Insights into the demand landscape and supply-cost components for digital assistive technology, hearing aids, prostheses, spectacles and wheelchairs in low- and middle-income countries, alongside China's supplier landscape

ASSISTIVE PRODUCTS MARKET REPORT 2025

CLINTON HEALTH ACCESS INITIATIVE

ATscale
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Foreword

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The demand for assistive technology (AT) is growing rapidly, particularly in low- and middle-income countries (LMICs). This is driven by factors such as ageing populations, the rising rates of non-communicable disease and a growing understanding of the importance of AT in promoting inclusion and improving quality of life.

The Assistive Products Market Report 2025 builds upon the success of its predecessor, the Assistive Products Market Report 2024, which provided a comprehensive guide to assistive products, prices, specifications and suppliers. This new edition takes a crucial step forward by focusing on the demand side of AT market dynamics. It delves into the significant unmet need for AT in LMICs, analyses the complexities of supply chain costs and examines the role of China's supplier landscape.

This report is a valuable resource for policymakers and suppliers seeking to gain a deeper understanding of the AT market needs in LMICs. It offers actionable strategies to improve AT access and encourages collaboration to strengthen the AT ecosystem.

By highlighting the scale of the unmet needs, the report underscores the urgent requirement for a more robust and equitable market for assistive products. It provides a road map for policymakers to develop and implement effective strategies and policies that promote access to affordable and appropriate AT for underserved populations.

We believe that this report will serve as a catalyst for change, fostering greater collaboration between policymakers, suppliers and other stakeholders to ensure that everyone, regardless of their location or income, has access to the AT they need to live healthier, more dignified and productive lives.

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We would also like to express our gratitude to our public and private sector partners across low- and middle-income countries. Thanks to the dedicated efforts of all involved, we are collectively working to increase the accessibility of assistive technology for more people in need.

List of Tables and Figures

Acronyms

AAC	Augmentative and Alternative Communication
ADIP	Assistance to Disabled Persons
AFES	African Federation for Emergency Services
AFWC	African Federation of Wheelchair Communities
AI	Artificial Intelligence
AK	Above Knee
ALTSO	A Leg to Stand On
ASEAN	The Association of Southeast Asian Nations
AT	Assistive Technology
BK	Below Knee
BRI	Belt and Road Initiative
BTE	Behind the Ear
CADTC	China Assistive Devices and Technology Center for Persons with Disabilities
CBM	Christian Blind Mission
CDPF	China Disabled Persons' Federation
CE	Conformité Européenne (European Conformity)
CHAI	Clinton Health Access Initiative
COVID	Coronavirus Disease
CR	Crown Resin (lens material)
CSR	Corporate Social Responsibility
CURE	CURE International
FDA	Food and Drug Administration
FWM	Free Wheelchair Mission
GSMA	Global System for Mobile Communications Association
HI	Humanity and Inclusion
HKI	Helen Keller International
HTWF	Hear the World Foundation
IAPB	International Agency for the Prevention of Blindness
ICRC	International Committee of the Red Cross
IEC	International Electrotechnical Commission
ISO	International Organization for Standardization
JKN	Jaminan Kesehatan Nasional (Indonesia health insurance scheme)
KEBS	Kenya Bureau of Standards
LDS	Latter-day Saints
LMIC	Low- and Middle-income Countries
NGN	Nigerian Naira

NGO	Non-governmental Organization
NMPA	National Medical Products Administration
NPO	Non-profit Organization
NVG	New Vision Generation
ODM	Original Design Manufacturer
OEM	Original Equipment Manufacturer
P&O	Prosthetic & Orthotic
PAC	Product Advisory Council
PRP	Physical Rehabilitation Programme
QA	Quality Assurance
QC	Quality Control
R&D	Research & Development
RMB	Renminbi (Chinese Yuan)
ROMP	Range of Motion Project
SAMR	State Administration for Market Regulation
SGS	Société Générale de Surveillance
TR	Trade Regulation
UN	United Nations
UNICEF	United Nations International Children's Emergency Fund
US	United States
USAID	United States Agency for International Development
UV	Ultraviolet
VAT	Value Added Tax
WHO	World Health Organization

Executive summary

The *Assistive Products Market Report 2024* edition was focused on presenting a one-stop guide to assistive products, prices, specifications and suppliers and on providing a brief overview of the market landscape for hearing aids, spectacles, prostheses, wheelchairs and digital AT. Launched on World Day for Assistive Technology, 4 June 2024, the report provided a road map to countries for procuring assistive products. While this report focused on enhancing information transparency on the supply-side, significant gaps in knowledge remained on the demand side including on the scale of unmet need for assistive products, particularly in low- and middle-income countries.

Therefore, the *Assistive Products Market Report 2025* report complements the previous edition by focusing on the demand side of AT market dynamics, such as the unmet need for AT, supply chain costs and China's supplier landscape, and offers actionable strategies to improve AT access in low- and middle-income countries. The report is aimed at policymakers and suppliers to gain a deeper understanding of the AT market needs in LMICs and encourages them to adopt suitable strategies and policies to collaborate and strengthen access to AT to underserved populations.

Outlook for assistive products

The estimated value of the global assistive products market in 2024 is between US$26 billion and US$31 billion, with a projected annual growth rate of 7 to 10 per cent through to 2030. **LMICs remain underrepresented in the market, with an unmet need potentially tenfold larger than current demand**. Though LMICs account for about 84 per cent, or 6.6 billion, of the world's population. Moreover, the assistive products market in LMICs is expected to grow significantly, driven by factors such as an ageing population and a rise in non-communicable diseases (NCDs). For instance, the World Health Organization (WHO) projects that by 2050, two thirds of the global population aged 60 and above will reside in LMICs.

