerous accessibility features, offering simple, consistent access and engagement. More details: [Facebook Accessibility](#) and the [Social Media Accessibility Toolkit](#).

3 **Get the language right, using outdated disability terminology is offensive and disempowering**

Language is an emotive issue and disability terminology is constantly evolving. These resources will assist you: Stanford's [Disability Language Guide](#), [Writing about Disability](#), using [Inclusive Language](#) and US AID's [Language and Disability](#) and [Disability Comms](#).

4 **Follow the do's and don'ts for designing for specific disability audiences**

Unsure of how to design for different disability audiences? Use the [Designing for Accessibility Guide](#) which provides simple do's and don'ts for designing digital services covering screen readers, autistic spectrum, low vision, dyslexia, anxiety and more!

5 **Make your videos accessible**

Add captions and descriptive sound tracks in your videos. Captions can be created manually or be auto-generated. [YouTube](#) can produce automatic captions in several languages. See also: [CBM Toolkit](#), [University of Washington Accessibility](#), and [this Checklist](#).

6

Design for mobile

Smartphone use and internet access is increasing rapidly across the Global South. For a new generation of internet users, it is 'mobile first'. [Apple's iOS](#) and [Google's Android](#) devices have excellent accessibility features and [3rd party apps](#). [iOS Best Practice](#).

7

Avoid creating bias in your AI (Artificial Intelligence) solution

According to Microsoft, bias in AI will happen unless inclusion is built in from the start. Use the [In Pursuit of Inclusive AI](#) guide to ensure inclusive design. The identified five biases in AI are: **Dataset**; **Association**; **Automation**; **Interaction**; and **Confirmation**.

8

Make your website accessible

For an accessible website you'll need to consider: fonts, colour contrasts, alt-text, language, navigation, and screen reader compatibility. All of this is combined in the [Web Accessibility Guidelines](#). See the [Resources Library](#) for further sources.

9

Design and test with persons with disabilities, use inclusive design principles

Include persons with disabilities in your process of design, development, testing and deployment. Here are a selection of excellent resources: [Inclusive Design Toolkit](#), [Microsoft Inclusive Design](#) and [Design for All Foundation](#).

10

Make your physical and online meetings accessible

Did you know most online meetings are not accessible for everyone? Fortunately there are some great resources to assist you: [EDF's Guide for Meetings](#) and [Checklist](#), W3A's [Accessible Presentations](#), and this [Advice for Accessible Presentations and Events](#).

SECTION 2 B

Why is inclusion in Digital Development vital to you?

WHY IS IT SMART to be inclusive with technological approach?

The extensive exclusion of people with disabilities from society is indefensible from a human rights and development perspective. However there is a common perception that inclusive interventions are not financially feasible in the developing world.

Technical innovations can open a new life of opportunity to persons with disability, particularly for people who work from home.

Usually, technical innovations are supposed to reduce barriers. Therefore, the needs of persons with any kind of limitation has to be considered in order to avoid the creation of new barriers.

Aside from your human rights based approach, there is also evidence that promoting inclusion of people with disabilities is beneficial from an economic standpoint.

Potential economic gains that may be realised through inclusion are constantly studied.

Since poverty is an overarching indicator of exclusion it is important to understand the scope of economic marginalization of people with disabilities. As technical innovation becomes the norm it is vital to engage inclusion early on in the progress.

The pathways through which costs are created towards the society from exclusion of people with disabilities in these countries are complex and rarely understood.

It is vital that everyone agrees inclusive development is a key to their success to reach development and without innovations that allow disabled people equal standing to participate in the digital revolution it is not possible to reach economic growth, sustainable development or SDG's.

SECTION 3

Digital Solutions Portfolio

This section describes the leading solutions enabling persons with disabilities to access digital services.

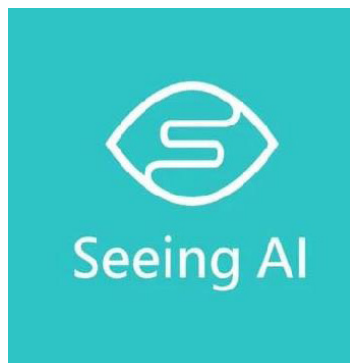


BlindSquare

<https://www.blindsquare.com/>

BlindSquare is the one of the most popular apps providing directional, navigational and situational descriptions for the blind, deafblind and partially sighted. BlindSquare's self-voicing app delivers detailed points of interest and intersections for safe, reliable travel both outside and inside. Useful features include telling users what shops and businesses they are passing as they go down the street, if they are at a bus stop it announces the next bus to arrive. Available on iPhone in 25 languages.

BlindSquare gathers information about your surroundings on Foursquare and OpenStreetMap. Algorithms determine what information is most useful to the user such as popular cafes, post offices or libraries. BlindSquare will track the destination and periodically announce the distance and direction headed. Mark your position if you'd like help finding your way back later.



