Assistive Technology Assessment - Capacity (ATA-C)

Nigeria

Developed by the Clinton Health Access Initiative, Inc.
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Abbreviations and Acronyms

AT	Assistive Technology
ATA-C	Assistive Technology Capacity Assessment
CHAI	Clinton Health Access Initiative
CRPD	Convention on the Rights of Persons with Disabilities
DHS	Demographic and Health Survey
FMHADMSD	Federal Ministry of Humanitarian Affairs, Disaster Management and Social Development
FMoH	Federal Ministry of Health
FMWASD	Federal Ministry of Women Affairs and Social Development
GASHE	Gender, Adolescent/School Health and Elderly Care
GDP	Gross Domestic Product
JICA	Japanese International Cooperation Agency
JONAPWD	Joint National Association of Persons with Disabilities
LASODA	Lagos State Office for Disability Affairs
MDCN	Medical and Dental Council of Nigeria
MRTB	Medical Rehabilitation Therapists Board
NAFDAC	National Agency for Food and Drug Administration and Control
NCD	Non-communicable disease
NHIS	National Health Insurance Scheme
NILEST	Nigerian Institute for Leather Science and Technology
NTWG	National Technical Working Group
ODORBN	Optometrists and Dispensing Opticians Registration Board of Nigeria
SON	Standards Organization of Nigeria
STEPS	STEPwise approach to non-communicable disease risk factor surveillance
THE	Total Health Expenditure
TLMN	The Leprosy Mission Nigeria
WHO	World Health Organization
UN	United Nations

Executive Summary

Assistive technology (AT) is an umbrella term covering the systems and services related to the delivery of assistive products and services. Worldwide, over one billion (largely disabled and older) people need AT, a number predicted to rise to two billion by 2050. In Nigeria, at least 25 million people live with disabilities and may require AT.

This Assistive Technology Capacity Assessment report provides a high-level overview of Nigeria's capacity to procure and provide assistive technology that appropriately meets its population needs. The assessment reviews the current assistive technology financing and service entitlements on the national benefits package, as well as existing legislation, policies, products, and services provided through the public, private, and non-governmental sectors. The assessment employed a four-stage process: planning; data collection; data analysis; and a stakeholder workshop to review and validate findings from field interviews. A total of 53 organizations were interviewed for the assessment. Respondents also provided hard or electronic copies of relevant policies, laws, guidelines, reports, and data sets to the interviewers.

Findings from the assessment showed that Nigeria lacks reliable data and information systems on assistive technology and on disabilities. Additionally, there is limited coordination among government entities for AT and consequently, weak coordination of non-government stakeholders in the AT sector. The establishment of the National Commission for Persons with Disabilities will help to address the fragmentation of roles and responsibilities at national and sub-national levels in the sector.

The assessment also revealed that the legal framework for assistive technology in Nigeria requires strengthening. For instance, Nigeria has ratified the Convention on the Rights of Persons with Disabilities (CRPD) and has a legal framework for CRPD implementation, the 2019 Disability Rights Law, where AT is mentioned. However, at the time of the development of this report, the law had yet to be fully implemented. The country also lacks a unified national strategy for increased access to AT with clear roles and responsibilities. Government financing to support AT programs in Nigeria are insufficient both at national and state levels.

Procurement systems for AT in Nigeria also need strengthening. The country does not have a national prioritized list for assistive products nor are there technical specifications for assistive products locally produced or imported to the country. Additionally, government at federal and state levels procure a limited number of assistive products and mostly rely on non-government actors to meet the needs of AT users. However, many assistive products are not exempt from import duties.

Nigeria's AT workforce and workforce capacity building also needs strengthening, as does service provision for assistive products. Nigeria needs to develop clear guidelines and standards for assistive technology provision and create well-connected and coordinated referral systems to address the current fragmentation in AT referral mechanisms in the health, education, and social welfare sectors. Overall, there is an opportunity for Nigeria to establish an AT program within the National Commission for Persons with Disabilities that coordinates all the actions needed to accelerate access to life-changing AT in Nigeria.

Introduction

This Assistive Technology Capacity Assessment (ATA-C) report provides a high-level overview of Nigeria's capacity to procure and provide assistive technology that appropriately meets its population needs. The assessment reviews the current assistive technology financing and service entitlements on the national benefits package, as well as existing legislation, policies, products, and services provided through the public, private, and non-governmental sectors. The assessment findings will allow the country to better understand the current landscape for assistive technology and will help inform the development and refinement of the national action plan to improve access to assistive technology in Nigeria

Background

Assistive technology (AT) is an umbrella term covering the systems and services related to the delivery of assistive products and services[1]. Worldwide, over one billion (largely disabled and older) people need AT, a number predicted to rise to two billion by 2050. Yet only 1 in every 10 people who need AT – to learn, to work or to fully participate in their communities – have access. This gap is even more prominent across low-resourced settings, especially in low- and middle-income countries (LMICs).

The AT sector faces multiple market barriers both in the supply of appropriate, affordable, and quality products and in demand for these products by users, service providers, and national health systems. Appropriate AT is defined as assistive products and related services which meet the user's needs and environmental conditions, is properly fitted and prescribed, safe and durable for use. Appropriate AT can be obtained, maintained, and repaired with provided services in the country at an affordable cost. A well-functioning health system that has the capacity to provide assistive products and services at an affordable price and in a timely manner is instrumental to ensuring equitable access to AT.

Purpose

The purpose of the AT Capacity Assessment is to collect key pieces of information related to AT financing, procurement, and provision in a country or region. This assessment can serve as a foundational element to support countries, in building out or improving systems for AT financing, procurement, and provision, in two ways:

1. **Raising awareness:** the information obtained from this assessment can improve a country's knowledge and understanding of their current AT landscape, specifically, their capacity for AT financing, procurement and provision. This assessment can be carried out periodically in order to monitor and evaluate AT landscape over time
2. **Policy and program design:** the information obtained from this assessment can support AT policy and/or program design and implementation by enabling countries to supply and provide appropriate, quality AT that is available and affordable to all. This assessment can be carried out periodically to monitor and evaluate AT policies and programs over time.

AT Capacity Assessment can act as a standalone tool. However, it can better inform the design of national action plans/programs when it is complemented by a household survey on population need for assistive technology (such as the WHO rapid need assessment tool for AT under development). The combined information between population needs and a system's capacity could better inform policy and program design in appropriately meeting population needs, particularly in relation to procurement and provision requirements.

Methodology

The assessment employed a four-stage process that was anchored by preparatory and review activities as described below.

Phase I - Planning: the assessment team conducted a desk review of grey and scientific literature on disability and assistive devices in Nigeria and reviewed relevant federal and state laws and policies that emanated from this literature search. The team then developed a list of public, private, and non-profit sector stakeholders in the assistive technology space in Nigeria. The resulting stakeholder map was vetted by the National Technical Working Group on Assistive Devices at the Federal Ministry of Humanitarian Affairs, Disaster Management, and Social Development (FMHADMSD). Interviews were scheduled with consenting stakeholders, and additional respondents were identified through a snowball technique during these interviews.

Phase II - Data Collection: The WHO AT Capacity Assessment Questionnaire and Interview Guide were adapted to the Nigeria context and served as the primary data collection tool in the country. In-person and telephone interviews were conducted with respondents using the tool, and when stakeholders preferred, they filled in the tool electronically and sent it to the team. Respondents also provided hard or electronic copies of relevant policies, laws, guidelines, reports, and data sets to the interviewers.

Phase III - Analysis: Information from interviews was entered into the ATA-C Excel tool, which organizes responses for each of the 6 domain areas of interest. Descriptive analyses of laws, insurance benefits packages, and annual reports were also conducted. A narrative review of the scientific and grey literature was also completed for the assessment. Data from various agencies, not-for-profits, and companies were also analyzed as part of the assessment.

Phase IV - Stakeholder Workshop: In order to review and validate the findings from the field interviews, FMHADMSD hosted a workshop of 56 stakeholders from across the country. Various government agencies including the Ministries of Finance, of Science and Technology, of Education, Medical Rehabilitation Therapists Board of Nigeria, under the Ministry of Health, and Standards Organization of Nigeria participated in the event. Sub-national level staff from FMHADMSD also attended, as did local producers of assistive devices, non-profit organizations working on disability issues, the labor union, and the Disability Matters office at the Nigerian Presidency.

The scope of the assessment in Nigeria includes federal and state (sub-national) levels. At the federal level, the World Health Organization country office, government agencies, disability groups, and non-profits with national reach and mandates, participated in the assessment process. At the sub-national level, field visits were made to private sector distributors and service providers in Lagos state, and AT service providers and producers were reached via telephone or during their visits to the Federal Capital Territory. Preparatory activities for the assessment include meetings with the WHO and UNICEF country office focal persons on AT and formal communications to government agencies. Assessment review activities such as the drafting and review of the assessment report was completed with the support of FMHADMSD NTWG members and participants of the Stakeholder Workshop.

The scope of 15 products covered in this assessment is available in the Annex to this report. These products cover the five impairment areas of interest in this assessment: mobility, hearing, vision, communication, and cognitive. The assessment presents a wide perspective of capacity across each of the impairment areas at a systems-level, and generally provides the highest administrative level data were available.

Nigeria's Capacity in Assistive Technology

1. Data and Information Systems related to Assistive Technology

With an estimated population of 202 million in 2020 (World Bank), Nigeria is the most populous country in Africa. The World Health Organization estimates that 25 million people with disabilities (15% of the population) live in Nigeria, accounting for about a third of the number of persons with disabilities in Africa. Recent data on Nigeria's demographic profile is unavailable as the country's last census was conducted in 2006. However, poor health indices coupled with a poverty rate of 46%[2], human development index ranking of 156[3], and 5% of the 2019 federal budget allocated to health[4] contribute to the life expectancy of 53 years[5].

Since 2009, an estimated 20,000 people have been killed and 2 million displaced as a result of insurgency and counterinsurgency in northeastern Nigeria due to the conflict between the Islamic sect, Boko Haram, and the Nigerian armed forces[6]. Following the start of the crises, communal clashes due to limited resources have equally worsened the living conditions within the region, and the ensuing violence is thought to have significantly increased the rate of functional disability in northeastern Nigeria[7], prompting the establishment of a new Ministry in 2019, the Ministry of Humanitarian Affairs, Disaster Management and Social Development.