Unaddressed demand in LMICs

The unmet need for assistive technology is significant in LMICs and can be illustrated through the following examples.

- **Globally, 1.6 billion have hearing loss**, with 430 million having moderate to severe loss. However, more than 80 per cent lack access to hearing aids or related products. Based on this study, only an estimated 45,000 units of hearing aids were

procured annually from major non-governmental organizations (NGOs), corporate foundations, global procurement services and surveyed governments in LMICs.

- **65 million people globally live with amputations**, however, more than 80 per cent lack access to suitable prostheses. This study showed that only 25,000-30,000 units in total were procured in LMICs from major NGOs, social enterprises and surveyed governments per year, with a heavy reliance on NGOs.
- In the case of vision impairment, **2.6 billion people have myopia and 1.8 billion have presbyopia globally**, yet 64 per cent lack access to spectacles or related products. This study showed that about 10-15 million spectacles and related products are procured annually by NGOs and social enterprises, with 80 per cent of procurement through the private sector.

Role of private sector in meeting demand

On average, two in three users in LMICs purchase their AT through the private sector, which goes up to four in five for spectacles. Therefore, people in LMICs heavily rely on out-of-pocket expenditures to access AT. Provision through NGOs, corporate foundations and government initiatives remains limited in reach, with only a small portion of the need for hearing aids being met, and with slightly more, though still limited, provision for prostheses and wheelchairs.

Factors driving high costs of assistive products

Given the heavy reliance on out-of-pocket expenditure in LMICs, the high cost of assistive products remains a major barrier to access. Cumulatively, additional costs such as duties, shipping, logistics, distributor and retailer margins can push the price as high as 500 per cent of the ex-factory cost. These costs are driven by the following factors:

- Import duties and taxes: Import duties and taxes are a substantial cost barrier, with duties ranging from 0 to as high as 108 per cent on certain assistive products, like spectacles in Bangladesh.
- Shipping and logistics: Expenses constitute 15 to 40 per cent of assistive product costs, depending on the shipping route and order volume. Smaller, fragmented orders can drive up logistics costs by 30 to 40 per cent.
- Distributor and retail margins: High margins are common in regions with limited competition. For instance, in Uganda, spectacle margins can reach 50 per cent, significantly increasing end-user costs.

Systemic barriers impede equitable access:

Several structural challenges hinder the effective provision of assistive products and deepen the unmet need in LMICs:

- **Fragmented procurement and financing**: Assistive products are sourced via different channels like NGOs, government programmes and direct procurement by users. In many countries, people depend heavily on NGOs because health insurance often does not cover assistive products. This results in unequal access, especially for poorer populations. Funding is also highly fragmented, with money coming from a mix of out-of-pocket payments, limited government budgets and donor contributions – leading to gaps in coverage, supply disruptions and a lack of coordinated planning or large-scale procurement. This fragmentation not only limits the availability of quality products but also constrains the ability to assess national-level demand and supply – both met and unmet.
- **Funding shortfalls**: Assistive products are often excluded from community health insurance schemes in LMICs. During the COVID-19 pandemic, many governments reduced budgets for assistive technology, and although some recovery took place in recent years, funding remains insufficient to meet growing demand. At the same time, global aid and contributions from faith-based organizations have declined. This progress has been further disrupted by the recent United States Government (USG) stop-work order, which halted or eliminated budget allocations for several AT programmes reliant on US funding. This sudden halt has created uncertainty for NGOs and procurement agencies reliant on USG grants, further straining already limited resources for AT provision in LMICs.
- **Market and supply chain barriers**: Investment in the AT sector remains low, limiting local manufacturing and distribution capacity in LMICs. This is driven by market uncertainty and high supply chain costs, which were further intensified by global disruptions such as the 2023-2024 Red Sea crisis, leading to increased shipping costs and delivery delays. As a result, high prices and long wait times continue to suppress demand – especially in remote and low-income settings.
- **Policy gaps**: Although many countries have ratified the United Nations Convention on the Rights of Persons with Disabilities (UNCRPD), few have comprehensive policies for assistive technology. Common gaps include the absence of product standards, service provider qualifications and guidelines on service types and levels.
- **Insufficient trained professionals**: A shortage of trained professionals in LMICs limits awareness and access to appropriate assistive technologies. This includes poor knowledge of emerging low-cost and context-appropriate solutions among both users and providers.

- **Low public awareness and demand generation**: Overall awareness of assistive technology remains low in many LMICs, especially in rural areas. Many people, including caregivers and frontline workers, are unaware of available products or how to access them. Without targeted outreach, demand remains limited – even where products exist.

To address these challenges, key recommendations include the following:
(1) enhancing transparency in supply chains to improve efficiency and accountability; (2) strengthening government policies to integrate at into health or social insurance schemes; (3) consolidating funding sources to encourage multi-stakeholder partnerships; and (4) promoting market efficiency with supportive policies, such as tax exemptions, increased private sector engagement and encouraging local and regional manufacturing, where feasible.

1. Introduction

Globally, 1 billion people are unable to access assistive technology that they need [1]. Market failures are a key reason for this, impacting low- and middle-income countries in particular. Information asymmetries are one of the most important market failures: policymakers often have limited visibility of demand in LMICs, the available supply of AT and the complete magnitude of the associated supply costs. These failures disproportionately affect vulnerable populations, underscoring the need for systemic reforms and robust market development to enhance access to priority assistive products, including digital assistive technologies, spectacles, hearing aids, prostheses and wheelchairs.

