Integrating Disability in Energy Transition GESI Strategies

A Briefing Note prepared under the Disability Support Service (DSS) for the Transforming Energy Access (TEA) platform.

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About the Transforming Energy Access platform

Transforming Energy Access (TEA) is the flagship Foreign, Commonwealth and Development Office (FCDO) research and innovation platform supporting early-stage testing and scale-up of innovative technologies and business models that accelerate access to affordable, clean and modern energy, enabling sustainable, and inclusive growth in Sub-Saharan Africa, South Asia, and the Indo-Pacific region. This includes clean energy supply technologies (e.g. next generation solar), super-efficient demand solutions (e.g. efficient appliances, sustainable cooling, modern cooking) and smart delivery solutions (e.g. energy storage, green grids, hydrogen). It targets people and enterprises who have no or limited access to clean, modern energy services and limited opportunities to participate in, or benefit from, the energy sector through employment and income generation opportunities. TEA leads on several Ayrton Challenges including ‘Next Generation Solar’, ‘Zero Emissions Generators’, ‘Energy Storage’, ‘Clean Hydrogen’, ‘Inclusive Energy and Leave No One Behind’, ‘Sustainable Cooling for All’ and ‘Energy Efficiency’ (via the LEIA programme), and supports ‘Clean Transport’ and ‘Smart Energy Systems’.

As underpinned in the FCDO Disability Inclusion and Rights Strategy (2022-2030), and the UK International Climate Finance Strategy, disability-inclusive climate action is a critical emerging area for TEA activity whereby inclusive adaptation, resilience, and clean energy access can ensure supporting a just and inclusive clean energy transition that leaves no-one behind.

About the Global Disability Innovation Hub

Global Disability Innovation (GDI) Hub accelerates ideas into impact for a more just world —for disabled people, and all people. We are a world leading delivery and practice centre, an Academic Research Centre at University College London (UCL) and the first World Health Organization (WHO) Global Collaborating Centre on Assistive Technology. As an Academic Research Centre and Community Interest Company, our diverse portfolio and unique structure enables rapid translation of research into practice. GDI Hub is also home to the UK aid funded AT2030 programme which tests ‘what works’ to improve access to life-changing Assistive Technology (AT) for all.

Launched in 2016 as a legacy of the London 2012 Paralympic Games, our office and research lab continue to be based on the Queen Elizabeth Olympic Park, at UCL’s East London campus. GDI Hub works in 40+ countries, with a reach of more than 37 million people since 2016, developing homegrown technologies alongside new knowledge and research. In collaboration with global partners, we deliver accelerators and market shaping initiatives—building disability innovation ecosystems with a focus on Low-and Middle-Income countries (LMICs).

Purpose

This Briefing Note sets the context, rationale, and recommendations for strategically integrating disability inclusion and accessibility in energy transition, Gender Equality, and Social Inclusion (GESI) programming and delivery.

Particularly, this frames a Gender Equality, Disability, and Social Inclusion (GEDSI) approach for the Transforming Energy Access (TEA) platform which will be tested and validated by TEA partners and Global Disability Innovation (GDI) Hub through a two-year, cross platform Disability Support Service.

Taking explicit action to avoid and remove inequalities in society and protect human rights, particularly for those most vulnerable and marginalised, is a critical part and path towards sustainable development, with energy transition for all as a foundational pillar.

GESI strategies within energy transition programmes are designed to ensure that the transition includes the most marginalised groups and mitigates risks for such groups of people. People with disabilities, 1 in 6 of the population globally, are at risk of being left behind in the energy transition but whilst disability inclusion is referenced in energy transition GESI strategies, few have an explicit focus.

Audience

- Transforming Energy Access partners
- Businesses, researchers, practitioners, and other stakeholder networks involved in energy transition work.
- Climate finance programme stakeholders.

Reading notes

Disability is diverse, encompassing physical, sensory, and intellectual disabilities. Likewise, the experiences of people with disabilities—and the barriers they encounter when trying to access or benefit from material, financial, or social opportunities—vary greatly. Just as diverse are the ways in which these barriers can be removed.

For example, the barriers a person who is partially sighted experiences whilst navigating the installation of a home solar panel are different depending on whether they can afford eyeglasses and different still from those of a person with paralysis in their lower legs. Just as diverse are the ways in which these barriers can be removed to enable an accessible process of installation, such as local supply of affordable glasses, community installation services, tactile or audio operating cues, and height-adjustable workstations.