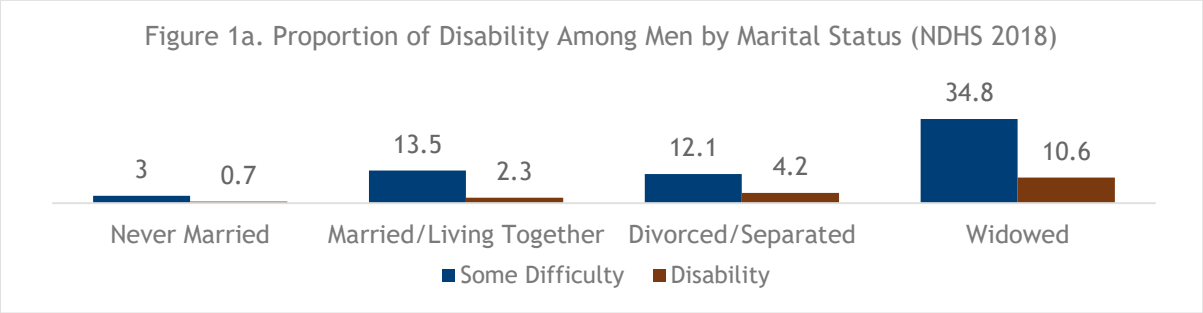
Road traffic accident injuries in Nigeria are also thought to contribute significantly to the incidence of functional disability in the country[8]. Although post-road traffic disability statistics are hard to come by, the Nigerian Federal Road Safety Corps recorded a similar number of road traffic injuries nationwide in the first three quarters of 2017 and 2018, 23,745 and 23,814 respectively[9,10]. A 2009 study in Nigeria estimated road traffic injury in Nigeria to be 41 per 1,000 people[11]; WHO estimates the incidence in Africa injury to 92.2 per 100,000 people[12].

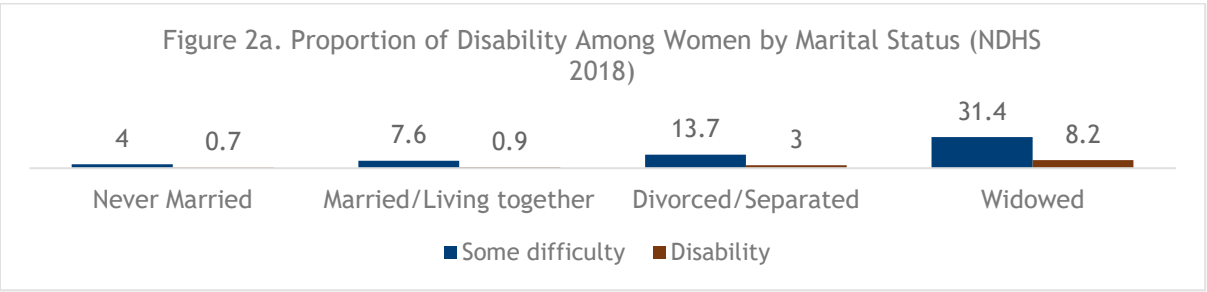
Generally, in Nigeria, reliable data on assistive technology (AT) is sparse. The country currently does not have information systems that collect data on AT. While the Medical Rehabilitation Therapists' Board and the Optometrists and Dispensing Opticians Regulatory Board hold data on the number of registered medical rehabilitation and optometry clinics, laboratories, licensed providers, and accredited services that they provide, information on the number of products provided and the number of current AT users are not captured, nor is there a registry of AT products provided.

Data on health conditions or functional limitations that may require AT are also not routinely collected in Nigeria. In 2011, a national baseline survey on persons with disabilities that covered 10,648 households across the 36 states and the federal capital territory, and contained data on functional disability, was deemed to have been significantly flawed in how it identified persons with disabilities[13]. Following discussions with organizations for persons with disabilities, the survey, funded by the Millennium Development Goals Office, and coordinated by the Federal Ministry of Women Affairs and Social Development, was retracted. The National Bureau of Statistics has also conducted a baseline survey on children with disabilities in Nigeria that covered 19 of the 36 states in the country; however, the results of this survey have not been published[14].

While hospital paper charts may capture information on functional disabilities such as hip fracture cases or lower limb amputations, such data do not feed into a national or sub-national registry. Nonetheless, at the Federal Ministry of Health, the Non-Communicable Disease (NCD) Unit amidst funding constraints, is currently supervising the roll-out of the STEPwise approach to non-communicable disease risk factor surveillance (STEPS) survey to determine the burden of NCDs in Nigeria. The results of the survey would provide data on health conditions that may require AT including stroke and diabetes.

Notwithstanding, the 2018 Nigeria Demographic and Health Survey (DHS) includes a disability module that is based on the Washington Group on Disability Statistics questions. The disability module focuses on six functional domains: seeing, hearing, communication, cognition, walking, and self-care, and provides basic information on disability among survey participants[15]. Seven percent of household participants reported having some level of difficulty in at least one domain, and 1% reported having a disability i.e. having a lot of difficulty or cannot function at all in at least one domain. Vision (difficulty seeing) and mobility (difficulty walking or climbing steps) impairments were the most prevalent disability among the household populations, accounting for 0.5% respectively of the respondents interviewed in each functional domain. Marital status for both men and women also appeared to be associated with disability. Divorced, separated, and widowed men and women had a higher prevalence of disability than single or married populations (See Figure 1a and 2a).





Figures 1a and 2a: Proportion of Disability Among Men and Women by Marital Status

Estimates from the literature suggest that 4.1% of the population (8 million people) have diabetes[16] and another 4.9% (9.6 million people) have dementia[17]. For eye conditions, secondary analysis of a national blindness and visual impairment survey conducted between 2005 and 2007 estimates that 2.14 million people in Nigeria have refractive error[18]. For developmental neurological conditions in children, cerebral palsy is thought to affect at least 700,000 children[19]. For neurological conditions in adults, the prevalence of multiple sclerosis is estimated at 6,901 as of 2016[20], and stroke prevalence is projected to be 6.7% (13 million people)[21]. Congenital abnormalities such as club foot were estimated to affect 9,084 people in 2017[22]. Prevalence of limb amputations as of 2007 were estimated 1.6 per 100,000 people[23].

In order to adequately quantify the need for AT in Nigeria, a national disability survey that establishes a baseline for the prevalence of functional disabilities in the country needs to be completed. The next national census, originally slated for 2016, potentially presents an opportunity to capture information about persons with disabilities in Nigeria using the Washington Group on Disability Statistics Short Set[24]. Should a baseline survey separate from the census be more feasible, organizations for persons with disabilities will need to be duly consulted prior to the start of the survey to ensure that persons with disabilities are adequately captured.

2. Stakeholder Landscape

The Federal government of Nigeria has created the foundational policy and legislative environment to improve access to assistive technology in the country. The Ministry of Humanitarian Affairs, Disaster Management and Social Development (carved out in 2019 from the Ministry of Women Affairs and Social Development) has the mandate to coordinate activities that improve the wellbeing of people with disabilities. In January 2019, the Ministry updated the *National Policy on Disability in Nigeria*, which includes implementation strategies for ensuring availability of assistive technology including through local producers. The President of Nigeria also assented to the Discrimination Against Persons with Disabilities Act (the Disability Rights Law) in the same month.

The Law calls for the establishment of a National Commission for Persons with Disabilities, which will consolidate the efforts of various government agencies with regards to service provision for persons with disabilities. Ahead of the establishment of the Commission, the National Technical Working Group (NTWG) on Local Production of Assistive Devices, chaired by the FMHADMSD, seeks to reduce the fragmentation of actions across various public sector agencies. The NTWG currently comprises of the Ministry of Science and Technology and the Nigeria Institute for Leather Science and Technology (NILEST) who are the only other public sector members in the group besides non-profit organizations that are implementing partners in the country. The Ministry of Science and Technology supports FMHADMSD with policy related to local production of assistive devices. The National Institute of Leather Science and Technology (NILEST) under the Ministry of Science and Technology, develops technologies and innovations for leather and leather product technologies including for diabetic and orthopedic footwear.

The National Eye Health Programme under the Department of Public Health at the Ministry of Health launched in May 2019, the Treatment Guidelines for Delivery of Child Eye Health Services in Nigeria. The guidelines cover various eye conditions, including low vision and refractive error, and prescription of lenses. The benefits package of the National Health Insurance Scheme, the federal government health insurance agency, is grossly inadequate for medical rehabilitation. In particular, the insurance covers up to 12 physiotherapy sessions per year as well as prescription eyeglasses and prosthetics.

Medical Rehabilitation Therapists Board of Nigeria (MRTB), the medical rehabilitation services regulator under the Federal Ministry of Health also has ongoing initiatives to improve research and practice for AT provision and access. In 2018, the Board accredited the first doctorate program for prosthetists and orthotists in Nigeria and developed the Annual Conference for Rehabilitation Professionals to provide a networking and information sharing platform for licensed service professionals and accredited assistive technology producers and distributors. MRTB currently regulates the training of 7 rehabilitation professions and accredits both public and private rehabilitation centers for safe practices.

The Optometrists and Dispensing Opticians Registration Board of Nigeria (ODORBN), equally under the Federal Ministry of Health, regulates the training and practice of optometrists and dispensing opticians in Nigeria. The Board also registers optometry clinics, ophthalmic and lens surfacing laboratories run by the vision professionals that it regulates. Beginning in March 2020, the Board will be instituting exams for optometrists and dispensing opticians to be registered to practice, in addition to the one-year compulsory internship with a practicing optometrist with a minimum of 5-years of professional experience.

The National Agency for Food and Drug Administration and Control (NAFDAC) is mandated to regulate medical devices, which include assistive devices. The NAFDAC List of Registered Medical Devices (2016-2019) includes orthoses[25], and its guidelines for registration of medical devices produced in the country

and those imported, are available on the agency's website[26,27]. Standards Organization of Nigeria (SON) also has an interest in developing specifications for assistive devices in-country.