The Assistive Products Market Report 2025 is a continued effort to mitigate market information gaps and complements the Assistive Products Market Report 2024, which was published by ATscale and CHAI on World Day for Assistive Technology on 4 June 2024 [2]. The 2024 report aimed to address some of these failures by offering a one-stop product guide for buyers, donors and policymakers. This edition complements that report and focuses on the demand landscape for AT, including analysis of procurement by governments, NGOs and corporate foundations. It also presents an in-depth analysis of the price components that affect the cost of supplying assistive products, which in turn influences its demand.

Methodology

The report focuses on five assistive products: wheelchairs, prostheses, spectacles, hearing aids and digital AT (including augmentative and alternative communication, screen readers and smartphones), selected for their high demand in LMICs.

The report is organized into sections:

- 'Demand landscape' examines the **demand for these five assistive products**, focusing on key buyers such as non-profit organizations, corporate foundations and social enterprises.
- 'Assistive products supply cost drivers' analyses the **key cost components** contributing to the final landing price of assistive products from the factory to the end user and offers targeted recommendations for optimizing supply chain costs.

In addition, it includes three annexes:

- 'China assistive product supplier landscape' provides an in-depth analysis of the supply **landscape from one of the world's leading manufacturing hubs of assistive**

products. It highlights key trends, challenges and opportunities associated with exporting assistive products from China to LMICs.

- 'NGO/corporate foundations/social enterprises' provides details of organizations providing assistive products in LMICs, including their **mission, focus areas, geographic reach and product sourcing criteria**.
- The country summaries provide an **overview of the policy, financing, regulatory, procurement and pricing frameworks for priority assistive products across 12 countries**. These countries were strategically selected to represent a diverse range of geographies, levels of maturity in assistive technology programmes, degrees of government involvement and varying regulatory environments.

The methodology of this report includes a combination of primary and secondary data collection. Primary data were obtained through structured interviews and surveys with global AT providers such as UNICEF, NGOs, corporate foundations, implementing partners and ministries in various countries. These included over 50 key informant interviews with stakeholders across various LMICs to understand procurement practices, demand trends and price components of supply. A survey was conducted in the selected 12 countries, targeting government representatives, to gather official information on procurement, cost and financing of assistive products.

- Demand analysis methodology: Given the limited availability of comprehensive and standardized data across countries, this analysis adopts a pragmatic, mixed-methods approach. It draws from procurement volumes reported by major global distribution channels – including NGOs, corporate foundations, social enterprises and global procurement platforms – as well as a targeted snapshot of procurement activities by governments in a sample of LMICs. This method allows for triangulation of available data to generate indicative estimates of supply relative to known global prevalence. For the purposes of this study:
    - Need refers to the estimated population requiring a specific assistive product, based on global prevalence data aligned with moderate to severe functional limitations.
    - Demand refers to the estimated population (subset of need) currently accessing assistive products.
    - Procurement denotes the number of assistive products acquired – either through public sector channels, NGOs, social enterprises or global pooled procurement platforms – intended for distribution or sale within LMICs.
    - Unmet need is understood as the proportion of the population requiring a product but lacking access to it, whether due to financial, geographic or systemic barriers.

- Supply cost analysis methodology: Given the lack of disaggregated cost data across assistive technology supply chains, this study employed a bottom-up costing approach using a combination of desk research, supplier interviews and market intelligence from social enterprises, NGOs and procurement agencies. The analysis focused on identifying and estimating the major cost drivers for supply of AT products – from shipment and importation to last-mile delivery in LMICs. The study examined cost components across four representative products: hearing aids, prostheses, spectacles and wheelchairs. For each, the analysis considered the following factors:
    - International logistics (freight, insurance, customs duties)
    - Local costs (distribution, warehousing, retail margins and service delivery such as fitting or customization where required)

Where exact data were unavailable, proxy values were used based on similar products or regions and validated through consultation with suppliers and practitioners. All cost estimates were standardized to a percentage of the ex-factory price of the product. This approach enables a comparative view of where costs are concentrated within the supply chain and highlights opportunities for efficiency gains or price reductions through pooled procurement, local production or policy reforms.

Limitations

- **Data gaps**: Reliable data on demand for assistive products in LMICs are scarce, leading to estimations based on limited surveys and market reports.
- **Fragmented market information**: The market for assistive products is fragmented, with varying degrees of involvement from governments, NGOs and private sector players, which complicates data collection and analysis. While the authors have reached out to major NGOs, social enterprises and corporate foundations, the analysis of the demand landscape is not to be considered comprehensive.
- **Focus on provision numbers**: While the report assesses the prioritized assistive products, it does not fully account for the quality, appropriateness, or post-delivery services such as repair and maintenance.
- **Importance of private sector**: The authors acknowledge the importance of the private sector in the provision of assistive products in LMICs and note the existence of many established collaborative projects between the public and private sectors, particularly in the spectacles space. However, this is not covered in this report, which is focused on the scope for demand.
- **Importance of services**: This report acknowledges the criticality of services alongside assistive products for comprehensive care. However, the scope of

the report is limited to assistive products, not the demand for services that are imperative for quality provision.

- **Importance of other assistive products**: The authors also acknowledge the need for other assistive products, especially for orthoses and products designed for children, in addition to those included in the report. Products such as standing frames, night-time positioners, height adjustable tables and chairs for schools, bathing equipment, hoists, grab rails, magnifiers, braille readers and ramps are not included in the current scope.

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2. Demand landscape

WHO estimates the value of the global AT market at between US$26 to US$31 billion, a figure that doubled over last 9 years [3]. According to various market research firms, the market for assistive products is expected to grow significantly over the coming years, with projections indicating year-on-year growth of about 7 to 10 per cent from 2024 to 2030 [4]. However, this figure underrepresents the demand in LMICs, where unmet needs are estimated to be tenfold larger than current demand.