While this brief draws on people with disabilities as an evidencing group based on the literature, we encourage readers to acknowledge the vast diversity within such a grouping throughout.

For readers who are at the beginning of their understanding on disability inclusion, we recommend reading the appendix Disability inclusion definitions and principles.

Contents

Inclusion and the energy transition

Leave no one behind

The phrase Leave No One Behind (LNOB) emphasises the importance of ensuring that everyone, especially the most vulnerable and marginalised, benefits from sustainable development efforts (1). LNOB is the central promise of the 2030 Agenda for Sustainable Development and its Goals (SDGs), and hence a central part of the delivery of Goal 7 (SDG7) - ensuring access to affordable, reliable, sustainable, and modern energy for all (2). Globally, those currently most marginalised and disproportionately left behind include women and girls, people in rural areas, indigenous peoples, ethnic and linguistic minorities, people with disabilities, migrants, gender and sexual minorities, youth and older persons (3,4). In practice, leaving no one behind in efforts towards affordable, reliable, sustainable, and modern energy for all requires acting explicitly (3) action to avoid and remove diverse and intersectional discrimination of and adverse impacts for these groups.

The UK Government announced the Ayrton Fund commitment of up to £1bn for clean energy innovation at the UN Climate Action Summit in 2019. It is part of the total £11.6bn of UK International Climate Finance also announced over the period from 2021 to 2026. The vision of the Ayrton Fund is to help drive forward the clean energy transition in developing countries, by creating and demonstrating new technologies and business models to deploy them. It will demonstrate UK leadership and expertise in cutting global emissions through world-leading innovations. The Foreign, Commonwealth & Development Office (FCDO), the Department for Energy Security and Net Zero (DESNZ) and the Department for Science, Innovation and Technology (DSIT) jointly manage the Ayrton Fund.

Just transition

Low-carbon energy systems are not necessarily more fair or inclusive than the energy systems that they replace, and in the transition towards and establishment of low-carbon energy sectors, inequalities can persist or even worsen (5,6). A just transition addresses various dimensions of inequality, vulnerability, and opportunity, in the process of creating a low-carbon economy (7).

Not mitigating inequalities in energy transition could have adverse outcomes. As articulated by the World Economic Forum, an energy transition which is "unjust, inequitable, and non-inclusive" manifests as, for example, "…disparities in energy access, price volatility, affordability constraints, unequal job impacts, and finance" (6). The International Labour Organization (ILO) states that a lack of a just transition approach "…could have severe implications for realising inclusive and gender-responsive climate action, while leading to increased inequality, reduced productivity, less competitive businesses, migration flows and forced displacement, and social unrest" (8).

Just transition was reinforced as a 'built-in' approach to climate change response, mitigation, and resilience in the 2015 Paris Agreement (9,10). In practice, ensuring a just transition to low-carbon and climate-resilient economies is about leveraging opportunities (5), and mitigating risks, for the inclusion of all people.

Figure 01: Leverage opportunities, mitigate risks

GE(D)SI strategies

There are many climate-responsive and low-carbon development programmes centring the importance of 'mainstreaming' gender equality and social inclusion (GESI). Examples are UK PACT, with their GESI 'Ambition' and 'Guidance'(11), SNV's publication on 'GESI-led approaches to climate resilience and inclusion'(12), Energy Catalyst's 'Investment Guide for

Gender & Social Inclusion (GESI) Lens Investing'(13), Modern Energy and Cooking Services' (MECS) blog 'Mainstreaming Gender & Social Inclusion Whilst Accelerating the Electrification of Cooking in Kenya'(14) and Asian Development Bank's 'Gender Equality and Social Inclusion Assessment for the Energy Sector' (15). Importantly there are many more which focus on gender equality and energy access specifically (8,16,17,18,19). While it is common for inclusion of people with disabilities to be mentioned in GESI approaches, very few highlights specific measures and strategies for accessibility and the inclusion of people with disabilities. There has been some progress made to deliver gender equality, disability, and social inclusion (GEDSI) guidance and strategy in the sector (20) but gaps remain across global programmes.