While the government provides policy direction and service provision for improving AT access, its lack of financing of AT is a major gap in ensuring AT access in Nigeria. Procurement of AT through the public sector is in turn limited. Of the government agencies profiled in this scoping assessment, only the FMWASD procures AT; NILEST procures raw materials and AT components for local production of AT. FMWASD purchased a total of 398 talking calculators, walking sticks, and braille wristwatches asides from the 2,500 assistive devices it received in donations in 2018[28]. Generally, government procurement and donations focus on mobility aids, including wheelchairs, crutches, and prostheses, as well as vision aids such as guide canes. Such donations were often distributed without service. However, the MRTB Lagos headquarters provides medical rehabilitation volunteers to provide service along with donations, when the agency is informed.

The non-profit and private sectors fill in the financing and procurement vacuum left by the lack of investment and prioritization of AT in the public sector. The annual AT program budget for five non-profits alone totaled NGN216 million (~US$600k) compared to the NGN1 million (~US$2,700) public sector AT procurement budget that could be confirmed for this assessment. Generally, non-government sector stakeholders provide service with assistive devices, particularly if organizations for persons with disabilities are involved in the provision of the devices. Corporate donations often involve the distribution of products without service and are generally done on an ad hoc basis. Donations of assistive devices, particularly of wheelchairs and guide canes are also made by political contestants at federal and state levels during electioneering, and often without any accompanying service to assess their suitability to potential end-users or to fit them to beneficiaries.

A summary of the roles of key government and non-government stakeholders in AT Nigeria is provided in Table 1.

Table 1: Key government and non-government stakeholders in AT sector.

Entity name	Category	Lead role	Focus area(s) of AT	Key AT program
Federal Ministry of Humanitarian Affairs, Disaster Management and Social Development	Government	Policy, Financing, Procurement, Distribution, Advocacy	Mobility, Hearing, Vision, Cognitive	Support for local manufacturing of assistive aids and appliances
Federal Ministry of Youth and Sports	Government	Procurement, Financing, Distribution, Advocacy	Mobility	Para-athletics, amputee football, wheelchair tennis, wheelchair basketball, and sitting volleyball
Federal Ministry of Health	Government	Policy	Vision	National Eye Health Programme
			Hearing	Ear and Hearing Care Desk
Medical Rehabilitation Therapists Board of Nigeria	Government	Regulatory, Policy, Advocacy, Licensing & training of professionals	Mobility, Hearing Cognitive, Communication	International Conference of Medical Rehabilitation Professionals
Medical and Dental Council of Nigeria	Government	Regulatory	Mobility, Vision	Not applicable
Optometrists and Dispensing Opticians Registration Board of Nigeria	Government	Regulatory, Licensing & training of professionals	Vision	Not applicable
National Health Insurance Scheme	Government	Financing	Mobility, Vision	Not applicable
National Orthopedic Hospitals (Enugu, Kano, and Lagos)	Government	Service provision	Mobility	Not applicable
National Eye Centre, Kaduna	Government	Service provision	Vision	Not applicable
National Ear Centre, Kaduna	Government	Service provision	Hearing, Communication	Not applicable
Ministry of Science and Technology	Government	Policy	Mobility	Not applicable
Nigeria Institute of Leather Science and Technology	Government	Service provision	Mobility	Club Foot and Diabetic Footwear

Entity name	Category	Lead role	Focus area(s) of AT	Key AT program
National Agency for Food and Drug Administration Control (NAFDAC)	Government	Regulatory	Mobility, Hearing, Vision Cognitive, Communication	Not applicable
University Teaching Hospitals (Maiduguri, Ibadan, Abuja, Nnewi, Benin)	Government	Service provision; Training of professionals	Mobility, Hearing, Vision Cognitive, Communication	Rehabilitation Centers; Departments of Physiotherapy, Psychiatry, Otorhinolaryngology, Orthopedics, Occupational Therapy
Federal University of Technology (Minna, Jos, Owerri, Akure)	Government	Service provision; production of AT; training of professionals	Mobility	Not Applicable
Lagos State Office for Disability Affairs (LASODA)	Government	Policy	Mobility, Hearing, Vision, Cognitive, Communication	Not Applicable
Joint Association of Persons with Disabilities (JONAPWD) – FCT Chapter	Non-government, non-profit	Advocacy	Mobility, Hearing, Vision, Cognitive, Communication	Break the barrier
Christian Blind Mission (CBM International)	Non-government, non-profit	Advocacy, Distribution	Mobility, Vision	Seeing is Believing, Inclusive Eye Health
Daughters of Charity	Non-government, non-profit	Service provision	Mobility, Hearing, Vision, Cognitive, and Communication	Rehabilitation Centre Ossiomo, Edo State, Lindalva Inclusive school, Benin City
Down Syndrome Foundation	Non-government, non-profit	Advocacy, Service provision	Vision, Cognitive, and Communication	Not applicable
Hopes on Wheels Initiative	Non-government, non-profit	Advocacy, Service provision	Mobility	Not applicable
International Centre for Prevention of Deafness & Rehabilitation of Hearing Impaired Persons	Non-government, non-profit	Procurement, service provision	Hearing, Communication	Newborn Hearing (screening)

Entity name	Category	Lead role	Focus area(s) of AT	Key AT program
Irede Foundation	Non-government, non-profit	Financing, Procurement, Service, Advocacy	Mobility	Out on a Limb
Speech Pathologists and Audiologists Association of Nigeria	Non-government, non-profit	Advocacy	Hearing and Communication	Hearing Aid Fitting and Distribution
The Albino Foundation	Non-government, non-profit	Advocacy, Distribution	Vision	Eyecare Project
The Leprosy Mission Nigeria (TLMN)	Non-government, non-profit	Advocacy, Production of AT	Mobility and vision	TLMN Orthopaedic Project
MTN Foundation	Non-government, non-profit	Financing, Procurement, Distribution, Advocacy	Mobility and vision	MTN Foundation Disability Support Project MTN Foundation Hearing Aid Support Project
Theseabilities Foundation	Non-government, non-profit	Advocacy	Mobility, Hearing, Vision, Cognitive, Communication	Not applicable
Tolaram Foundation	Non-government, non-profit	Service provision	Mobility	Ishk Limb Centre
OrthoEx	Non-government, for-profit	Procurement	Mobility	Not applicable
Ageless Physiotherapy	Non-government, for-profit	Service provision	Mobility	Not applicable
Neuromuscular Rehabilitation Services	Non-government, for-profit	Service provision	Mobility	Right Chair at Right Time
BSA Speech and Hearing Centre	Non-government, for-profit	Service Provision, Procurement	Hearing and Communication	Hearing Aid Mission

Table 1 is not an exhaustive list of key stakeholders in AT in Nigeria, a limitation of the assessment. For instance, details on private sector AT distributors such as Philips Pharm Nigeria in Lagos and Meequip Extras Nigeria Ltd in Kano, which have established relationships with key public sector specialist hospitals in the country are not captured in the table. There was also limited access to private sector service providers such as Cedarcrest Prosthetic Center and to private sector AT outfits outside Lagos and Abuja, such as Ability Prosthetic Nigeria in Ibadan. Stakeholders interviewed for these assessments also provided suggestions for additional stakeholders to be reached; however, engagements with these stakeholders were limited due to time constraints. Additionally, given the fragmented nature of the AT provision across the country and the limited enforcement of the few regulations that exist in the sector, it is possible that there are actors in the space who were not captured in the assessment. Forty-nine (49) local producers of assistive devices were captured in the FMHADMSD's 18-state assessment; these small-scale producers are not listed in the table above, but together fill in a significant gap for populations who are not reached by larger-scale producers and distributors or non-profit organizations.

3. Policy and Financing

Nigeria ratified the Convention on the rights of persons with disabilities in 2007 and signed the optional protocol in 2010. Additional constitutional arrangements have also been made in Chapter two of the 1999 Federal Constitution which states that the Government is mandated to ensure the welfare of all citizens with emphasis on those that live with disabilities. Additionally, Chapter 4 of the constitution mandates the Government to protect the rights of all citizens. In 2019, the Federal Government enacted the "Discrimination against persons with disabilities (Prohibition) Act"- a 10-part act which aims to comprehensively address the needs of persons living with disabilities. The Law specifically highlights the need for accessibility of physical structures using accessibility aids and assistive devices to persons with disabilities and provides a transitory period of 5 years within which all public buildings and structures will have to be renovated to be more accommodating of persons with disabilities. Part 7 of the Law also stipulates that a National Commission for Persons with Disabilities be established under the direct supervision of the Presidency.

Currently, FMHADMSD is charged with the development of policy direction for people living with disabilities and has developed a National Policy on Disabilities which serves as a guideline for the development of interventions aimed towards people with disability and will be a member of the governing council for the National Commission for Persons with Disabilities when it is established.

The Federal Ministry of Health currently does not operate a desk, unit or department that focuses on disabilities and assistive technology. However, through the Gender, Adolescent/School Health and Elderly Care (GASHE) unit, the Ministry launched a National Policy on Sexual and Reproductive Health and Rights of Persons with Disabilities in 2018 which prioritizes the need to ensure increased inclusivity of AT in health and social welfare service packages. Additionally, social security and social insurance are on the concurrent legislative list Health, giving States the autonomy to prioritize these as they deem necessary and at their own pace. Policymaking in this regard is therefore decentralized. Currently, only 6 of the 36 States have passed their disability laws with most of such State enactments predating the National Law. In terms of the provisions made by these laws, there is largely unison for the provision of accessibility aids, assistive devices and universal design of basic amenities without need of adaptation where possible.

Although now a law, it took over a decade of advocacy by Civil Society Organizations and pressure groups for the Government to enact the Discrimination against persons with disabilities (Prohibition) Act signifying significant time lags between the drafting of the bill and its enactment which has implications

on policy implementation. Additionally, while at the National level, the Ministry of Women Affairs and Social Development is charged with policy making for persons living with disabilities, this may vary at the State level. For instance, in Lagos State, the agency charged with the responsibility of handling affairs pertaining to disabilities is situated under the State Ministry of Youth and Sports and not the Ministry of Women Affairs and Social Development. There is therefore the potential for policy misalignments, lack of accountability and poor coordination of interventions given the different lines of reporting and supervision.