Seeing AI

<https://www.microsoft.com/en-us/ai/seeing-ai>

Developed by Microsoft to harness the power of Artificial Intelligence, Seeing AI is a free app that narrates the world around you. Designed for the blind and low vision community, this app uses AI to identify what the phone's camera is looking at. Functions are incorporated into 'channels' which can describe nearby people, text and objects. Seeing AI can recognise friends, estimate their age, gender and emotions, describe the scene around you, reads handwritten text, documents, identifies values of banknotes, describes colour and levels of light, can describe photos on your phone and images in other apps, scans barcodes to identify products. Currently only available on the Apple App Store.



YouTube

<https://www.youtube.com/>

This well-known video sharing portal has excellent accessibility functionality. Subtitles and Closed Captions can be manually or automatically added to videos to enable your video content to be accessible to persons who are deaf or have reduced hearing. YouTube can be used to livestream your meetings, training courses and webinars, enabling participation of persons who are unable to physically access your meetings or venue. Remote learning and distance education are being facilitated on YouTube and it is also used as a tool for persons with disabilities to share their experience through videos and vlogs. The technology works across billions of mobile devices and computers around the world.



NVDA Screen Reader

<https://www.nvaccess.org/about-nvda/>

NonVisual Desktop Access (NVDA) is a free screen reader for the Windows operating system (Version 7 onwards). NVDA allows blind and vision impaired persons to access and interact with the Windows operating system and many third party applications.

Features include:

- Support for popular applications including web browsers such as Mozilla Firefox and Google Chrome, email clients, internet chat software, music players, and office programs such as Microsoft Word and Excel
- Built-in speech synthesizer supporting over 50 languages
- Reporting of textual formatting where available such as font name and size, style and spelling errors
- Automatic announcement of text under the mouse and optional audible indication of the mouse position
- Support for many refreshable braille displays, including input of Braille via braille displays that have a braille keyboard
- Ability to run entirely from a USB flash drive or other portable media without the need for installation



Google Accessibility Scanner

<https://play.google.com/store/apps/details?id=com.google.android.apps.accessibility.auditor>

A free tool for app developers and anyone implementing an app-based solution. Accessibility Scanner suggests accessibility improvements for Android apps without requiring technical skills. Just open the app that you want to scan, then tap the Accessibility Scanner button to find items in the app that might benefit from accessibility improvements. You can use this app to suggest changes to developers or to make changes yourself.

Accessibility Scanner suggests improvements such as enlarging small touch targets, increasing contrast and providing content descriptions so that your app can be more easily used by individuals with accessibility needs. Designing for accessibility can allow you to reach a larger audience and provide a more inclusive experience.



KIBO XS and KIBO App

<https://trestlelabs.com/#kiboxs>

KIBO XS is a USB powered text scanner that can read printed and handwritten text in 11 Indian languages and multiple international languages. Ability to translate text across 100+ languages download editable Unicode format files - DOC, DOCX, TXT. Compatible with mobile, web and laptops. Portable and light, weighs only 400g.



Free Basics / Internet.org (by Facebook)

<https://www.facebook.com/FreeBasics-101593835095366/>

Free Basics by Facebook provides free access to specific web services on mobile phones in markets where internet access may be less affordable. The websites are available for free without data charges, and include content on things like news, employment, health, education and local information. Developers, NGOs, and governments have joined the Free Basics platform to offer information and services without data charges.

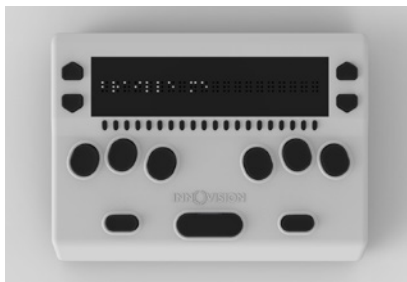


WhatsApp Messenger and WhatsApp Web

<https://www.whatsapp.com/>

The hugely popular free messaging and communication app for smartphones is highly accessible and popular for users with various types of disability. Its functions include messaging, group chats, sharing photos, voice calls, video calls, voice messages and group voice/video calls. WhatsApp also works well in low-internet settings and is popular all around the world.

It works with mobile phone screen readers Google Accessibility Suite (Android) and VoiceOver (iOS). Can be linked to a computer for usages through a web browser through WhatsApp Web (<https://web.whatsapp.com/>).



Braille Me

<https://innovisiontech.co/brailleme/>

Described as the world's most affordable refreshable Braille display. It can be used for browsing the internet, reading e-books, connects to mobile phones and computers. Portable design with a long lasting battery.

BrailleMe has a fast, smooth 20 cell 6-dot Braille display designed to give paper like crispness. It has a Braille style keypad and cursor buttons for dynamic typing. It is ideal for students for easy access to books and note-taking. It is also well suited for working professionals with compatibility with computers & screen readers for a combination of Braille and audio.



NaviLens

<https://www.navilens.com/>

NaviLens is an app which uses specialised high-density artificial tags developed for visually impaired users to navigate and access signage in indoor and outdoor spaces. The NaviLens tags are put on directional signage and can be read from a long distance by the NaviLens app which then provides information and directional details from the sign to the user.