LMICs are expected to drive significant growth in the AT market, propelled by an ageing population, the rising prevalence of non-communicable diseases and a growing awareness among governments, donors and consumers about the benefits of AT. For instance, the WHO projects that by 2050, two thirds of the global population aged 60 and above will reside in LMICs [5]. Furthermore, non-communicable diseases disproportionately affect people in LMICs, where more than three quarters of the 31.4 million global deaths occur [6].

There exists a large gap between the global need for assistive products, the demand in LMICs and the current level of procurement in LMICs by governments, NGOs and social enterprises. Table 1 summarizes the estimates across the five product categories and highlights the significant gap between the need and nationally funded procurement of AT. NGOs, faith-based organizations and social enterprises aim to bridge this gap by providing assistive products to those in need.

Their efforts remain pivotal, but demand is highly influenced by funding constraints, the shifting priorities of global donors and alignment with national policy frameworks. This fragmented but growing demand underscores the need for strategic coordination and investment to address gaps in LMIC markets effectively.

Table 1: Global need and current provision by NGOs, corporate foundations and social enterprises

Hearing aids	
Global need	1.6 billion have hearing loss, with 430 million having moderate to severe loss
Unmet need	More than 80% lack access
LMIC procurement landscape	~45,000 units from major NGOs, corporate foundations, global procurement services, and surveyed governments
NGO procurement/ donation	Less than 5,000 units provided by NGOs (2023)
Corporate foundations procurement/donation	Over 4,000 units (2023)
Social enterprises procurement	NA
Global procurement service procurement	15,000-20,000 units since 2022
Government procurement (illustrative)	• Georgia: 1,160 units (2020) • Nigeria: 4,500 units (2022) • Indonesia: 7,690 units (2018) • South Africa: 18,000 on average annually (2017-2020)

Prostheses	
Global need	65 million people live with amputations
Unmet need	More than 80% lack access
LMIC procurement landscape	High reliance on NGOs, around 25,000-30,000 units in total from major NGOs, social enterprises, and surveyed governments per year
NGO procurement/ donation	22,376 units (2023) provided by ICRC
Corporate foundations procurement/donation	NA
Social enterprises procurement	NA

Prostheses	
Global procurement service procurement	NA
Government procurement (illustrative)	• Cambodia: 4,257 units (2023) • Georgia: 379 units (2020) • Indonesia: 401 units (2018) • Nigeria: below 1,000 units (2022-2024)

Wheelchairs	
Global need	80 million people need wheelchairs
Unmet need	65% to 95% lack access
LMIC procurement landscape	Over 150,000 units from major NGOs, social enterprises, global procurement services, and surveyed governments
NGO procurement/ donation	Over 100,000 units provided by large NGOs (2023)
Corporate foundations procurement/donation	NA
Social enterprises procurement	Over 15,000 units (2023)
Global procurement service procurement	Over 10,000 units since 2022
Government procurement (illustrative)	• Cambodia: 1,540 units (2023) • Georgia: 416 units (2020) • Nigeria: 480 units (2022-2024) • South Africa: 23,000 on average annually (2017-2020)

Smartphones (Digital AT)	
Global need	1.3 billion persons with disabilities would benefit from digital AT
Unmet need	Smartphone ownership gap can range from 16% to up to 76%

Smartphones (Digital AT)	
LMIC procurement landscape	7 in 10 countries showing year-over-year growth above 2% in smartphone demand
NGO procurement/ donation	NA
Corporate foundations procurement/donation	NA
Social enterprises procurement	NA
Global procurement service procurement	NA
Government procurement (illustrative)	Georgia: 50 units (2021)

Spectacles	
Global need	2.6 billion people with myopia, 1.8 billion with presbyopia
Unmet need	64% lack access
LMIC procurement landscape	80% procurement through private sector, with 10-15 million served by NGOs and social enterprises
NGO procurement/ donation	7 million units in 2023 provided by large NGOs; 11.5 million units expected in 2024
Corporate foundations procurement/donation	14 million units (2023) [7]
Social enterprises procurement	2 million units (2023)
Global procurement service procurement	NA
Government procurement (illustrative)	Indonesia: 1.3 million units (2018)

Despite the fast-growing needs in LMICs, several challenges continue to impede the effective provision of assistive products:

- **Fragmented procurement and financing**: Small-scale procurement takes place across diverse channels – government programmes, NGOs, social enterprises, corporate foundations and individual purchases through health centres, pharmacies or online platforms. For instance, in Ethiopia, procurement relies heavily on NGOs such as the Addis Guzo Centre, which distributed 15,000 wheelchairs between 2017 and 2023.
- **Funding shortfalls and redirection**: Funding is similarly fragmented, coming from out-of-pocket payments, limited public subsidies, insurance schemes and charitable donations. Donor-supported initiatives play a critical role where public financing is weak. In many LMICs, the lack of central coordination limits the ability to assess national-level demand and supply – both met and unmet. During the COVID-19 pandemic, many governments reduced budgets for assistive technology, and although some recovery has taken place in recent years, funding remains insufficient to meet growing demand.
    - At the same time, global aid and contributions from faith-based organizations have declined. This fragile progress has been further disrupted by the recent USG stop-work order, which has halted or eliminated budget allocations for several AT programmes reliant on US funding. The sudden withdrawal has created significant uncertainty for NGOs and procurement agencies, placing additional strain on already overstretched systems.
- **Market barriers and supply chain issues**: Investment in the AT sector remains low, limiting local manufacturing and distribution capacity. This is driven by market uncertainty and high supply chain costs, which were further intensified by global disruptions such as the 2023-2024 Red Sea crisis, leading to increased shipping costs and delivery delays. As a result, high prices and long wait times continue to suppress demand – especially in remote and low-income settings.
- **Policy gaps**: Despite the widespread ratification of UNCRPD, many countries still lack comprehensive policies regarding assistive technology. These gaps include the absence of standards for products, clear qualifications for service providers and guidelines for the types and levels of services to be provided. In many cases, governments have not established dedicated programmes for the provision of assistive products.
- **Insufficient trained professionals**: A shortage of trained professionals in LMICs limits awareness and access to appropriate assistive technologies. This includes poor knowledge of emerging low-cost and context-appropriate solutions among both users and providers.