Disability in context

Disability in the global context

As an evolving concept, "disability results from the interaction between persons with impairments and attitudinal and environmental barriers that hinders their full and effective participation in society on an equal basis with others" (21). Disability is diverse (e.g., physical, intellectual, sensory), both visible and invisible, and the prevalence of disability increases with age.

"Disability is part of human condition. Almost everyone will be temporarily or permanently impaired at some point in life."
World Health Organization, World Bank, 2011

As an evolving concept, "disability results from the interaction between persons with impairments and attitudinal and environmental barriers that hinders their full and effective participation in society on an equal basis with others" (21). Disability is diverse (e.g., physical, intellectual, sensory), both visible and invisible, and the prevalence of disability increases with age.

The World Health Organization (WHO) estimates that 1 in 6 people in the world experience significant disability (1.3 billion people) (22). Disability prevalence is estimated to be higher amongst women (19% rising to 22.1% in lower-income countries) than men (12%) globally

(23),(24).

Across the world, people with disabilities face disproportionate levels of poverty, limited access to education, health services, and employment, as well as underrepresentation in decision-making and political participation (25). The United Nations' 2018 flagship Disability and Development Report highlights the main barriers to inclusion for people with disabilities, which include discrimination and stigma, lack of accessibility to physical and virtual environments, limited access to assistive technology, and insufficient access to essential services, rehabilitation, and support for independent living (25).

Women with disabilities are disproportionately excluded and marginalised due to the interplay between poverty and gender, as well as disability-based discrimination. This results in hindered access to education, employment, social interaction, and increased vulnerability to violence, particularly among women with intellectual disabilities (26).
The 2006 United Nations Convention on the Rights of Persons with Disabilities (CRPD), is said to have introduced a “paradigm shift in the understanding of disability” (27), from people with disabilities being perceived as objects of charity to subjects of rights (27). As underpinned by the CRPD (25), ensuring that people with disabilities can access their human rights means removing the barriers in the way of their full and effective participation in society on an equal basis with others.

Disability in the context of energy transition

To ensure that people with disabilities are not excluded from the energy transition, it is important to focus on both the unique needs and barriers people with disabilities might face in relation to their energy use and participation in the energy economy.
Examples of unique circumstances for people with disabilities include: energy poverty (25); inaccessible energy technologies and infrastructure(28); higher and bespoke energy needs (for example, charging assistive technologies such as wheelchairs and hearing aids) (29,25); limited energy supply for healthcare facilities which could incur severe challenges in receiving both standard and specialised care service (30); and the “disproportionately low representation of persons with disabilities in the labour market with unemployment rates as high as 70 to 80 per cent”(25,31), though new jobs are being created within energy sector.

It is important to note that data on the energy use and needs of people with disabilities is

lacking, globally. A better methodology and system to collect, analyse, and apply disability data across energy access programmes is crucial to identify needs, measure impact, and mitigate exclusion.

For an in-depth overview of unique circumstances for people with disabilities, within energy access and the energy economy, please refer to the Opportunities for Disability-inclusive Energy Access White Paper.

The case for explicit disability inclusion in energy transition

Disability inclusion has been found to be consistently lacking in development programming and experts highlight that unless explicit mention of disability is made, people with disabilities are likely to get left further behind.

As exemplified in Climate Investment Funds report 'Disability Inclusion in Climate Finance' (32) and Efficiency for Access' research note 'How Can Energy Access Programmes Address the Needs of People with Disabilities?'(33) compartmentalising climate work and disability inclusion work risks excluding and marginalising people with disabilities further. In relation to disability-inclusive climate finance, Caridad Araujo, Chief of the Gender and Diversity Division at Inter-American Development Bank (IDB), calls for "commitments, targets, and accountability" (34) to translate intention into action.

There is importance in explicitly referring to the inclusion of people with disabilities and the mechanisms to do so at a programmatic level. Preceding the SDGs were the United Nations Millennium Development Goals 2015, which "galvanized unprecedented efforts to meet the needs of the world's poorest"(35). As the goalpost drew closer in 2014, UNICEF wrote how "…without explicit references to persons with disabilities, the Millennium Development Goals failed to effectively address the situation of this group, 80 per cent of whom live in developing countries"(36). The World Bank also wrote in 2015 how "…when persons with disabilities are not explicitly included in development programming, they are often left out"(37). As Maria Kett, Professor in Humanitarianism and Social Inclusion, UCL, explains, "…when talking about how funders can ensure that people with disabilities are included, it's always a dilemma making disability inclusion a mandatory requirement, but if

we don’t say it, it doesn’t happen.”(38).