BleeTV app is India's only app showcasing variety of information and learning content in Indian Sign Language. BleeTV Library a digital platform for deaf students to access learning and information-based content in Indian Sign Language at their schools.

With content specially made and curated for children, BleeTV Library is a digital platform to showcase accessible content, monitor students' activities and support schools. BleeKit is a remote well-being and learning programme for deaf and hard of hearing children.

BleeTV App, BleeTV Library, BleeKit

<https://www.bleetech.in/>



Be My Eyes

<https://www.bemyeyes.com/>

Be My Eyes is innovative solution where sighted volunteers lend their eyes to solve tasks big and small to help blind and low-vision people lead more independent lives. It consists of a free app that connects blind and low-vision people with sighted volunteers and representatives for visual assistance through a live video call. When a user requires visual assistance, they start a video call in the app which connects to a sighted volunteer who also has the app installed on their phone. The sighted volunteer can then describe what they are seeing in the video feed and assist the user.

Be My Eyes was the 2018 Winner of Google Play Awards - Best Accessibility Experience. It is available in over 180 languages.

SECTION 4

Key tips to include stakeholders for collaboration

Integrate technological access to your long-term strategy in the country and aim for structural approach

Promoting accessibility does not work out by initiating single initiatives or short-term campaigns. Making profound change is structural and takes time so a step-by-step approach supports your coherent work.

Assign inclusion responsibility into a job description

Deciding upon a position on management level helps to include the matter of accessibility in the decision making process from the very early beginning.

If accessibility is included in any kind of the decision process, it will avoid or reduce the need for a lengthy process as there is one focal person that handles issues related to access/inclusion.

Locate disabled people in collaboration with a DPO (Disabled People's Organization)

In order to break down barriers affecting persons with disability it is important to locate them.

They will be helpful to define criteria that assist in identifying potential barriers and in determining the status quo in order to formulate concrete measures based on it.

Testing innovations with disabled users

Sometimes testing an early version or Minimum Viable Product of your product or innovation with persons with disabilities will give you rapid insights into how people really use it which you can learn from and develop further to improve accessibility.

Among DPO collaborations there are always local deaf communities to help with sign language of that country.

Consideration of low-internet settings

Internet connections in some places may not be good enough to receive large emails and the cost of the internet may be high.

Downsize attachments by compressing them using compressed (zipped) folders feature.



Convince the beneficiaries to consider inclusion as a business case

The support and acceptance of everyone is a key to creating permanent change especially as development can not be separated from humanitarian or private sector work as the work proceeds.

Nexus approach means we must tackle access in a holistic manner. Accessibility targeting beneficiaries will eventually lead to business possibilities and it helps your work to be ahead of the curve.

The understanding of accessibility as part of a business case and not only as a charity approach encourages top managers to tap the potential of persons with disability as employees, experts and customers.

Initiate awareness-raising trainings for staff and stakeholders using disabled experts

Events where disabled people share best practices and existing experiences in a targeted topic reduces all beneficiaries stereotypes against persons with disability and illustrates the potential that comes along with persons with disability.

The conviction is important but the understanding of the workforce and all stakeholders is at least equally important, especially of those persons who might have limited experiences being exposed to persons with disability.

To some stakeholders the only disabled they have met might be under social stigma or beggar position so it is important to approach this with real life experts.

Collaborate with selected DPO and include their network of expertise in the work

Nobody is able to provide all the expertise and manpower needed to approach inclusion and accessibility in a holistic manner. Therefore, external disabled experts might be an option to get the support required.

Involve persons with disability (PWD's) is a fundamental issue that serves the "Nothing about us without us" approach adopted in Finnish Development Policy as well as SDG's.

Based on their experiences and knowledge they can assist both in identifying barriers and solving them in the environment you face.

Use experiences of other NGO's in a structured and sustainable exchange

Exchanging good measures and best practices is a great opportunity to benefit from existing experiences in a multi-professional way.

It is good to encourage others based on your experiences for discussions providing a frame of some issues you might have solved so good practices spread. Emphasis needs to be put on the involvement of persons with disability so this should be a collaborative effort with other DPO's you might already work with.

Ensure business model is followed in accessibility expertise when collaborating with private sector

Using qualified DPO recommended experts serving as the resource is a start and it is important you ask for a person in direct responsibility of coordinating private sector work.

This kind of service helps you to overcome a fragmented field of disability representing a community with limited data collection. But DPO's have limited business capacity and understanding needs to yield revenues.

Additionally, experts in accessibility or rehabilitation must fulfil the needs and speak the language of the private sector understanding profitability which can then lead to breaking down barriers and creating new jobs for persons with disability.

Promote systematic "design for all" cooperation among private sector to encourage proper approach

Sharing best practices and talking about good experiences in a multi-professional setting can raise awareness in terms of accessibility and inclusion. Getting showcased and demonstrated how competitors tackle issues and challenges in this context might be inspiring for other companies as well.

Small but helpful?

By definition please insert alternative text for graphics when producing material with pictures.