Funding for assistive technology in Nigeria is generally low and disaggregated across various Ministries and Government agencies. Low funding for AT is exacerbated by limited fiscal space, as Nigeria's general government revenue as a percentage of GDP is significantly lower than the rest of Sub-Saharan Africa and other growing economies at 6.8%[29] The health sector is primarily funded by out-of-pocket spending (70% or more of total health expenditure) with an ensuing 25% of the population incurring catastrophic health expenditure. There are therefore no social safety nets for the poor, vulnerable and disabled who constitute a tangible proportion of the population. While the Total Health Expenditure (THE) per capita in the country is $97, only $11 of this is government-financed. Non-governmental organizations fund programs aimed at the provision of AT however significant funding gaps still prevail. It is however noteworthy that although the Ministry of Health does not have a direct budget line for disabilities and assistive devices, there are budgetary allocations made by the Ministry of Health to strengthen assistive service provision (please see below)

Low public funding is supplemented by user fees, not only forcing the poor to make difficult trade-offs but also result in the poor never seeking care in the first place. Addressing user fees, alongside improvements in service coverage, is critical to improving access and in turn addressing the vast gap between supply and demand of assistive technology in Nigeria. In addition, Nigeria commissioned the National Health Insurance Scheme (NHIS) in 2000 however till date, the NHIS has experienced significant operational and design challenges in its inability to effectively expand coverage to the informal sector and vulnerable groups which jointly constitute over 70% of Nigeria's population- till date, NHIS coverage remains below 10% of the total population with its enrollees predominantly being civil servants/formal sector employees[30]. The Agency also has many disjointed schemes with different benefit packages that do not comprehensively provide assistive devices. The NHIS was also set up as a voluntary scheme, leading to low enrollment rates. Increasingly, the Nigerian Government has made efforts to create an inclusive and enabling landscape especially for the informal sector and vulnerable groups. One of such efforts is the decentralization of health insurance such that all 36 States in Nigeria have been mandated to set-up State health insurance agencies and schemes. Although States have autonomy in the development of their benefit packages, there is unanimous lack of inclusion of assistive technology and devices in the benefits package across most State schemes.

The only benefits included by the NHIS are spectacles to the limit of NGN10,000 (US$27), prosthetics and walking sticks. Additionally, benefits packages vary considerably across the agency's different schemes of which vulnerable populations having the most basic services. For instance, community-based insurance schemes tend to have benefits packages that are specifically tailored to the community's epidemiological context and financial capacity of enrollees. Although there is currently low consideration of AT in benefits packages across the country, there are opportunities to support the NHIS and State Health Insurance Agencies to conduct a costing exercise of an AT inclusive benefits package. The National Policy on Sexual and Reproductive Health and Rights of persons with disabilities developed by the Federal Ministry of Health also prioritizes the inclusion of AT and rehabilitation services in community-based health insurance schemes which are developed and supervised by the National Health Insurance Scheme. A newly introduced pro-poor fund called the Basic Health Care Provision Fund will subsidize care for

vulnerable and rural groups however the basic minimum package of care for this fund does not include any assistive devices.

Public sector financing for assistive technology is decentralized with different ministries, government parastatals and agencies contributing varying amounts to interventions across health, education, sports, social welfare, and vocational rehabilitation. Limited information is available about related financial flows and the execution of these projects. Additionally, limited information is available funds will be released and projects, completed.

- The **Ministry of Health** has the following 2019 budgetary allocations for assistive technology:
    - Medical Rehabilitation therapy board: N461m
    - National Orthopedic Hospital in Lagos, Kano and Enugu: N3.851B, N2.694B and N2.909B respectively
    - National eye center, Kaduna: N2.059B
    - National ear center, Kaduna: N1.28B
    - Free eye check-up and provision of eyeglasses in Ekiti State: N20m
- **The Ministry of Youth and Sports** has 2019 budget lines specifically for the implementation of program and skills acquisition for persons with disabilities. Some of these include mentoring and life enhancement programs for physically challenged youth at **N28.5M** and skills training for vulnerable youth at **N47.5M**
- **The Ministry of Women Affairs and Social Development** has a directorate of rehabilitation which has operationalized a Technical Working Group on Assistive Devices. Some 2019 budget allocations made for persons with disabilities and assistive technology through the Ministry of Women Affairs and Social Development include the following:
    - Domestication of the UN Conventions on the Right: N40m
    - Bulk purchase of aids and appliances for people with disabilities and older persons: N70m
    - Upkeep of the trainees and strengthening and coordination programs at the following social welfare, rehabilitation, and other centers: N100m
    - Counterpart funding for the establishment of National rehabilitation Institute and resource center, Abuja: N25m

Other government agencies including the Central Bank of Nigeria and Nigeria National Petroleum Corporation have also recently procured assistive devices for persons with disabilities. The assessment team was reliably informed of these activities. However, information on the scope of their donations as part of their corporate social responsibility is currently not publicly available. Reviews of the 2018 and 2019 corporate social responsibility reports of both agencies did not include these activities.

A summary of Government financing availability for assistive technology can be seen in Table 2.

Table 2: Government financing for assistive technology.

Ministry/Agency	Scheme/program name	Assistive product covered	Total budget and/or expenditure (in the most recent fiscal year)
Federal Ministry of Health*	NA	Spectacles	N20,000,000
Federal Ministry of Women Development and Social Development	NA	Unspecified	N70,000,000
Federal Ministry of Youth and Sports**	NA	Unspecified	N76,000,000
Nigeria Institute for Leather Science and Technology	Club foot and diabetic footwear	Club foot and diabetic footwear	N1,000,000

**Indicates that this program was run in 1 of the 36 States in Nigeria and not across all States.*

***Indicates funding for mentoring and training for people with disabilities.*

4. Assistive Products and Procurement Systems

At present, Nigeria does not have a national list of approved medical devices or assistive products. However, a list of registered medical devices housed by NAFDAC includes some orthoses[31]. Regulation of assistive devices in Nigeria is currently fragmented across various government agencies. NAFDAC has the legal mandate to regulate medical devices in the country, which based on the NAFDAC Act Cap N1 laws of 2014, includes assistive devices[32]." Although medical device classifications are currently not available in-country, guidelines for the registration and listing of medical devices are clearly outlined on the agency's website. Import controls are conducted by NAFDAC's Ports Inspection Directorate, and post-market controls by the Pharmacovigilance/Post Marketing Survey (PV-PMS) Directorate. The conformity assessment body for medical devices in Nigeria is the Standards Organization of Nigeria (SON), which is willing to provide support for a technical committee on assistive devices for persons with disabilities. Clinical investigation controls of medical devices on the other hand are currently conducted independently by MRTB and ODORBN, which also independently handle the registration and accreditation of medical rehabilitation and optometry establishments, respectively. There is an opportunity to strengthen collaboration between these agencies to effectively regulate assistive devices in the country.

At the federal level in Nigeria, public sector procurement occurs through procurement departments or units at Ministries that interface with user departments, which create specifications for tenders. Interactions between the procurement and user departments are extremely limited, by historical precedence, and user departments have limited visibility into the procurement processes within their government agencies. The Bureau of Public Procurement is the regulatory authority established by the Public Procurement Act 2007 that is responsible for monitoring and oversight of public procurement at the federal level. At the state level, public procurement is governed by the laws of each of the 36 states, where those laws may be established. Consequently, each state is autonomous in its public procurement practices.

Data on procurement volumes for assistive devices in Nigeria are generally limited. Public procurement of assistive devices is fragmented across national and state levels, and often occurs on an ad hoc basis.

However, analyses of interviews with key stakeholders in both government and non-government sectors suggest that the majority of assistive devices are procured through bulk purchasing. Prostheses, therapeutic footwear, portable ramps, and handrails tended to be individual purchases based on need. Suppliers were generally chosen by the largest procuring entity through open tenders based on available funding or individual purchase based on need. The consensus among stakeholders was also that the supplies and services necessary to keep the procured product in good working condition were generally available in the country.

In Nigeria, private supply of assistive devices is marked by huge variability in price and quality. Different players dominate different price segments of the market. For instance, for prostheses, the high-end market consists primarily of distributors for European or North American suppliers such as Ottobock. The high functionality prostheses in this category of the market use more durable materials and feature at price points of US$3,000 to US$4,700. The mid-tier market for prostheses includes suppliers from India such as Jaipur Foot, which supplies the Ishk Tolaram Foundation that has donated more than 10,000 prostheses in Nigeria in the last decade. The mid-tier market also includes distributors for unbranded prostheses from China as well as locally assembled prostheses that use a combination of imported and locally sourced materials. Prices range from US$100 to US$695 at this price point. At the low end of the market, local manufacturers that use 100% locally sourced materials including leather, piping, plaster of Paris, bandages, and resin, dominate the market. The low-cost structure of these manufacturers enables them to provide their products to customers on the demand. Pricing varies among these local businesses but is assumed to be available at US$2-15.

Table 3: Supply landscape for assistive products in Nigeria.

Product category	Primary supplier/s	Approximate cost per unit (local currency)	Exist through donation	Primary donor/s	Annual volume donated
Canes/sticks	Multiple players including bone setters, carpenters and other artisans	N5k-N15k	Yes	Japanese International Cooperation Agency (JICA) MTN Foundation	1500 Not available
Crutches, axillary/elbow	Multiple players including bone setters, carpenters and other artisans	N3k-N8k	Yes	JICA MTN Foundation	1500 Not available
Walking frames and rollators	MAARDEC	N15k-N25k	No	N/A	N/A
Orthoses	OrthoEx, Meequip Extras Nigeria Ltd, Philips Pharm Nigeria,	N6k N100k – N700k	Yes	MTN Foundation	Not available
Prostheses	OrthoEx, Chrisville, IfeanHealth	N36k-N220k N600k-N2M	Yes	Ishk Tolaram Foundation	1000
Therapeutic footwear: diabetic, neuropathic, orthopedic	NILEST, OrthoEx	N4k-N5k N10-N150k	Unknown	Not applicable	Not applicable
Wheelchairs, manual for active use	MAARDEC, Beautiful Gate	N15k-N150k	Yes	MTN Foundation[33] Rotary International	450 52 (donated in 2019)