- **Low public awareness and demand generation**: Initiatives such as the SPECS 2030 Initiative, launched by WHO in 2024, aim to address the awareness gap and strengthen service delivery. The initiative supports Member States in achieving a 40 per cent increase in effective refractive error coverage by 2030 through improved access to spectacles and public awareness of the importance of vision correction. Despite such efforts, awareness of assistive technology remains low across many LMICs, particularly in rural and underserved areas. Many individuals are unaware of the types of assistive products available, how to access them or how they can improve the quality of life. This lack of awareness also extends to caregivers, community health workers and local service providers, limiting demand generation and early identification of needs. Without targeted outreach, even when products are available, they often go unused or are accessed too late to be effective.

2.1 Hearing aids

Hearing aid helps individuals with hearing loss to listen, communicate and participate more fully in daily activities. Latest estimates reveal that hearing loss affects 1.6 billion people worldwide, of whom 430 million have moderate or higher severity hearing loss [8]. By 2050, the number of people with hearing loss is projected to reach nearly 2.5 billion, of whom 700 million will have moderate or higher severity of hearing loss [8]. Prevalence of hearing loss varies across regions, with 80 per cent living in LMICs [8]. The need is significantly under-tapped despite this growth, with fewer than 20 per cent of people who need hearing solutions currently have access to one [9].

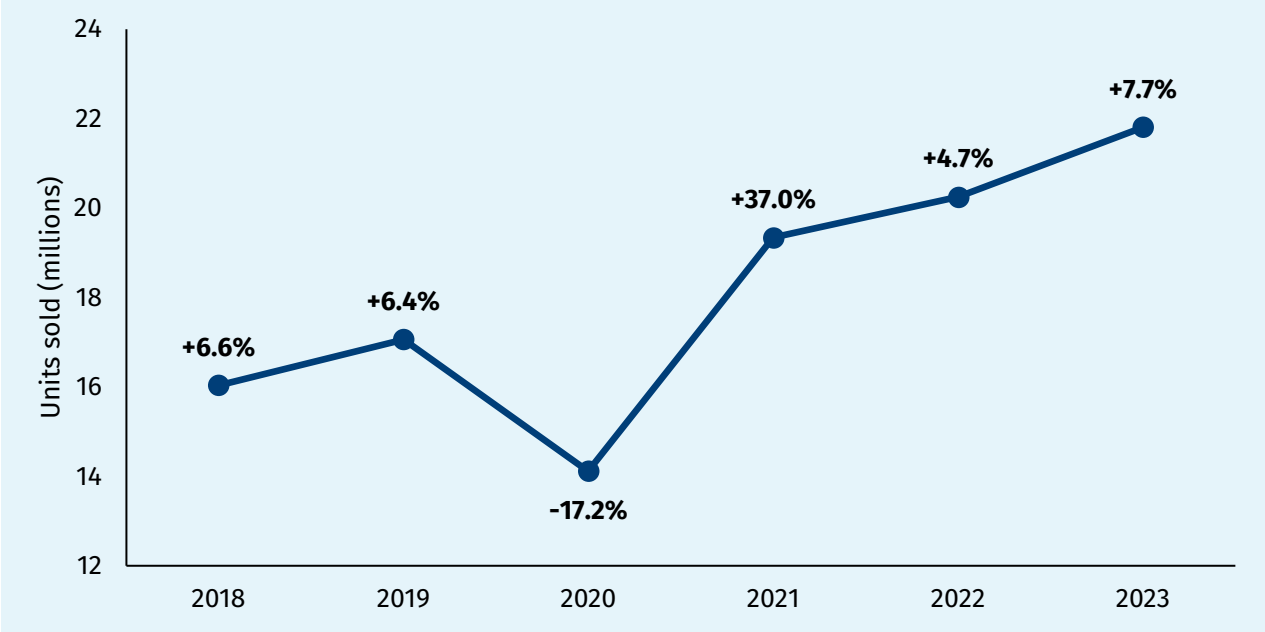
Access to hearing aids is just one component of rehabilitation for people with hearing loss. Counselling, speech and language therapy, hearing aid fittings, follow-ups, provision of repair and spare parts such as batteries are critical for the success of hearing aid rehabilitation programmes. It is important to note that this section focuses solely on the number of hearing aids being provided in LMICs as a measure of demand.[1]

Hearing aids demand landscape

The global market for hearing aids has demonstrated consistent growth in recent years, driven by demographic shifts, technological advancements and increasing awareness of hearing health [2]. In 2024, the European Hearing Instrument Manufacturers Association reported a 7.7 per cent increase in global hearing aid sales by the world's largest hearing instrument manufacturers, bringing the total to 21.8 million units in 2023. This follows a pattern of overall growth in global unit sales (Figure 1) [10]. One should note that the 2020 decline in sales was predominantly linked to the COVID-19 pandemic.

1 It does not assess the provision of the hearing aid fittings and services being provided, nor does it consider essential factors such as access to repair, maintenance and spare parts, all vital for ensuring successful outcomes from hearing aids fittings. Readers must reference this report along with WHO's guidance on hearing aid service delivery approaches for low- and middle-income settings. Additionally, the report does not further segment demand into adult and paediatric hearing aids.