SECTION 5

Resources Library

Top Accessibility Resources for All Organisations

CBM Digital Accessibility Toolkit

https://www.cbm.org/fileadmin/user_upload/Publications/CBM-Digital-Accessibility-Toolkit.pdf

The CBM toolkit is a selection of tools and recommendations on how to make your digital and physical content accessible. The toolkit covers websites, videos, documents, presentations, business cards and meetings. Including guidance on fonts, document structure, colour, use of pictures and Alt-text. Links to specialist resources and further information are provided in each section.

Making your service accessible: an introduction (UK Government – Service Manual)

<https://www.gov.uk/service-manual/helping-people-to-use-your-service/making-your-service-accessible-an-introduction>

UK Government Accessibility Blog

<https://accessibility.blog.gov.uk/>

Dos and don'ts on designing for accessibility (UK GOV)

<https://accessibility.blog.gov.uk/2016/09/02/dos-and-donts-on-designing-for-accessibility/>

The dos and don'ts of designing for accessibility are general guidelines, best design practices for making services accessible in government. Currently, there are six different posters in the series that cater to users from these areas: low vision, deaf and hard of hearing, dyslexia, motor disabilities, users on the autistic spectrum and users of screen readers.

Social Media Accessibility Toolkit

<https://exploreaccess.org/social-media/>

Zero Project Innovative Practices

<https://zeroproject.org/innovative-practices/>

Zero Project's Innovative Practices are projects, programmes, products, services, social enterprises and business strategies which can be transferred to other countries, regions or contexts. Solutions are said to have a proven and measurable impact and speed up the process of implementing the UNCRPD.

Microsoft Design Toolkit

<https://www.microsoft.com/design/inclusive/>

Inclusive Toolkit – Manual (Microsoft)

https://download.microsoft.com/download/b/0/d/b0d4bf87-09ce-4417-8f28-d60703d672ed/inclusive_toolkit_manual_final.pdf

The Inclusive Design manual is for those who want to make great products for the greatest number of people, the guidelines are the result of hundreds of hours of research and conversations.

Inclusive Toolkit - Inclusive Activity Cards (Microsoft)

https://download.microsoft.com/download/b/0/d/b0d4bf87-09ce-4417-8f28-d60703d672ed/inclusive_toolkit_activities.pdf

Excellent resource of activity cards to undertaking an inclusive approach to design

Inclusive Design – Inclusive AI (Microsoft)

<https://www.microsoft.com/en-us/ai/ai-for-accessibility>

Did you know AI (Artificial Intelligence) can entrench biases against persons with disability? Microsoft has some tips for how to spot the five biases and how to 'stress test' your algorithms to avoid bias. The second half of the guide provides five insights for shaping the process of Inclusive AI. This is an important guide for understanding the pitfalls and best practices for organisations using AI in their digital solutions.

CBM Disability Inclusive Development Toolkit

https://www.cbm.org/fileadmin/user_upload/Publications/CBM-DID-TOOLKIT-accessible.pdf

This comprehensive 175 page toolkit provides practical ideas to support any organisation in engaged in a process of disability inclusion development. CBM developed the toolkit primarily as a resource for their staff and partners but it has become a go-to resource on disability inclusion for development organisations and practitioners. Topics covered include: an introduction to core disability concepts, disability models, disability language, inclusive management, managing change, human rights and disability, inclusive programming, learning and facilitation.

CBM Inclusion Made Easy: A quick program guide to disability in development

https://www.cbm.org/fileadmin/user_upload/Publications/cbm_inclusion_made_easy_a_quick_guide_to_disability_in_development.pdf

Includes a selection of thematically focused mini-guides for disability inclusion which is not in the updated 2017 version of the toolkit. The mini-guides include background research, advice and guidance, case-studies, checklists, useful resources on disability inclusion covering the themes of:

Advocacy programmes; Child rights; Disaster management; Education; Environment; Health; HIV/AIDS; Livelihoods; WASH; and Women.

Mobile Technology and Inclusion of Persons with Disabilities (K4D)

<https://opendocs.ids.ac.uk/opendocs/bitstream/handle/20.500.12413/13834/Mobile%20tech%20and%20inclusion%20of%20persons%20with%20disability.pdf>

Assistive technologies in developing countries – Literature Review 2018 K4D)

https://assets.publishing.service.gov.uk/media/5af976ab40f0b622d4e9810f/Assistive_technologies_in_developing-countries.pdf

Digital Accessibility

List of Accessibility Resources (ADA 25 Advancing Leadership)

<https://www.ada25chicago.org/resources/categories/accessibility/>

Facebook Accessibility Page

<https://www.facebook.com/accessibility/>

5 Ways to Integrate Accessible Design into Fast-paced Projects Facebook Blogpost

<https://medium.com/facebook-design/5-ways-to-integrate-accessible-design-into-fast-paced-projects-26eca345d23a>

IBM Accessibility Research

<https://www.ibm.com/able/tools-and-guidance.html>

This Toolkit is designed to inspire and guide to imagine and build delightful and inclusive experiences.