The business case

“Integrating accessibility and inclusion helps serve 1 in 6 customers, attract diverse talent, reduce legal risks, and avoid future retrofitting costs; in essence driving sustainable business growth and innovation” (39)
Catherine Holloway, Professor of Interaction Design and Innovation, UCL.

This brief has outlined why disability inclusion and accessibility make sense for sustainable development. As exemplified below, it also makes sense for business.

- **Mitigating the risk of company litigation:** Not delivering accessibility across all domains (infrastructure, digital environments, communications, products, and services) could expose companies to legal challenge. Even where countries do not have accessibility legislation or it is only loosely implemented, a large majority of countries globally have ratified the CRPD, which outlines measures to be taken by states to ensure accessibility (21). Therefore, building accessibility into all domains mitigates future legal risk or the costly retrofit for accessibility, should accessibility law be more comprehensively implemented.
- **Sustainability:** Retrofitting is construction twice; inclusive and accessible design is construction once.
- **Employment:** 22% of the global working age population have a disability (40). Disability-inclusive workforces see increased talent access, innovation, engagement, retention, and enhanced reputation—all of which likely contribute to better business performance (41).
- **Cost saving:** Integrating or adopting inclusive design from the start of a project typically only adds about 1% to the total cost. Making these changes later can potentially increase costs by up to 20% (42).
- **Return on investment:** Forrester Research (39) estimated that for every dollar spent on digital accessibility and user improvements, there is an average revenue return of over nine dollars.
- **Maximising consumer base:** Recent research estimates that globally, “the disability market controls over $13 trillion in disposable income,” from 3.3 billion potential consumers, including the friends and families of people with disabilities (40).

Unfortunately, despite the evidence pointing to the importance of explicit action to include people with disabilities in the low-carbon economy, the World Economic Forum finds that "…although 90% of companies claim to prioritise diversity, only 4% of businesses are focused on making offerings inclusive of disability."(43)

Whilst the commercial return from customers with disabilities and delivering inclusive and accessible products has been evidenced globally, bespoke evidencing of business cases for small scale, local energy access ventures need to be sought and strengthened to catalyse action.

Why is disability left out?

Research finds that people with disabilities are overwhelmingly excluded from international development due to a lack of awareness, the perception that disability inclusion is a separate focus area, the assumption that it is costly and should be addressed by other stakeholders, and a significant lack of data (44).

"A lot of the time we tend to naturally default to siloes, so we don't think of the intersection of disability and climate or the intersection of disability, climate, and gender because we're traditionally thinking of them as separate groupings or separate thematic areas" (38).
Mary Keogh, Advocacy Director for CBM Global

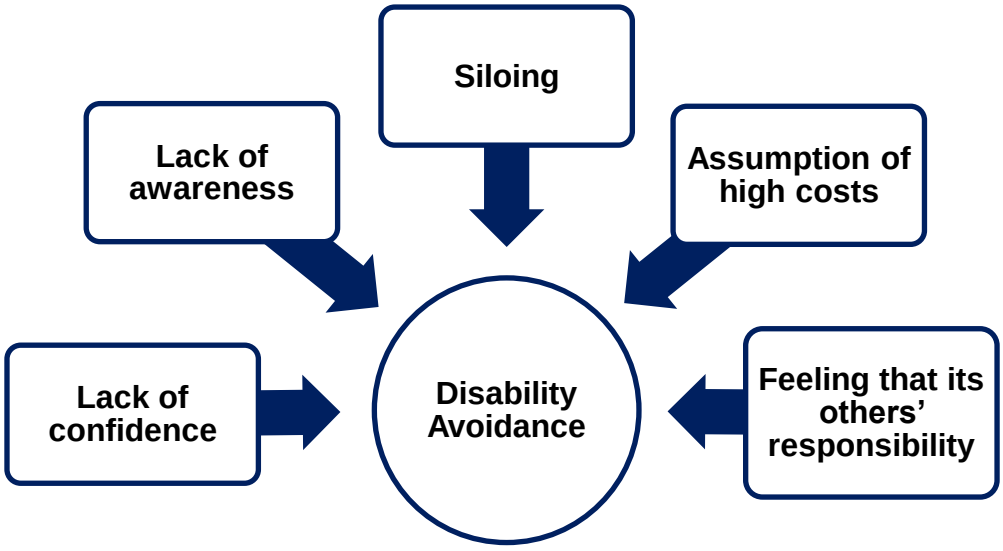

Figure 02: Disability avoidance

These barriers speak to a key requirement for development stakeholders to build their knowledge and understanding of why disability inclusion is integral to their work and to implement systematic methodology to build an evidence base on disability inclusion, as related to their programme of work.