Figure 1: Global Hearing Aid Unit Sales and annual growth (2018-2023)



Despite global growth, demand for hearing aids remains low in LMICs. The WHO estimates that coverage in these regions is less than 3 per cent [11]. This low coverage is in part attributed to the lack of government provision or insurance coverage. Relatively few non-profit organizations are active in this space. Corporate foundations aim to bridge this gap. Mayflower Medical Outreach's International Humanitarian Hearing Aid Purchasing Programme (IHHAPP) and UNICEF have negotiated more affordable prices and offer procurement services to countries and development organizations respectively.

The hearing aid market in LMICs is driven by a small number of NGOs and corporate foundations and supported by global procurement services such as UNICEF and the IHHAPP. Overall, hearing aid market demand in LMICs is significantly insufficient compared to need. For approximately 400 million people in LMICs who could benefit from hearing aids, major NGOs, corporate foundations, global procurement services and surveyed governments provide fewer than 50,000 units annually.

Only one third of surveyed governments, such as South Africa, procure and provide hearing aids (≈18,000 annually). NGOs account for around 10 per cent of the served demand, while corporate foundations contribute 15 per cent and global procurement services around 60 per cent. The remainder is met through scattered, small-scale government procurement or donations.

NGO market

Few NGOs are active in hearing health and NGO procurement for hearing aids is low, estimated at approximately 5,000 units per year and declining due to reduced funding. CBM is the largest NGO buyer. NGOs have adopted WHO guidelines and procure digital Behind the Ear (BTE) hearing aids. Product selection is informed by WHO's

recommendations for hearing aids specifications and quality [12], [13], [14]. Optimal quality at an affordable price, and prior experience with the supplier's procurement capabilities and reliability are critical factors in supplier and product selection by NGOs.

Table 2: NGOs providing hearing aids to LMICs

Organization	Christian Blind Mission
About	International Christian Development Organization active in 40 countries
Volumes (units)	• 2021: 2,597 • 2022: 2,444 • 2023: 1,074
Specifications	• Digital BTE hearing aids
Suppliers	• Via World Wide Hearing • ALPS • Phonak
Pricing	• US$98 to US$350

Organization	World Wide Hearing
About	Non-profit active in Guatemala, the Philippines, Peru and Zimbabwe.
Volumes (units)	• 2022: 2,500 • 2023: 3,800 • 2025 target: 5,000
Specifications	• Digital BTE hearing aids with at least 4 channels, robust (nano-coated chip), durable
Suppliers	• Access • ALPS • Phonak
Pricing	NA - varies by region

Corporate foundations

Corporate foundations are important providers in LMICs. Based on available info, Hear the World Foundation and Starkey Foundation are the two largest donors of hearing aids. Hear the World Foundation donated more than 4,000 units in 2023.[2]

Table 3: Corporate foundations providing hearing aids in LMICs

Organization	Hear the World Foundation
About	Non-profit foundation founded by Sonova Group, dedicated to improving access to hearing care for children in LMICs; currently active across 13 countries in LATAM, EMEA and APAC
Volumes (units)	• 2021: 2,260 • 2022: 2,881 • 2023: 4,067
Specifications	• Digital BTE programmable hearing aids
Suppliers	• Sonova Group's Products- Phonak, Hanston, Unitron
Pricing	NA

Organization	Starkey Hearing Foundation
About	Corporate Foundation linked to Starkey Hearing; active in over 100 countries
Volumes (units)	NA
Specifications	• Digital BTE hearing aids tailored to local care professionals
Suppliers	• Starkey
Pricing	NA

Global Procurement Services

UNICEF and IHHAPP offer procurement services for hearing aids for governments/UN agencies and NGOs respectively. Based on available information, between 15,000 – 20,000 hearing aids have been purchased through UNICEF procurement services since 2022. Demand for hearing aids through IHHAPP is low and has dropped since COVID.

2 Data from the Starkey Foundation were unavailable when the report was published.

Table 4: Global procurement services providing hearing aids in LMICs

Organization	IHHAPP
About	Hearing Aids Purchasing programme managed by Mayflower Medical Outreach
Volumes (units)	• To-date: 5,000 • 2022: 150 • 2023: 205 • 2024: 100 (until August)
Specifications	• Digital BTE hearing aids, adjustable via screw set potentiometers or software-based
Suppliers	• Alps • Starkey • Sound Worldwide Solutions
Pricing	• US$85 to US$135

Organization	UNICEF Supply Division
About	UNICEF's procurement services can be accessed by governments and UN agencies
Volumes (units)	• Since 2022: 15,000-20,000
Specifications	• Digital BTE pre-programmed and programmed hearing aids
Suppliers	• Starkey • GN Resound • WS Audiology
Pricing	• US$56 to US$162

Government market

Based on limited data collection, only 4 out of 12 countries (33 per cent) procure hearing aids, primarily upper-middle-income countries.

Examples of governments procuring hearing aids:

China	The procurement of hearing aids is not yet fully centralized through national bulk purchasing programmes, but are largely procured or subsidized through various channels, including local Disabled Persons' Federations of each province or cities, or the Audiology Development Foundation of China under the National Health Commission.
Georgia	Hearing aids are procured by the government through open tenders. The most recent national tender on supply and distribution of hearing aids was released in March 2022. Based on WHO's ATA-C report, 1,060 hearing aids for adults and 100 hearing aids for children were procured through the government tender and supplied to beneficiaries.
South Africa	The most recent transversal tender was released in October 2023 for supply and delivery of hearing aids and implantable hearing devices. This tender covers a period of 36 months. South Africa provided on average 18,000 hearing aids annually between 2017 and 2020.