Product category	Primary supplier/s	Approximate cost per unit (local currency)	Exist through donation	Primary donor/s	Annual volume donated
				Latter Day Saints Charity[34]	500 (donated in 2018)
Club foot braces	NILEST, TLMN	N5k-N15k	Yes	TLMN Club Foot Solutions[35]	1,500 4,500
Wheelchairs, manual assistant-controlled	MAARDEC	N75K-N1.5M	Yes	MTN Foundation Rotary International Latter Day Saints Charity	Not available
Ramps, portable	Multiple players including carpenters and other artisans	N30k-N100k	No	Not applicable	Not applicable
Handrails/grab bars	Multiple players including medical rehabilitation professionals, carpenters and other artisans	N2,500-N15k	No	Not applicable	Not applicable
Magnifiers, optical	Unknown	N4,000-N15k	No	Not applicable	Not applicable
Spectacles	Essilor	5k-7k (for basic eyeglasses)	Yes	Multiple funders, including one-off donations such as those done by First Bank[36]	

Product category	Primary supplier/s	Approximate cost per unit (local currency)	Exist through donation	Primary donor/s	Annual volume donated
		10k-20k (for high-powered lenses and frames)			10,000
White canes	Multiple players	N5k-N15k	Yes	MTN Foundation	Not available
Braille equipment	Unknown	N300k-N1.8M	Yes	MTN Foundation	Not available
Magnifiers, digital hand-held	Unknown	N18k	Yes	Unknown	Unknown
Watches talking/touching	Unknown	N7,000	Yes	MTN Foundation	Not available
Hearing aids (digital) and batteries	Oticon, Widex, Starkey	Hearing aids: N180k-N200k & Batteries: N2k-N2,500	Yes	MTN Foundation[37] Starkey Hearing Foundation	1,500 (donated in 2018) 3,000

5. Human Resources

As of 2012, there were 38.9 doctors per 100,000 people, and 148 nurses and midwives per 100,000 in Nigeria[38] representing an increase from 30 doctors and 100 nurses per 100,000 six years earlier[39]. While the density of these healthcare workers is generally better than the Africa average, the availability of skilled health workers including those in allied health professions remains a challenge in Nigeria. For instance, there are approximately 1.6 optometrists per 100,000 people or 1 optometrist to 63,207 people. Additionally, there are approximately 0.10 dispensing opticians per 100,000 people or 1 dispensing optician to 1,006,793 people. For speech therapists, the ratio is one to 17 million people. Table 4 provides the distribution of medical rehabilitation professionals in Nigeria.

Table 4: Total number of AT-related workforce available in the country.

Workforce category	Total number[40, 41, 42]
Community health officers	5,986
Community health extension workers	71,876
Nurses and midwives	249,566
Physicians	65,759
Physiotherapists	4,979
Occupational therapists	129
Occupational therapist assistants	104
Speech therapists	57
Audiologists	22
Audiometric technicians	Unknown
Physiotherapy technicians	148
Prosthetics and Orthotics Assistants	80
Prosthetics and Orthotics	9
Opticians	1,220
Optometrists	4,896
Community-based rehabilitation workers	Unknown
Braille teachers	Unknown
Mobility orientation trainers	Unknown
Special teachers	224
Biomedical engineers	2,000
Wheelchair technicians	10

Table 5: Distribution of physician specialty across government and non-government sectors.

Physician specialty category	Total number
Ophthalmology	400
Otorhinolaryngology (Ears, Nose and Throat) [43]	181
Orthopedics[44]	350
Endocrinology[45]	200
Rehabilitation/Physiatry	Not available
Pediatrics[46]	492
Neurology (neurologists and neurosurgeons) [47]	100
Sports Medicine	Not available
Chiropractic medicine	Not available
Osteopathy	Not available

Nigeria currently has 27 accredited medical schools that produce medical doctors and dentists; 89 nursing/midwifery schools; and more than 50 faculties of health technology and health management that produce medical laboratory scientists, physiotherapists, radiographers, nutritionists, and health managers[48]. Of these, 11 universities offer 5-year bachelor's degrees in physiotherapy or medical rehabilitation for physiotherapists.

Obafemi Awolowo University in southwest Nigeria is the only institution accredited by MRTB to produce occupational therapists in the country. Two schools—Federal School of Occupational Therapy, Psychiatric Hospital, Lagos and the Institute of Health Technology University of Benin Teaching Hospital—offer 3-year diploma programs for occupational therapy assistants. The University of Ibadan is the only institution currently accredited for Speech Therapy/Clinical Audiology and offers a 6-year master's in education in Speech Pathology/Clinical Audiology. Nigeria Army School of Medical Science and the Nigeria Naval School of Health Science are accredited to produce 3-year diplomas for physiotherapy technicians; Federal College of Orthopaedic Technology in Lagos also produced Prosthetic & Orthotic Technicians. Seven schools are currently accredited by ODORBN to produce optometrists and 15 institutions for dispensing opticianry.

6. Provision of Assistive Products

Currently, in Nigeria, there are no service standards or standards of care on assistive product provision. The January 2019 National Policy on Disability in Nigeria provides high-level responsibilities for government ministries, departments, and agencies at federal, state, and local government levels; however, details on the execution of their activities are not available.

Clinical AT service provision

Treatment guidelines for mobility, communication, hearing, and cognitive impairments have not been developed or adopted in-country. However, the Federal Ministry of Health's treatment guidelines for the delivery of child eye health include guidelines for the prescription of lenses, rehabilitation of the blind child, low vision, and description and management of refractive errors. Although low vision devices for patients with reduced visual acuity are listed, limited information is available on standards of care on visual device provision. Information on dispensing spectacles for children, which could include

information on consideration for spectacle frames and appropriate lens material are currently not available[49].

Generally, referral mechanisms for AT service provision are ad hoc and informal. Private sector AT distributors and manufacturers that are co-located with orthopedic clinics or in close proximity to them, or with strong marketing teams that are more likely to have steady client flow from those clinics. In a survey of 49 local AT producers across 18 states in Nigeria, the majority of the manufacturers indicated that they had few referrals from clinics and lacked patronage from the government[50].

Occupational therapists and occupational therapy technicians practice in teaching, psychiatric, and orthopedic hospitals, as well as in army resettlement centers[51]. Peer-to-peer training and data collection on user impact of the assistive devices are carried out at facility level, and thus likely vary in scope and in how they are measured. Currently, there are 3 national orthopedic hospitals that conduct orthopedic and trauma surgery, and rehabilitation services including physiotherapy, prosthetic, and orthotic care among others (see Table 6). Additionally, there are 9 neuropsychiatric hospitals providing emergency and community psychiatry among other services. Nigeria also has an ear center and an eye center, both located in Kaduna in the northwest. Some federal hospitals such as the University College Hospital, Ibadan also provide AT, and in 2019 reported providing 80 assistive products to patients. Aside from the federal specialty hospitals, an estimated 88 military hospitals also provide rehabilitation services for veterans (Table 7).

Non-clinical AT service provision

In addition to AT service provision in clinical settings, non-clinical facilities including those run by the social development and education sectors also provide these services in Nigeria. These facilities include rehabilitation centers, nursing homes, general education centers, schools for the blind, and schools for the deaf listed in Tables 8-12. Information on the number of assistive devices provided in these non-clinical centers are not available. However, Table 13 provides estimates of the total number of assistive devices provided in the non-governmental facilities interviewed as part of this capacity assessment. Again, the list of private facilities is not exhaustive but provides a snapshot of annual provision.

Informal AT service provision

In the informal rehabilitation sector in Nigeria, bonesetters play a significant role in rural and semi-urban areas, particularly for those who believe in the practice and for those who otherwise cannot afford fees at hospitals. The practice, which is passed on via oral tradition is not regulated by the government, although States like Lagos have Traditional Medicine Boards, which attempt to build a directory of practitioners in the State[52]. Stories abound however of the harm that that bonesetters' interventions have caused including cases of acute extremity gangrene in patients who patronized the bonesetters for treatment[53,54]. Typically, a bonesetter identifies a fracture area based on signs and symptoms of pain, swelling, loss of function, among others[55]. However, the services of a radiographer are not employed to confirm the diagnosis; the bonesetter then proceeds by massaging and manipulating the bones in an attempt to restore the alignment of the bones at the site of the fracture[56]. Often the patient experiences excruciating pain and is forcefully held down by family members or an apprentice. A herbal tincture, a mixture of herbs and gin may given to the patient as an analgesic. Copious amounts of the herbal mixture is applied to the fracture area and a splint made from raffia palm, plywood and hard cardboard, and a bandage is tied tight to hold the splint in place. The patient is advised to reapply the bandage and ointment every 2-3 days[57].

Table 6: Clinical AT Service Provision in Specialty Hospitals at Tertiary Level in Nigeria.

Name of service provider	AT Area
National Orthopedic Hospital Enugu	Mobility
National Orthopedic Hospital Kano	Mobility
National Orthopedic Hospital Lagos	Mobility
National Ear Centre Kaduna	Hearing
National Eye Centre Kaduna	Vision
Federal Neuro-psychiatric Hospital Ogun	Cognitive
Federal Neuro-psychiatric Hospital Lagos	Cognitive
Federal Neuro-psychiatric Hospital Edo	Cognitive
Federal Neuro-psychiatric Hospital Calabar	Cognitive
Federal Neuro-psychiatric Hospital Enugu	Cognitive
Federal Neuro-psychiatric Hospital Kaduna	Cognitive
Federal Neuro-psychiatric Hospital Maiduguri	Cognitive
Federal Neuro-psychiatric Hospital Kwara	Cognitive
Federal Neuro-psychiatric Hospital Sokoto	Cognitive

Table 7. Military Hospitals providing AT services.