Organizational Guide to ICT4D: Leveraging Technology for International Development

https://solutionscenter.nethope.org/assets/collaterals/Oct23_NetHope_GuideLayout.pdf

Mobile Phone Accessibility

Free Basics (Internet.org)

<https://www.facebook.com/FreeBasics-101593835095366/>

Free Basics by Facebook provides free access to specific webservices through mobile phones in markets where internet access may be less affordable. Developers, NGOs, and governments can join the platform to offer their own services and information without data charges.

Details of Google Accessibility Products

<https://www.google.com/accessibility/products-features/>

Android Accessibility Suite

<https://play.google.com/store/apps/details?id=com.google.android.marvin.talkback>

Android Accessibility Suite is a collection of accessibility apps and including Talkback screen reader, Switch Access for interesting using switches or a keyboard, Accessibility Menu and Select to Speak.



Google Accessibility Scanner

<https://play.google.com/store/apps/details?id=com.google.android.apps.accessibility.auditor>

A free tool for checking the accessibility of Android Apps without any technical skills. Accessibility Scanner suggests improvements such as enlarging small touch targets, increasing contrast and providing content descriptions so apps can be more easily used by individuals.

Accessibility on iOS – Developers

<https://developer.apple.com/accessibility/ios/>

Description of built in accessibility features in iOS Including VoiceOver screen reader for blind and low vision users, Switch Control, playback of closed captioned or audio described video, Guided Access, Text to Speech, and more.

iOS Best Practices

<https://developer.apple.com/design/human-interface-guidelines/accessibility/overview/best-practices/>

Guidelines and Best Practice for developing accessible apps.

Apps Designed for Accessibility on the App Store

<https://apps.apple.com/story/id1266441335>

A curated list of accessible apps on the App Store.

Assistive Apps

BlindSquare (for Apple/iPhone)

<https://www.blindsquare.com/>

The highly recommended BlindSquare app provides directional, navigational and situational descriptions for person who are blind, deafblind and partially sighted. Available in 25 languages.

NaviLens

<https://www.navilens.com/>

NaviLens is an app which uses specialised high-density artificial tags developed for visually impaired users to navigate and access signage in indoor and outdoor spaces.

Be My Eyes

<https://www.bemyeyes.com/>

Be My Eyes is a free app that connects blind and low-vision people with sighted volunteers and company representatives for visual assistance through a live video call.

Wayfindr

<https://www.wayfindr.net/>

The world's first internationally approved standard for inclusive and accessible audio navigation.

Seeing AI (for Apple/iPhone)

<https://www.microsoft.com/en-us/ai/seeing-ai>

Developed by Microsoft to harness the power of Artificial Intelligence, Seeing AI is a free app that narrates the world around you. Designed for blind and low vision users, this app identifies what the phone's camera is looking at. Including, people, pictures, documents, colours and products.

KIBO App

<https://play.google.com/store/apps/details?id=com.trestle.labs.kibo>

Developed for the Indian market, Kibo helps read printed, handwritten and digital text across multiple Indian and international languages. It supports multiple formats including PDF, TXT, EPUB, and DAISY.

VoiceOver (iOS)

<https://www.apple.com/accessibility/iphone/vision/>

Screen-reader integrated into the Mac OS X operating system. VoiceOver enables users with visual disabilities to control their computer or phone using keyboard commands and gestures.

Stamurai

<https://stamurai.com/>

A speech therapy smartphone app built to help people to learn and practice speech therapy exercises for stuttering

Petrallex Hearing Aid App

<https://play.google.com/store/apps/details?id=com.it4you.petrallex&hl=en>

This is a low-cost adjustable hearing aid app which amplifies local sounds for persons with hearing impairment. Adapts to local conditions and works with Bluetooth headsets.

Assistive Software

A list of no-cost accessibility tools – GOV.UK Accessibility Blog

<https://accessibility.blog.gov.uk/2018/09/27/assistive-technology-tools-you-can-use-at-no-cost/>

NVDA Screen Reader

<https://www.nvaccess.org/about-nvda/>

NonVisual Desktop Access is a free screen reader for Windows. NVDA allows blind and partially sighted persons to access and interact with the Windows operating system and programmes.

JAWS (Job Access With Speech)

<https://www.freedomscientific.com/products/software/jaws/>

JAWS is a popular commercial screen reading software, it has been on the market for over 20 years. It enables a blind or visually impaired users to read text that is displayed on the computer screen with a speech synthesizer or braille display. For a free Windows screen reader see NVDA.

ZoomText

<https://www.zoomtext.com/>

ZoomText is a commercial screen magnifier for Windows with many advanced features including colour controls, 60x zoom and enhanced navigation.

Microsoft Immersive Reader

<https://education.microsoft.com/en-us/resource/9b010288>

A free tool, built into Word, OneNote, Outlook, Office Lens, Microsoft Teams, Minecraft Education Edition and the Edge browser, that implements techniques to improve reading and writing for persons regardless of age or ability. Used as tool for students with learning differences such as dyslexia.