Governments subsidizing hearing aids:

Indonesia	The government supports hearing aids through the national insurance scheme. It covers one hearing aid up to IDR1.1 million (approximately US$71) via certified sellers upon prescription for 5 years. Based on WHO's ATA-C report, the national health insurance subsidized 7,690 hearing aids in 2018.

Conclusion

The global hearing aids market has shown significant growth in recent years. Despite this progress, access to hearing aids remains uneven, particularly in LMICs, where coverage is critically low. While NGOs and corporate foundations are attempting to provide essential hearing care services where no formal provisions exist, the scale remains far below the level of need. To address the large unmet demand, it is essential for donors and LMIC governments to allocate dedicated budgets for the provision of hearing aids.

2.2 Prostheses

Globally, it is estimated that 65 million people live with limb amputations, with 60 per cent being lower limb amputations. But fewer than 20 per cent of the people who could benefit from prostheses have access to them [2]. The WHO estimates that the demand for prostheses will continue to grow and double by 2050, particularly in LMICs [15], driven by population growth, rising trauma incidence and an increase in non-communicable diseases such as diabetes.

International NGOs, such as Humanity & Inclusion (HI) and the International Committee of the Red Cross (ICRC), are key providers of prosthetic care in LMICs, particularly countries affected by conflict or natural disaster. Demand for prostheses in LMICs is influenced by the following factors: 1) lack of comprehensive and reliable market information; 2) limited product offerings; 3) high markups in supply chains (see Section Price Component of Assistive Products); and 4) lack of qualified service providers and trained clinicians.

Prostheses demand landscape

For millions of people in LMICs who need prostheses, major NGOs, social enterprises and surveyed governments provide approximately 25,000–30,000 units annually. The ICRC, the largest NGO in this field, supports prosthetic services across 28 countries, supplying around 23,000 units each year. Half of the surveyed governments also procure prostheses annually – for example, Cambodia purchases 4,000 units, while Georgia and Indonesia each procure 300 units.

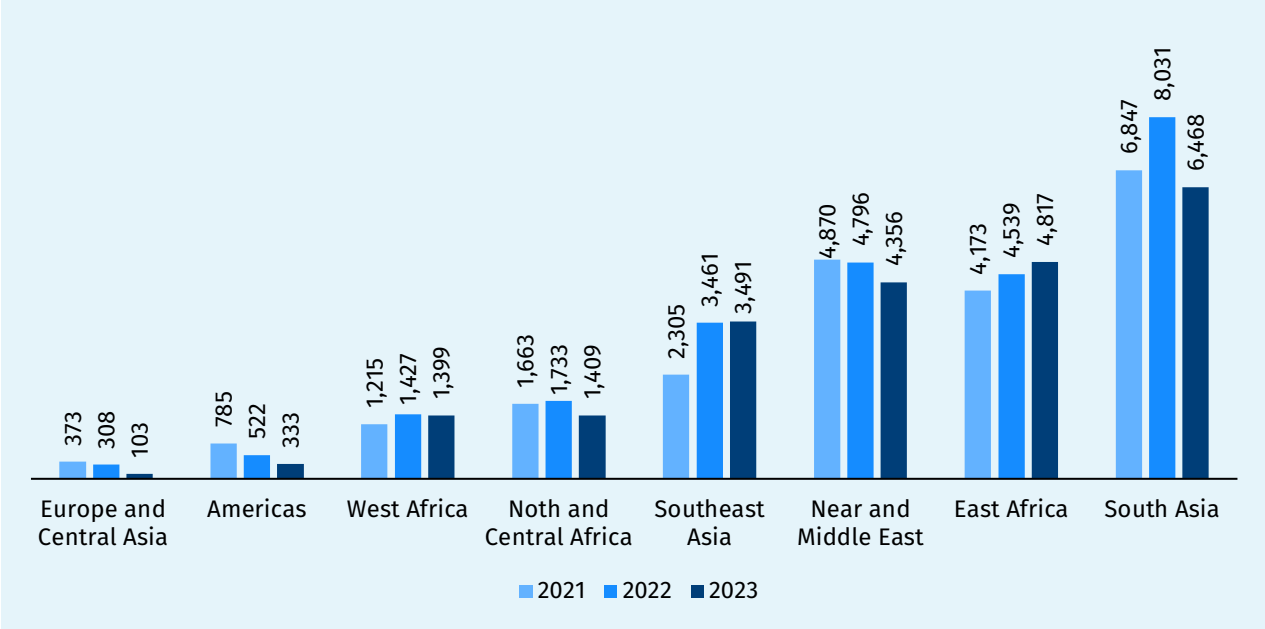
NGO market

NGOs play an important role in LMICs. Often, NGOs set up prosthetic care in the context of humanitarian response and have continued to offer services thereafter. These NGOs generally operate under two primary models, either fully subsidised (e.g. ALTSO) or partially subsidized (e.g. ROMP).

We do not have a full picture of the aggregated volume as some NGOs like HI also buy through a decentralized system. The available data also show a steady or growing demand for prostheses.

The ICRC Physical Rehabilitation Programme appears to be the largest NGO buyer with 22,376 units in 2023 [16]. The largest markets for ICRC are South Asia, the Near and Middle East and East Africa.