Recommendations for a GE(D)SI strategy

Drawing from GDI Hub's expertise, the following recommendations are made for integrating disability into energy transition programmes or interventions and producing a GEDSI strategy. Given the lack of good data and evidence on disability inclusion in the energy access sector, recommendations are based on 'common good practice principles' as a strategic foundation.

It is important to note that when integrating these recommendations to develop a GEDSI strategy, items should not duplicate methodologies already delivered through GESI strategies or replace important measures for other demographic groups. Non-duplicative integration of these practices and principles is therefore as important as ensuring that the fundamental practices to secure the rights of people with disabilities (such as the provision of reasonable accommodation, for example) remain explicit.

1. **Explicit mention:** The need for explicit references to disability inclusion at a programmatic level is crucial, as the absence of such measures historically leads to the neglect of the needs of people with disabilities.
2. **Rights-based approach:** Aligning the implementation of the SDG 2030 Agenda with the CRPD is essential to ensure the inclusion of people with disabilities in energy transition, meeting both national and international obligations.
3. **Awareness and training:** Lack of confidence to approach disability and disability inclusion is common, with barriers including cultural stigmatisation, not wanting to talk about someone else's experience, and fear of getting things wrong. Training for all staff members in disability awareness can support energy sector researchers and practitioners to feel confident engaging in disability inclusive practice.
4. **Accessibility:** The European Disability Forum(45) calls for integrating accessibility from the outset in all green and resilient infrastructure investments and programmes, to eliminate barriers and ensure people with disabilities can access physical

environments, transportation, and information systems. Not providing accessibility can breach human rights, hence comprehensive implementation across energy transition programmes is essential, requiring resources, budgeting, assessment, and technical expertise.

5. **Reasonable accommodation:** Reasonable accommodation, as defined by the CRPD, involves necessary modifications to ensure that people with disabilities can enjoy their human rights equally, and its denial is considered discrimination (21). Implementing reasonable accommodation requires explicit policies, procedures, budgets, and proactive engagement, exemplified by Chemonics' practice of including a “Disability-Related Accommodation” line item in budgets during proposal stages (46).
6. **Meaningful participation:** The CRPD emphasises meaningful participation and representation of people with disabilities and ensuring the inclusion of diverse lived experiences and needs through collaboration with Organisations of Persons with Disabilities (OPDs) (21). An example of this is British International Investment's construction of a solar energy plant in Egypt, where people with disabilities were proactively recruited and provided reasonable accommodations to support inclusive employment (47).
7. **Inclusive design:** Inclusive design is a methodology used to co-design solutions with diverse end users, including people with disabilities. It is not limited to the physical design of products, services, and infrastructure—it can also facilitate inclusive decision-making, strategic planning, and research methods (48).
8. **Data and measurement:** There is a distinct lack of data, both qualitative and quantitative, on people with disabilities and access to energy. Through disability inclusion and accessibility-focused programming and data disaggregation, further focus areas for leaving no one behind in energy transition are likely to be uncovered overtime. As outlined by Efficiency for Access, the inclusion of “harmonised disability questions in energy access surveys can enable household-level disability identification for future research requirements” (33). This could be done using the Washington Group on Disability Statistics (WG) survey methodology which is aligned with the CRPD.
9. **Intersectionality:** The intersectionality of disability and personal characteristics, such as gender, can lead to greater marginalisation and disadvantages, with research indicating that women with disabilities are more likely to experience energy

poverty (49). Addressing this intersectional discrimination through explicit strategies is crucial for a just transition. It is also important to recognise that gender and disability inclusion targets could possibly conflict or be drawing on a singular budget and human resources, leading to operational strain. There is little evidence on this topic at this stage, but it is worth consideration.