Communication Apps

WhatsApp Messenger

<https://www.whatsapp.com/>

The hugely popular free messaging and communication app for smartphones is highly accessible and popular for users with various types of disability. Works with mobile phone screen readers Google Accessibility Suite (Android) and VoiceOver (iOS).

WhatsApp Web

<https://web.whatsapp.com/>

The web-based interface of WhatsApp messenger, links to your mobile phone by scanning the QR code. Read and post messages, pictures, videos, files on the web.

Facebook

<https://www.facebook.com/>

The website version of Facebook works well with a screen reader and has excellent accessibility features. It is also good platform to share photos, video content and information. It is popular around the world and accessible to persons in low-internet literacy settings.

Video Accessibility

YouTube

<https://www.youtube.com/>

Excellent accessibility tools, including, automatically generated subtitles and closed captions. Share and livestream meetings, training courses and webinars, to enable participation of persons unable to physically access your meetings or venue. Works on billions of devices and computers.

YouTube - Adding subtitles or Closed Captions

<https://support.google.com/youtube/answer/2734796>

Checklist for Creating Accessible Videos (Bureau of Internet Accessibility)

https://www.boia.org/web_accessibility_checklist

Creating Accessible Videos (University of Washington)

<https://www.washington.edu/accessibility/>

Making Audio and Video Media Accessible

<https://www.w3.org/WAI/media/av/>



Assistive Devices

AT2030 Assistive Technology (DIFD / Global Disability Innovation Hub)

<https://at2030.org/>

AT2030 tests 'what works' to improve access to life-changing Assistive Technology (AT) for all; supporting solutions to scale in 15 countries across Africa and Asia.

KIBO XS

<https://trestlelabs.com/#kiboxs>

KIBO XS is a USB powered portable text scanner that can read printed and handwritten text in 11 Indian languages and multiple international languages. Ability to translate text across 100+ languages download editable Unicode format files. Compatible with mobile, web and laptops.

Braille Me

<https://innovisiontech.co/brailleme/>

Described as the world's most affordable refreshable Braille display. It connects to mobile phones and computers, has a portable design and long-lasting battery.

RUBY and RUBY HD

<https://www.freedomscientific.com/products/lowvision/ruby/>

The RUBY is an on-the-go video pocket sized video magnifier with a 4.3-inch screen to magnify items from 2 to 14 times the original size. It has LED lighting for viewing and reading in the dark.

Annie

<https://www.thinkerbelllabs.com/annie>

Annie is a device to visually impaired students to learn to read and type in Braille independently.

Orbit Reader

<https://www.orbitresearch.com/product/orbit-reader-20/>

A portable refreshable Braille display which can be used as a stand alone reader for e-books or connected to a smartphone or computer. Works with all popular Windows screen readers.

Orbit Writer

<https://www.orbitresearch.com/product/orbit-writer/>

A small, portable Bluetooth Braille keyboard for smartphones and computers.

Orbit Graphiti

<https://www.orbitresearch.com/product/graphiti/>

Graphiti Interactive Tactile Graphics Display enables non-visual access to any form of graphical information such as charts, drawings, flowcharts, floorplans, images and photographs, through an array of moving pins. It features a touch interface to enable the user to draw on the display. It has an 8-key Braille keyboard and HDMI port allowing connection to devices a video display output.

Tactopus

<https://tactopus.com/>

Games, books and activities embossed with textured so they can be read by fingertips. Combined with a smartphone app it assists blind children to learn independently.

Assistive Technology Incubators

Social Alpha

<https://www.socialalpha.org/>

This Indian based incubator integrates innovation, incubation and investment ecosystem to support mission driven entrepreneurs and start-ups. They have supported a number of start-ups developing assistive tech solutions.

Assistive Technology Incubator

<https://artilab.org>

ATA labs is enabling disability focused start-ups in India to develop products and reach the market.

Artilab Foundation

<https://artilab.org/edge-program/>

Established in 2017 Artilab is described as India's first disability focused technology start-up incubation program helping organisations to scale ideas to impact in assistive tech and rehab.

Making Websites Accessible

Web Accessibility Resources (European Disability Forum)

<https://www.edf-feph.org/web-accessibility-resources/>

Making the Web Accessible W3 WAI

<https://www.w3.org/WAI/>

Strategies, standards, and supporting resources to help you make the Web more accessible to people with disabilities. Includes video guides and information.

Web Content Accessibility Guidelines (WCAG)

<https://www.w3.org/WAI/standards-guidelines/wcag/>

WebAIM Introduction to Web Accessibility

<https://webaim.org/intro/>

7 Tech Tools which Help Persons with Disabilities Access the Web (Monsido)

<https://monsido.com/tools-web-accessibility-for-disability>

WebAIM WCAG 2 Checklist

<https://webaim.org/standards/wcag/checklist>

WAVE Web Accessibility Evaluation Tool

<https://wave.webaim.org/>

Wave Extension

<https://wave.webaim.org/extension/>

Extension to check websites for accessibility compatibility in Google Chrome and Firefox.