S/N	NAME OF HOSPITAL	LOCATION	SECTOR
1.	Defense Headquarters Medical Centre	Abuja	Public
2	063 Nigerian Airforce Base Hospital	Abuja	Public
3.	6 Battalion MRS Ibagwa, Abak	Akwa Ibom	Public
4.	302 Medical Reception Station	Onitsha	Public
5.	161 Nigerian Airforce Hospital	Makurdi, Benue	Public
6.	7 Division Hospital Maiduguri	Borno	Public
7.	Nigerian Navy Hospital Calabar	Cross River	Public
8.	Nigerian Navy Hospital Warri	Delta	Public
9.	Military Hospital Benin	Edo	Public
10.	82 Division Hospital	Enugu	Public
11.	34 Brigade Medical Centre Owerri	Imo	Public
12.	44 Nigerian Army Reference Hospital Kaduna	Kaduna	Public
13.	461 Nigerian Airforce Hospital Kaduna	Kaduna	Public
14.	Armed Forces Specialist Hospital Kano	Kano	Public
15.	661 Nigerian Airforce Hospital Ikeja	Lagos	Public
16.	Nigerian Navy Reference Hospital Ojo	Lagos	Public
17.	68 Nigerian Army Reference Hospital Yaba	Lagos (MRTB)	Public
18.	Military Hospital Lagos (Ikoyi)	Lagos	Public
19.	Obisesan Naval Medical Centre Apapa	Lagos	Public
20.	2 Division Hospital Ibadan	Oyo	Public
21.	563 Nigerian Airforce Hospital Jos	Plateau	Public
22.	3 Division Hospital Jos	Plateau	Public

S/N	NAME OF HOSPITAL	LOCATION	SECTOR
23.	Military Hospital Portharcourt	Rivers	Public
24.	Naval Medical Centre Onne	Sokoto	Public
25.	1 Brigade Medical Centre Sokoto	Sokoto	Public
26.	Guards Brigade Medical Centre	Abuja	Public
27.	1 Division Hospital Kaduna	Kaduna	Public
28.	Jaji Cantonment Medical Centre,	Jaji, Kaduna	Public
29.	Nigerian Army Depot Medical Centre, Zaria	Kaduna	Public
30.	11 Field Engineering Regiment Medical Reception Station, Bassawa-Zaria	Kaduna	Public
31.	3 Brigade Medical Centre, Bokavu	Kano	Public
32.	73 Battalion Medical Reception Station, Janguza	Kano	Public
33.	15 Field Engineering Regiment Medical Reception Station, Topo, Badagry	Lagos	Public
34.	12 Field Engineering Regiment Medical Reception Station, Ijebu-Ode	Ogun	Public
35.	108 Nigerian Air Force Medical Centre	FCT	Public
36.	117 Guard Battalion	Keffi	Public
37.	130 Battalion M R S – Ogoja	Cross River	Public
38.	13 Brigade Medical Centre – Calabar	Cross River	Public
39.	195 Battalion M R S – Agenebode	Auchi, Edo	Public
40.	22 Brigade Medical Centre	FCT	Public
41.	231 Tank Battalion Nigerian Army (Tk Bn Mrs Biu)	Maiduguri, Borno	Public
42.	245 Recce Battalion M R S – Ikom	Abak, Akwa Ibom	Public
43.	2 Brigade Medical Centre – Port Harcourt	Rivers	Public
44.	303 F T S Medical Centre	Kano	Public
45.	33 Artillery Brigade Medical Centre	Bauchi	Public
46.	345 Aeromedical Hospital	Kaduna	Public
47.	345 Nigerian Airforce Hospital	Kaduna	Public
48.	347 Nigerian Air Force Hospital	Plateau	Public
49.	349 Nigerian Air Force Hospital	FCT	Public
50.	3 Battalion N M R S – Warri	Delta	Public
51.	3 Division Military Hospital Jos	Plateau	Public
52.	445 Nigerian Air Force Hospital	Ikeja, Lagos (MRTB)	Public
53.	45 Nigerian Airforce Hospital	Makurdi, Benue	Public
54.	4 Battalion M R S	FCT	Public
55.	6 Battalion M R S – Abak	Okrika, Rivers	Public
56.	73 Battalion M R S – Elele	Ahoada, Rivers	Public
57.	81 A M G Medical Centre	Benin City, Edo	Public
58.	81 Division Hospital	Ikoyi, Lagos	Public
59.	82 Division Military Hospital Abakpa	Enugu	Public

S/N	NAME OF HOSPITAL	LOCATION	SECTOR
60.	97 Sog Medical Centre N A F Base – Port Harcourt	Rivers	Public
61.	99 Air Combat Training Group Medical Centre Tunga	Sokoto, Niger	Public
62.	A H Q Clinic Abuja	FCT	Public
63.	Airforce Hospital Garki 1	FCT	Public
64.	Armed Forces Specialist Hospital	Kano	Public
65.	Defense Intelligence Agency – Asokoro	FCT	Public
66.	D H Q Medical Centre – Mogadishu	FCT	Public
67.	Guards Brigade Medical Centre Yakubu Gowon Barracks	FCT	Public
68.	Military Hospital (Jibowu)	Lagos	Public
69.	Military Hospital	Oyo	Public
70.	Military Hospital – Port Harcourt	Rivers	Public
71.	Military Hospital – Yaba	Lagos	Public
72.	Ministry of Defense Staff Clinic	FCT	Public
73.	M O D Clinic – Abuja	FCT	Public
74.	N A F Medical Centre Air Force Comp Sec School – Uyo	Akwa Ibom	Public
75.	N A F Medical Centre N A F Station – Calabar	Cross River	Public
76.	Naseme M I R – Auchi	Edo	Public
77.	Naval Medical Centre, Victoria Island	Lagos	Public
78.	N D C Medical Centre	FCT	Public
79.	Nigerian Airforce Medical Centre,	Benin City, Edo	Public
80.	Nigeria Naval Hospital Borikiri	Port Harcourt, Rivers	Public
81.	Nigerian Naval Medical Centre	Sapele, Delta	Public
82.	Nigerian Naval Reference Hospital Share – Satellite Town	Lagos	Public
83.	Nigerian Navy Hospital	Calabar, Cross River	Public
84.	Nigerian Navy Hospital	Warri, Delta	Public
85.	Nigerian Navy Shipyard	Port Harcourt, Rivers	Public
86.	Sick Bay F O B – Ibaka	Eket, Akwa Ibom	Public
87.	Sickbay N N S Pathfinder	Port Harcourt, Rivers	Public
88.	S & T M R S	Benin, Edo	Public

Table 8: Non-Clinical AT Service Provision in Rehabilitation Centers in Nigeria.

S/N	NAME OF REHABILITATION CENTER	LOCATION	SECTOR	FOCUS
1.	Tranquil and Quest Rehab Centre	Lagos	Private	Mental and Addiction
2.	Okwakanma Local Rehab Centre	Enugu	Private	Not applicable
3.	Amaudo Itumbauzo	Bende, Abia	Private	Mental
4.	Kingsley Rehab Centre	Lagos	Private	Not applicable
5.	Rehabilitation Centre for Disabled, Old and Tramps	Awka, Anambara	Private	Physical

6.	Bauchi Rehabilitation Centre	Bauchi	Public	Not applicable
7.	Kaduna Rehabilitation Centre	Kaduna	Public	Not applicable
8.	Enugu Rehabilitation Centre	Enugu	Public	Not applicable
9.	Ibadan Rehabilitation Centre	Ibadan	Public	Not applicable
10.	Lagos Rehabilitation Centre	Lagos	Public	Not applicable
11.	Sokoto Rehabilitation Centre	Sokoto	Public	Not applicable
12.	St Joseph Rehabilitation Centre	Ikot Ekpene-Abak Rd	Private	Substance abuse
13.	Centre for Citizens with Disabilities	Lagos	Private	Physical
14.	Spinal Cord Injuries Association	Lagos	Private	Physical
15.	St Martin's Rehabilitation Centre	Badagry	Private	Not applicable
16.	Grotto of The Immaculate Heart of The Blessed Virgin Mary	Enugu	Private (faith-based)	Drug addiction
17.	A & D Referral Services	Lagos	Private (faith-based)	Addiction
18.	Eruobodo House	Lagos	Private	Physical and Mental
19.	Christ Against Drug Abuse Ministry	Lagos	Private (faith-based)	Drug addiction
20.	Wellpath physiotherapy and wellness centre	Lagos	Private	Physical
21.	Wonder Life Mental Rehabilitation Centre	Akwa Ibom	Private (faith-based)	Mental
22.	Ibrahim Sani Abacha Vocational rehabilitation centre	Maiduguri	Private	Vocational

Table 9. Nursing homes providing AT services.

S/N	NAME OF NURSING HOME	LOCATION	SECTOR
1.	Rockgarden Homes	Lagos	Private
2.	Alpha Nursing Agency	Lagos	Private
3.	Movdi	Abuja	Private
4.	Faith land nursing home	Lagos	Private
5.	God's Care Maternity & Nursing Home	Lagos	Private (faith-based)
6.	Courtland Luxury Villa	Lagos	Private
7.	Hopeville Estate	Lagos	Private
8.	Plan B Home Nursing Agency	Lagos	Private
9.	Rossetti Care Ltd	Ibadan	Private
10.	Jericho Nursing home	Ibadan	Private

Table 10. General Education Centers (serving blind students) and Schools for the Blind.

S/N	NAME OF SCHOOL	LOCATION	SECTOR
1.	Special Education Centre	Anambra	Public
2.	Open Education Scheme	Benin, Edo State	Public

S/N	NAME OF SCHOOL	LOCATION	SECTOR
3.	Open Education Centre Scheme Maiduguri	Borno	Public
4.	Open Education Scheme	Calabar	Public
5.	Special Education Unit c/o H. E. A. School	Ibadan	Public
6.	Open Education Domestic Centre Building	Ibadan	Public
7.	Special Education Centre Orlu	Imo	Public
8.	Open Education Scheme For The Blind	Kaduna	Public
9.	St. Joseph's Blind Centre	Obudu, Cross River State	Private
10.	School For The Blind Sudan Interior Mission	Kano	Public
11.	Kano School For The Blind	Kano	Public
12.	Katsina School For The Blind	Kano	Public
13.	Kwara State School For The Blind	Ilorin, Kwara State	Public
14.	Pacelli School For Blind Children	Lagos	Private
15.	Nigeria Farmcraft Centre For The blind	Lagos	Public
16.	St Joseph's Blind Centre	Cross River	Public
17.	Otukpo Blind Men's Workshop	Otukpo, Benue state	Public
18.	Ondo State School For The Blind	Ondo	Public
19.	Oyo State Blind Centre Ogbomosho	Oyo	Public
20.	Gindiri School for Blind children	Plateau	Public

Table 11. Schools for the handicapped.

S/N	NAME OF SCHOOL	LOCATION	SECTOR
1.	School for the Handicapped	Oyo	Public
2.	School for Handicapped Children	Ogun	Public
3.	Abuja School for the Handicapped	FCT	Public

Table 12. Schools for the Deaf.