10. **Risk:** Exclusion of people with disabilities presents a range of risks that should be mitigated at a programme level. Examples include the reputational risks of excluding people with disabilities, company litigation risks related to inaccessibility, discrimination, and safeguarding, and health and safety risks resulting from a lack of accessibility.
11. **Inclusive innovation:** Opportunities exist to integrate inclusive innovation into the GESI strategies through collaboration across a diversity of partnerships. The AT2030 programme has demonstrated the potential of disability innovation in incubating new solutions and building AT ecosystems, which aligns with the energy needs and innovation journey of partners and businesses under the TEA platform, offering opportunities to support inclusive practices in product development and local market scaling.

Appendix

Disability inclusion definitions and principles

Approaches to and understandings of disability inclusion are constantly—and importantly —evolving. To support the integration of disability inclusion and energy access innovation under the TEA platform, the following definitions are adopted.

People with disabilities or persons with disabilities or disabled people

As defined by the United Nations Convention on the Rights of Persons with Disabilities (CRPD), “persons with disabilities include those who have long-term physical, mental, intellectual, or sensory impairments, which in interaction with various barriers may hinder their full and effective participation in society on an equal basis with others.” (21)
Note that there are different preferences regarding terminology, with disabled people used more commonly in the United Kingdom (UK) and people with disabilities used more commonly internationally. Terms can be chosen on a case-by-case basis and, if possible, in consultation with disabled people in the context within which work is taking place. This document adopts ‘people with disabilities,’ unless referring to a quote.

Accessibility

Refers to enabling access to infrastructure, products, services, and facilities for all people with disabilities. Accessibility is driven by technical standards or design guidelines for the physical and digital infrastructure. Accessibility delivers access to equal participation, whereas inclusive design goes beyond access and delivers systemic inclusion.

Assistive product

Physical products (e.g., hearing aids) and digital products (e.g., screen reading software), specifically developed to advance individuals’ functioning and independence(50).

Assistive technology

Assistive technology (AT) is the application of organised knowledge and skills related to assistive products, systems, and services, designed to maintain or improve an individual’s

functioning and independence, and thereby promote their well-being(51).

Disability

Disability is an evolving concept and results from the interaction between people with impairments and attitudinal and environmental barriers that hinder their full and effective participation in society on an equal basis with others(21).

Disability disaggregated data

Information on programme objectives and other characteristics as disaggregated according to disability.

Disabled People's Organisations (DPOs) or Organisations of Persons with Disabilities (OPDs)

A Disabled People's Organisations (DPO), sometimes called, Organisation of Persons with Disabilities (OPD), is "a representative organisation or group of persons with disabilities, where persons with disabilities constitute a majority of the overall staff, board, and volunteers in all levels of the organisation"(52).

Discrimination on the basis of disability

As defined by the CRPD: "any distinction, exclusion or restriction on the basis of disability which has the purpose or effect of impairing or nullifying the recognition, enjoyment or exercise, on an equal basis with others, of all human rights and fundamental freedoms in the political, economic, social, cultural, civil or any other field. It includes all forms of discrimination, including denial of reasonable accommodation."(21).

Exclusion

Restricted participation in, access to or benefit from material, financial or social activities or outcomes.

Inclusive design

Inclusive design is a mindset and a methodology that embraces diversity to create a world that is more intuitive, elegant, and usable for all of us. Inclusive design can help all human beings experience the world around them in a fair and equal way, by creating safe and accessible environments, products, and services for all members of the community.

Participation

People with disabilities effectively and fully engaging in political and public life on an equal basis with others, directly or through freely chosen representatives(21).

Reasonable accommodation

As defined by the United Nations Convention on the Rights of Persons with Disabilities (CRPD) as “necessary and appropriate modification and adjustments not imposing a disproportionate or undue burden, where needed in a particular case, to ensure to people with disabilities the enjoyment or exercise on an equal basis with others of all human rights and fundamental freedoms”.(21)

The Washington Group Questions

Standardised questions designed to globally identify who might be considered to have a disability by asking respondents to what extent they have difficulty performing different activities. Access question sets here: www.washingtongroup-disability.com/question-sets/.

Cover Image: *Access to energy in the home is vital as it can enable people with disabilities to access remote employment opportunities. Here, Masni, Head of Indonesian Association of Women with Disabilities (HWDI) in South Borneo is listing the assistive product needs for people in Indonesia. Source: The AT2030 Programme, Global Disability Innovation Hub. Photographer: Angus Scott (2020)*

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