Newz Hook

<https://newzhook.com/>

India's 1st Accessible News Channel. Changing attitudes towards disability in India with a special focus on disability related news. Accessible to visually impaired screen reader users, promoting sign language news for deaf and using simple English.

Monsido Colour Contrast Checker

<https://monsido.com/tools/contrast-checker>

A simple to use tool to check text contrast accessibility. The tool tests the contrast of your background and text for accessibility. You can use it to visualize different colour combination palettes for your website design that follow WCAG, EU directive, and ADA standards.

WebAIM Contrast Checker

<https://webaim.org/resources/contrastchecker/>

Contrast Checker from WebAIM.

ContrastChecker.com

<https://contrastchecker.com/>

Simple and easy to use colour contrast checker.

Making Documents, PDFs and Files Accessible

CommonLook PDF Validator

<https://commonlook.com/accessibility-software/pdf-validator/>

A PDF accessibility checker add on for Adobe Acrobat.

Creating Content that Works Well for Screen Readers - GOV.UK Accessibility Blog

<https://accessibility.blog.gov.uk/2017/02/08/advice-for-creating-content-that-works-well-with-screen-readers/>

Creating Accessible Word Documents

<https://exploreaccess.org/creating-accessible-documents/creating-accessible-ms-word-documents/>

Creating Accessible PowerPoint Presentations

<https://exploreaccess.org/creating-accessible-documents/ppt/>

Making Meetings and Presentations Accessible

How to Make Your Presentations Accessible to All - W3C

<https://www.w3.org/WAI/teach-advocate/accessible-presentations/>

Advice on making presentations, talks, meetings, and training accessible to all, including people with disabilities and others.

Advice on Making Events and Presentations Accessible - GOV.UK Accessibility Blog

<https://accessibility.blog.gov.uk/2018/03/13/advice-for-making-events-and-presentations-accessible/>

Webinars: Accessible Online Participation Checklist (European Disability Forum)

<https://www.edf-feph.org/newsroom-news-accessible-online-participation-checklist/>

Guide for Accessible Meetings (European Disability Forum)

https://www.edf-feph.org/content/uploads/2021/02/edf_guide_for_accessible_meetings_1.pdf

Making Distance Education, Remote and On-Line Learning Accessible

Designing an Accessible On-line course

<https://exploreaccess.org/accessible-online-course/>

This toolkit was developed quickly to assist universities and colleges who are moving online virtually overnight in response to COVID-19.

What considerations should be made in order to develop accessible web-based distance learning courses? (University of Washington)

<https://www.washington.edu/doit/what-considerations-should-be-made-order-develop-accessible-web-based-distance-learning-courses?1173=>

IMS Guidelines for Developing Accessible Learning Applications

<http://www.imsglobal.org/accessibility/accessiblevers/index.html>

BleeTV App and BleeTV Library

<https://www.bleetech.in/>

BleeTV Library is India's only digital platform for deaf students to access learning and information-based content in sign language at school. Specially made and curated for children, BleeTV Library is a digital platform to showcase accessible content, monitor student activities and support schools.

Bleekit

<https://www.bleetech.in/covid-19-response>

Bleekit is a remote well-being and learning programme designed for Indian deaf and hard of hearing children during the COVID19 pandemic.

Inclusive Design, Designing for All and Universal Design

Inclusive Design Toolkit (Cambridge University)

<http://www.inclusivedesigntoolkit.com/>

International Best Practices in Universal Design: A Global Review

<https://teaching.cornell.edu/teaching-resources/teaching-cornell-guide/inclusive-course-design/universal-design>

Cornell resources include accessibility codes and standards from around the world to provide data and insight into the latest trends in accessible design. Minimum requirements are provided alongside best practice presents examples of universal design.

Designing with People – Royal College of Art

<https://www.rca.ac.uk/study/programme-finder/design-thinking-innovation-collaboration-design-museum/>

DOGA Inclusive Design

<https://doga.no/en/tools/inclusive-design/>

DOGA Inclusive Design Checklist

<https://doga.no/en/tools/inclusive-design/tools-and-methods/checklist/>

Inclusive Design principles can always be applied when developing any product, environment or service. This is a checklist to help you to decide why Inclusive Design should be applied.

Design for All Foundation – Good Practice Site

<http://designforall.org/design.php>



Guides for Accessibility and Disability Inclusion

Principles for Digital Development

<https://digitalprinciples.org/>

Making Inclusion a Reality in Development Organisations: A manual for advisors in disability mainstreaming (IDDC)

<https://www.iddcconsortium.net/wp-content/uploads/2019/11/2012-IDDC-Making-Inclusion-a-Reality-in-Development-Organisations.pdf>

The manual assists organisations to implement disability mainstreaming through a process of organisational change. It provides a comprehensive package of information including background to disability concepts, identifying impact, how to create a vision of inclusion, managing organisational change, tools and self-assessment, as well as links to further resources.