S/N	NAME OF SCHOOL	STATE	SECTOR
1.	International Model School for the Deaf	Ebonyi	Public
2.	Demonstration Schools for Deaf Children	Kaduna	Private
3.	Wesley School for the Deaf, Surulere	Lagos	Private
4.	Ibadan Mission School for the Deaf	Oyo	Private
5.	Enugu Mission School for the Deaf	Enugu	Private
6.	Kwara School for the Deaf	Ilorin	Public
7.	Imo State School for the Deaf	Imo	Public
8.	International Model School for the Deaf	Enugu	Public
9.	The Plateau School for the Deaf	Plateau	Public
10.	Alderstown School for the Deaf, Skinn Road	Delta	Public

S/N	NAME OF SCHOOL	STATE	SECTOR
11.	Center for Supportive Services for the Deaf Unilorin	Kwara	Public
12.	Kebbi School for the Deaf	Kebbi	Public
13.	Abuja School for the Deaf	Kuje/FCT	Public
14.	National Association of the Deaf School for the Deaf	Abuja/FCT	Public
15.	Niger State School for the Deaf	Niger	Public
16.	Ibadan School for the Deaf	Oyo	Public
17.	Eruwa School for the Deaf	Eruwa	Public
18.	UMC Deaf Unit	Ibadan	To be confirmed
19.	Deaf Unit Methodist Grammar School	Oyo	Public
20.	Ijokodo High School, Deaf Unit	Oyo	To be confirmed
21.	Ogbomosho Grammar school deaf unit	Oyo	Public
22.	St. Francis' School for The Deaf	Benue	Private

Table 13. Non-government facilities providing AT services with annual estimates of AT provided.

NAME OF SERVICE PROVIDER	CATEGORY	LEVEL OF FACILITY	ESTIMATED ANNUAL NUMBER PROVIDED
Ageless Physiotherapy Clinic	Non-government for-profit	State	To be confirmed
Cedarcrest Hospital	Non-government for-profit	National	3,000
Leprosy Mission Nigeria Workshop, Minna	Non-government for-profit	National and State	1,500
Irede Foundation	Non-government not-for-profit	National	30
Neuromuscular Rehabilitation Services	Non-government for-profit	National and State	10,000
Daughters of Charity	Non-government for-profit	National	150-200
International Centre for Prevention of Deafness and Rehabilitation of Hearing-Impaired Persons	Non-government, not-for-profit stakeholder	National	1,800
Starkey Hearing Foundation	Non-government, not-for-profit	National	3,000
Mobility Aid and Appliances Research and Development Centre (MAARDEC)	Non-government, not-for-profit	National	1,000 plus

7. Assessment Limitations

As with many low and middle-income countries, limited data availability in the public sector in Nigeria presented a challenge to providing current statistics in this assessment. Additionally, where data was available, some challenges were encountered with their completeness. Data on the geographic spread of medical rehabilitation professions did not include all professions and information on whether the medical rehabilitation workforce in Nigeria practices in government or non-government sectors was not readily available. Moreover, access to public sector procurement information was especially limited, and the absence of such data visibility impeded a comprehensive understanding of trends in public sector procurement of AT.

The short timeframe available to complete the assessment also affected the extent of engagement with stakeholders in their workshops and clinics, particularly those who are based outside of the major cities of Lagos and Abuja. Potential bias in the stakeholders interviewed and reached is also a plausible limitation of this assessment. For instance, local producers who do not speak English were not reached through this assessment, even though some of them have established businesses in the AT sector.

Limited access to AT service providers also posed a challenge to this assessment. Aside from providers working in the mobility sector, service providers working in other areas of impairment, such as hearing and communication, were often reticent to share information about the services that they provide when visits were made to their clinics. This barrier may have been due to the lack of regulation in the AT sector, which could breed suspicion about enquiries about their work and scope of practice.

Sub-national efforts on AT financing, procurement, and provision were not extensively captured in this assessment. State governments such as Lagos, Kano, Ekiti, Plateau, and Bauchi that have established disability laws operate independently of the federal government agencies. Challenges were encountered in accessing data and information about the efforts of these states in the AT sector, and sometimes in identifying the right contact person with whom to engage. Moreover, given the decentralized structure of the social development sector in Nigeria, where state ministries of social development operate independently of the Ministry of Women Affairs and Social Development, information about any centers of excellence at the sub-national level was not available.

Analysis Results and Recommendations

Current Status of Country Capacity on AT

In order to systematically assess the AT sector across the six domains that were the focus of this AT capacity assessment, we adopted the AT decision framework developed by WHO and CHAI. The framework is designed to identify strengths and weaknesses in relation to the different components of the six domains of the AT sector. For each component, criteria were listed for a country's status to be one of three possibilities: present/functioning, needs strengthening, or not present. The rationale for assigning a particular status to Nigeria's landscape is outlined.

1. Data and Information System related to Assistive Technology

Component	Status	Rationale
1. Reliable information is collected to accurately estimate the need for assistive technology	Not present	Currently, the government of Nigeria does not have an information system that collects data on assistive technology.
2. Information is collected on the provision and utilization of assistive technology	Not present	An information system that can generate data regarding the utilization of AT is not present.

2. Stakeholder landscape

Component	Status	Rationale
1. Strong coordination among government entities for AT exists	Not present	Various Ministries, Departments, and Agencies concerned with AT and disability currently work in silos both at the federal and state level. There are limited inter-ministerial and inter-agency collaborations. The Commission for Persons with Disabilities which has been established. The board was inaugurated by the presidency in August 2020.
2. Strong coordination among non-government stakeholders under leadership of the government	Needs strengthening	The National Technical Working Group on Assistive Technology at the Ministry of Humanitarian Affairs currently includes two implementing partners. Additional partners and funders could be members of the group.

3. Policy and Financing

Component	Status	Rationale
1. Assistive technology has a legal framework	Needs strengthening	Nigeria has ratified CRPD and also has a legal framework for CRPD implementation, the 2019 Disability Rights Law. AT is mentioned in the law but it has yet to be implemented.
2. Unified national strategy for increased access to AT exist with clear roles and responsibilities and strong coordination among government entities for its successful implementation	Does not exist	The Federal Ministry of Humanitarian Affairs has been developing a national roadmap for local production of AT.
3. Government entities implement programs for AT with defined monitoring and evaluation plan	Needs strengthening	Federal and sub-national governments have programs for AT; however, generally, there is no monitoring and evaluation plan for these programs.
4. Sufficient government financing exists to support programs for AT	Needs strengthening	Financial resources to support programs for AT exist among government entities such as the Federal Ministry of Humanitarian Affairs where there is a budget line with attached allocated funds. However, the allocation is insufficient, resulting in gaps in AT. In Nigeria, donors including bilateral, foundations, and charities play a more significant financing role in AT.
5. National health financing scheme provides appropriate coverage for assistive technology	Needs strengthening	The national health financing scheme, NHIS, exists and includes some assistive products but gaps exist because a small range of products is covered and overall expenditure on AT and rehabilitation services is inadequate.

4. Assistive Products and Procurement System

Component	Status	Rationale
6. Assistive products are regulated	Need strengthening	There are multiple regulatory agencies for assistive products including NAFDAC, SON, ODORBN, and MRTB; however taken together, the regulatory structures and mechanisms are inadequate, lack clarity, and do not work effectively. Limited collaboration between these agencies and lack of compliance to regulation account for the ineffectiveness of the regulatory structures
7. Country has a national assistive product list or similar, with sufficient technical specifications	Not present	A national assistive product list does not exist, nor does a national list of approved medical devices. However, the list of registered medical devices is available through NAFDAC. No technical specifications for assistive products are available.
8. There is an established government procurement system for assistive technology	Not present	Government at federal and state levels procure a limited number of assistive products but they mostly rely on non-government actors including donations.
9. Assistive products are exempt from tax and duties	Needs strengthening	Many assistive products are not exempt from import duties.
10. Sufficient categories of assistive products on the assistive product list are available through government procurement	Not present	There is no national assistive product list in the country.

5. Human Resource

Component	Status	Rationale
11. Workforce related to assistive technology is sufficiently available	Needs strengthening	The full range of the rehabilitation workforce is available but in insufficient quantities. For example, there are too few audiologists, speech therapists, orthoses, prothesis and dispensing opticians to meet the demand for service.
12. Structures/resources to build or strengthen the capacity of the workforce in assistive technology is available	Needs strengthening	There are educational institutions in the country offering degrees, diplomas, and other courses. However only a limited cadre of the workforce, notably, physiotherapists, orthometric etc.

6. Provision of assistive products

Component	Status	Rationale
13. The provision of assistive products is guided by clear guidelines/standards	Not present	Guidelines/standards of assistive technology provision are non-existent. The quality of provisions of AT varies widely from one provider to another.
14. Assistive product service provision largely occurs in facilities within the governmental sector	Needs strengthening	Some assistive products are provided in the governmental sector, and gaps in service provision are filled by non-governmental actors.
15. Assistive product service provision is person-centered	Needs strengthening	User impact or user satisfaction or both is sometimes evaluated after providing assistive products but does not occur in a consistent manner. Evaluation of results are not systematically considered to improve the quality of services provided. Peer-to-peer training occurs on an ad-hoc basis and is largely driven by persons using assistive technology
16. Assistive product service provision is well-connected and coordinated	Not present	There is no mechanism to refer or connect users from one provider to another. Service provision is fragmented, poorly connected, and poorly coordinated.

Recommendations for Actions to Accelerate Access to AT

Overall

Establish an Assistive Technology program within the National Commission for Persons with Disabilities that coordinates all the actions to accelerate access to AT in Nigeria.

Data and information systems

Establish data and information systems that enable data-driven decision-making and inform stakeholders of requirements for in-country AT procurement and service provision

- Develop a national data collection plan with defined intervals on when data will be collected and how data will be used to inform procurement and service delivery
- Integrate disability and geriatric data into existing health and social welfare information systems where appropriate
- Develop and execute a robust strategic information plan to ensure that both governmental and non-governmental stakeholders in Assistive Technology are contributing data and information to the government-led system, and are well-informed of government's policies and guidelines with regards to AT procurement and service provision
- Conduct cross-zonal research studies by institutions that train rehabilitation personnel to improve affordability and accessibility to AT

Policy and financing

Strengthen a coordinated national effort for increased access to AT

- Develop a national roadmap for accelerating access to AT
- Develop a national priority assistive product list and determine priorities based on national needs
- Develop an inter-agency coordinating mechanism responsible for coordinating the implementation, monitoring, and evaluation of AT activities at various government entities at federal and state levels

Develop sustainable financing for AT procurement and provision

- Review national and state health insurance schemes for opportunities to expand AT provision coverage using cost lens and benefits optimization
- Identify innovative financing mechanisms for AT procurement
- Develop investment case for the inclusion of priority AT into the National Health Insurance Scheme (NHIS) as well as State and Community Health Insurance Schemes
- Determine the range of assistive products to be covered under NHIS and financed based on assessed need
- Develop a policy framework for monitoring available funds for AT

Stakeholder landscape

Establish an inclusive action-oriented multi-stakeholder platform for both government and non-government stakeholders

- Establish multi-sector coordinating mechanisms at national and state levels to coordinate AT procurement and service provision in the country
- Develop an AT stakeholder map, and monitoring and evaluation indicators to provide visibility on the scope and duration of all AT interventions in-country

Assistive products and procurement systems

Strengthen regulation and regulatory mechanisms for assistive products

- Establish a regulatory coordinating mechanism across various regulatory agencies including SON, NAFDAC, MRTB, and ODORBN
- Develop technical specifications for AT in Nigeria
- Include assistive products into the existing medical equipment list including the essential equipment lists at secondary and tertiary facilities
- Establish and maintain a register of certified assistive products

Strengthen public sector procurement processes for assistive products

- Train procurement officers and other relevant stakeholders on technical specifications for AT once developed
- Develop a systematic process for identifying AT need at the community level and create digital mechanisms for real-time visualization of aggregate country needs
- Review and adopt appropriate models for AT tender development including hybrid models (centralized and decentralized) of tender development and purchase
- Establish a transparent procurement process for AT that includes provisions for maintenance and spare parts
- Test models for product evaluation that include procurement teams and service experts

Quantify national need for AT based on user-need

- Adopt international best practices for quantification of national need based
- Develop supply chain mechanism for last-mile delivery of AT

Human resources

Strengthen capacity to develop workforce related to AT

- Develop curricula and materials for continuing education on provision of AT at different levels of the system
- Establish a center of excellence to provide training in collaboration with relevant stakeholders

Provision of assistive products

Develop in-service standards guiding the provision of assistive technology

- Form technical committee(s) to centralize standards and guidelines for AT service provision
- Implement plans for ensuring that service facilities are physically, cognitively, socially, and culturally accessible

Increase provision of assistive products in facilities within the governmental sector

- Strengthen assistive product service mapping across clinical and social sector facilities in the public sector
- Develop mechanisms to ensure access to and availability of assistive products from the national approved list

Strengthen person-centeredness within the assistive product service provision

- Include user impact, satisfaction surveys, and peer-to-peer training in national guidelines for assistive technology service provision
- Develop follow-up and mobile phone-accessible/online user tracking system or mechanism, including compliance and grievance mechanisms

Develop well-connected and coordinated assistive product service provision system

- Include assistive technology in referral mechanisms within the healthcare systems
- Map out referral system for assistive technology across approved clinical and social sector facilities in the public sector
- Conduct on-the-job and refresher trainings for service providers across health, social welfare, and education systems on assistive technology services and referral process

Appendix

Appendix A: List of individuals/organizations who participated in the assessment

ORGANIZATION	NAME
Ageless Physiotherapy Clinic	Abraham Oluwadamilare
Abuja Association of the Deaf	Haruna Mohammed
Beautiful Gate	Chief Ayuba Gufwan
BSA Speech and Hearing Centre	Dr. Simeon O. Afolabi
Cedarcrest Prosthetic Centre	Ijeoma Akadoronye
Centre for Citizens with Disabilities	David Anyaele
Christian Blind Mission (CBM) International	Dr. Israel Balogun
Daughters of Charity*	Sister Fidelia Unigwe
Disability Rights Advocacy Center	Irene Patrick Ogbogu
Down Syndrome Foundation	Sunday Ojo
Enugu State Ministry of Women Affairs and Social Development	Ann Anike
FCT Vocational Rehabilitation Centre	Comrade Bala Tsoho
Federal Medical Centre Nguru, Yobe	Dr. Habu Abdul Dr. Akinniran Abdullahi Dr. Sepu Ngamariju
Federal Ministry of Education	Aisuedion Abela
Federal Ministry of Finance	Helen Akpan
Federal Ministry of Health	Dr. Amedu Joseph Dr. Nnenna Ezeigwe Dr. Emmanuel C. Meribole Dr. Oyebanji Filani Dr. Kwetishe Paul Dr. Longji Dakum Dr. Obiajulu Ugbo
Federal Ministry of Humanitarian Affairs, Disaster Management, and Social Development*	Mrs. Nkechi Onwukwe Garba Magaji Uchenna. C. Onah
Federal Ministry of Science and Technology*	Adaku David-Okoutu
Federal University of Technology Minna	Prof. Abdulkareem Saka
Federal University of Technology Owerri	Prof. P.U. Agbasi
Hope on Wheels Initiative	Amina Rahma Audu
International Centre for Prevention of Deafness & Rehabilitation of Hearing-Impaired Persons	Eneche Audu Danlami
Isiaka Manji Welding Workshop	Isiaka Musa Manji
Ishk Tolaram Foundation (Ishk Limb Centre)	Jai Prakash Bidlan Chandrakant Walavalkar
Joint Association of Persons with Disabilities - FCT Chapter	Uchegbulam U. Ikem Ekaette Judith Umoh
Kaduna State Ministry of Women Affairs and Social Development	Abdulkadir Tijani Aliyu

Lagos State of Women Affairs and Social Development	Jaiyesola Oluwatoyin Ayomide
Medical Rehabilitation Therapists Board of Nigeria	Dr. Olufunke Akanle Adedoyin Olawale Dr. Ozoh Happiness Nkechi
Mobility Aid and Appliances Research and Development Centre (MAARDEC)	Cosmos Okoli
National Health Insurance Scheme	David Sylvester
National Institute of Leather and Science Technology	Gimba Kadarko Igili Ojo Andrew Imo Felix Udobi Peter Thomas
National Office for Technology Acquisition and Promotion*	Gabriella Memberr Onuba Ngozi
Neuroscience Society of Nigeria	Prof. Nuhu Danjuma Mohammed
Neuromuscular Rehabilitation Services (NRS)	Kofo Otto-Davies
National Health Insurance Agency	David Sylvester
National Obstetric Fistula Centre, Abakaliki	Dr. Babafemi Daniyan
Nigeria Optometric Association	Dr. Ozy Okonokhua
Nigeria Labor Congress	Maureen Oyis Elarazi
Nigerian Association of the Blind	Bulugbe Joseph
O Networking Enterprises	Omeh Nnamdi. N Obayi Nnaemeka
Optometrists and Dispensing Opticians Registration Board of Nigeria	Prof Ebele Bridget UzoDike
OrthoEx Nigeria Limited	Ozoemenam Onyekachi D.
Oyo State Ministry of Women Affairs and Social Development	Kolajo Sunday Olaniyi
Speech Pathologists and Audiologists Association of Nigeria	Prof. Abiola Ademokoya
Spinal Cord Injury Association of Nigeria	Chimaobim Ononogbu
Starkey Hearing Foundation	Ibrahim Salako
Standards Organization of Nigeria	Aondoaver Akende Ubula
The Albino Foundation	Jake Epelle Damian Ivom
The Irede Foundation	Chigbu Crystal
The Leprosy Mission Nigeria*	Pius Ogbu Sunday Osuchukwu Linus Ogbonna Christopher
The Lens Foundation for the Blind	Prof Adebayo Omobolanle Adio
Theseabilities Foundation	Adetoye Abioye
The Presidency, Disability Matters	Dr. Samuel Ankeli Ibrahim Yusuf M Andrew Okwori
University College Hospital Ibadan, Ophthalmology Department	Dr. Charles Bekibele
University of Ibadan	Prof. J.A. Ademokoya
University of Maiduguri/University of Maiduguri Teaching Hospital	A.B Hassan

**These organizations are part of the Ministry of Humanitarian Affairs' Technical Working Group on Local Production of Assistive Devices (TWG)*

Appendix B: Supporting documents

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Appendix C: Product Category

Products highlighted in green are prioritized by the WHO.

Impairment Area	Product category
Mobility	Canes/sticks (including tripods and quadripods)
	Crutches, axillary/elbow
	Walking frames and rollators
	Orthoses
	Prostheses
	Therapeutic footwear; diabetic, neuropathic, orthopedic
	Pressure relief cushions
	Wheelchairs, manual for active use
	Club foot braces
	Wheelchairs, manual assistant-controlled
	Ramps, portable
	Handrails/grab bars
Vision	Magnifiers, optical
	Spectacles
	White canes
	Audio players with DAISY capability
	Braille equipment
	Magnifiers, digital hand-held
Hearing	Watches talking/touching
	Hearing aids (digital) and batteries
	Alarm signalers with light/sound/vibration
Communication	Communication boards/books/cards
Cognitive	Chairs for shower/bath/toilet
	Incontinence products, absorbent
	Personal emergency alarm systems (PDA)
	Pill organizers
	Simplified mobile phones

Appendix D: List of individuals who participated in the CCA report validation exercise

ORGANIZATION	NAMES
Amputee Coalition of Nigeria	Florence Marcus
Centre For Citizens with Disability	Peace Ezekiel
Clinton Health Access Initiative	Olajumoke Adekeye
	Gboyega Alesinloye
	Peace Oruma
	Damilola Oyedele
	Maryam Zarewa
Disability Rights Advocacy Centre	Agwu Amaka
	Dorcas Attah
Federal Ministry of Education	Muyiwa T. Afolayan
Joint National Association of Persons with Disabilities	Agbo Christian O.
	Asogwa Loveth
Nigerian Association of the Blind	Agada Jacob
Medical Rehabilitation Therapists Board/Federal Ministry of Health	Dr. Olunfunke Akanle
	Onwu Evans Ngozi
National Commission for People with Disabilities	Gyang Moses S.
	Yusuf Iyodo
	Musa M. Musa
	Lawrence I. E.
	Sandra S. Gulana
	Ikem Uchegbulam
Sign Language Interpreters	Olayinka Hannah
	Ajayi Segun
The Albino Foundation	Victor Ebiloma
World Health Organization	Dr. Omotayo Hamzat

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