Disability Inclusive WASH

Casting the net further: Disability Inclusive WASH (World Vision)

https://www.wvi.org/sites/default/files/Full%20Disability%20Inclusive%20WASH%20Report.FINAL_.pdf

The guide features suggestions on identifying, engaging, involving and supporting persons with different types of disabilities in designing and constructing WASH facilities and equipment. In the appendix are useful links on how to find Disabled Person's Organisations within your project area.

Disability: Making Community Led Total Sanitation Fully Inclusive

https://www.communityledtotalsanitation.org/sites/communityledtotalsanitation.org/files/media/Frontiers_of_CLTS_Issue3_Disabilities.pdf

Mainstreaming Disability and Making WASH Programmes Inclusive – (K4D)

https://opendocs.ids.ac.uk/opendocs/bitstream/handle/20.500.12413/14229/372_Disability_Inclusion_in_WASH_Programming.pdf

This rapid review synthesises evidence and literatures on approaches that have worked in mainstreaming the disability agenda in WASH programming.

Making a commitment to Disability Accessibility and Inclusion

Accessibility = GO! A Guide to Action: Delivering on the 7 accessibility commitments

<https://worldblindunion.org/wp-content/uploads/2020/10/Accessibility-GO-A-Guide-to-Action-WBU-CBM-Global.pdf>

Making disability commitments, just like the World Bank

<https://www.worldbank.org/en/topic/socialdevelopment/brief/world-bank-group-commitments-on-disability-inclusion-development>

General Resources on Disability, Development and Inclusion

Good practice guide: embedding inclusion of older people and people with disabilities in humanitarian policy and practice (ADCAP)

<https://reliefweb.int/sites/reliefweb.int/files/resources/Good%20Practice%20Guide%20ADCAP.pdf>

Good Practice Note: Non-Discrimination and Disability (World Bank)

<http://documents1.worldbank.org/curated/en/573841530208492785/Environment-and-Social-Framework-ESF-Good-Practice-Note-on-Disability-English.pdf>

The Good Practice Note is to prevent disability discrimination through providing in depth guidance on how to analyse of the inclusion of disability issues within the planning (or financing) a project. Use of the guide assists users to identify vulnerable or disadvantaged individuals and groups, including persons with physical or mental disabilities, and assessing and preventing potential risks and negative impacts that could affect them disproportionately, as well as barriers to accessing project benefits.

Promoting sexual and reproductive health for persons with disabilities (WHO/UNFPA guidance note)

https://www.unfpa.org/sites/default/files/pub-pdf/srh_for_disabilities.pdf

A Handbook on Mainstreaming Disability (VSO)

https://asksource.info/pdf/33903_vsomainstreamingdisability_2006.pdf

Learning Disabilities Good Practice Project (UK Department of Health)

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/261896/Learning_Disabilities_Good_Practice_Project_Novemeber_2013_.pdf

Excellent resource for organisations which provides clear examples of good practice in supporting and working with persons with learning difficulties or complex needs. Although written primarily for care providers and services users in the UK, many of the examples and suggestions can be incorporated into development programming.

Making it Work: Good practices for disability-inclusive development and humanitarian action (Making It Work and Handicap International)

<https://www.makingitwork-crpd.org/sites/default/files/2017-05/MIW%20guidelines%20full%20%28en%29.pdf>

Guidelines on the provision of manual wheelchairs in less resourced settings (WHO)

<https://www.who.int/publications/i/item/guidelines-on-the-provision-of-manual-wheelchairs-in-less-resourced-settings>

Joint position paper on the provision of mobility devices in less resourced settings WHO/USAID

https://apps.who.int/iris/bitstream/handle/10665/44780/9789241502887_eng.pdf?sequence=1

Disability Inclusion and Accountability Framework (World Bank)

<http://documents1.worldbank.org/curated/en/437451528442789278/pdf/126977-WP-PUBLIC-DisabilityInclusionAccountabilitydigital.pdf>

World Report on Disability - WHO/World Bank 2011

<http://documents1.worldbank.org/curated/en/665131468331271288/pdf/627830WP0World00PUBLIC00BOX361491B0.pdf>

Towards Inclusive Education: The Impact of Disability on School Attendance in Developing Countries (Report) UNICEF Office of Research 2016

<https://ssrn.com/abstract=2782430>

Women and girls with disabilities in conflict and crises (K4D)

<https://opendocs.ids.ac.uk/opendocs/bitstream/handle/20.500.12413/13192/032-Women%20and%20girls%20with%20disabilities%20in%20crisis%20and%20conflict.pdf>

Disability Prevalence and Trends – Literature Review – 2017 (K4D)

<https://opendocs.ids.ac.uk/opendocs/bitstream/handle/20.500.12413/13237/179%20Disability%20prevalence%20and%20trends.pdf>

Strengthening Participation of People with Disabilities in Leadership Roles in Developing Countries (K4D)

https://opendocs.ids.ac.uk/opendocs/bitstream/handle/20.500.12413/13796/Strengthening_participation_of_people_with_disabilities_in_leadership_roles.pdf





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