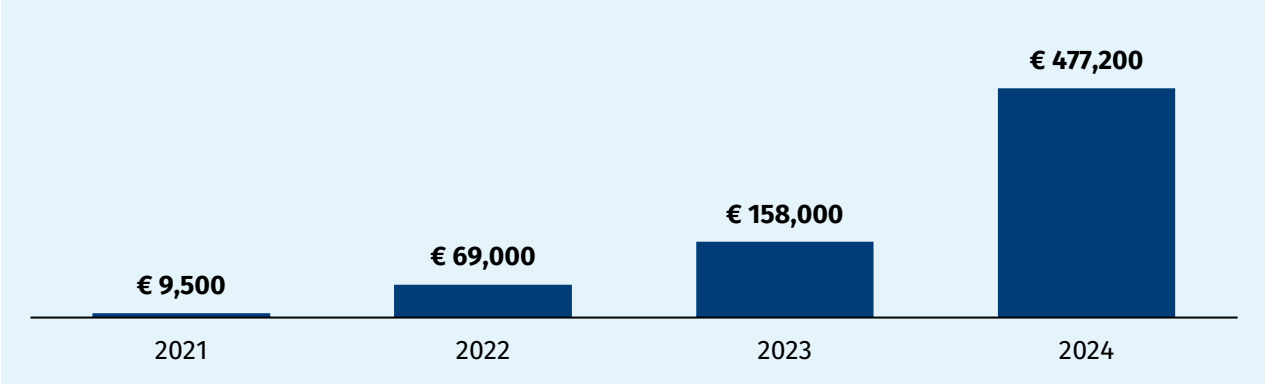
Figure 2: Units of prostheses provided by ICRC by region (2021-2023)



ICRC predicts that the total volume of prostheses delivered in 2024 and 2025 will remain at a similar level. Due to a rise in global conflicts and the corresponding rise in humanitarian needs, ICRC is experiencing funding constraints for its global physical rehabilitation programmes. Consequently, the number of prostheses delivered is not expected to grow. In response to the funding constraints, ICRC began exploring new financing models and ended physical rehabilitation projects in 11 countries: Algeria, Democratic People's Republic of Korea, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Niger, the Philippines, Tanzania and Viet Nam [17].[3]

HI provides rehabilitation services across 42 countries [18]. Its prostheses procurement is mainly decentralized via countries with partial procurement from the headquarters. The data from headquarters procurement show an increase from 2021 to 2024.

Figure 3: HI headquarters' procurement value for prostheses (2021-2024)[4]

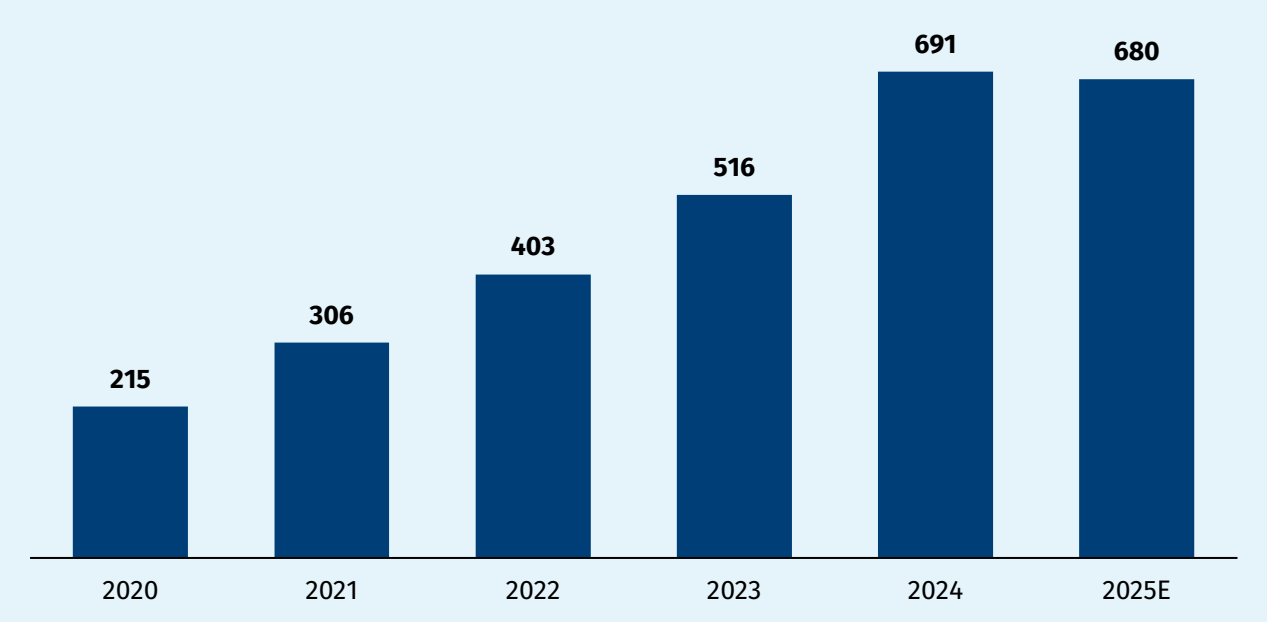


3 Further edition from ICRC team.

4 The data is provided by Humanity & Inclusion. Please note that the 2024 data is only up to the beginning of the year, and more should be expected for the full year.

NGOs, such as CURE International, ALTSO and ROMP, each deliver an average of around 500 prostheses per year. These NGOs fully or partially subsidise costs for patients. NGOs indicated that demand has been either steady or increasing over the last five years (see Figure 4). The primary products procured by these NGOs are lower-limb above-knee (AK) and below-knee (BK) sets, with ROMP reporting that over 90 per cent of its procurement is for lower limbs [19]. ALTSO and CURE focus on lower-limb products for children.

Figure 4: Total units of prostheses delivered by ROMP (2020-2025)



The price across all NGOs interviewed ranges from US$67 to US$450 for a BK set and from US$222 to US$700 for an AK set. NGOs report that users in LMICs are seeking higher-functionality prostheses than those currently available in LMICs. NGOs therefore expect to increasingly source higher-functionality products such as dynamic feet and higher-mobility-level knees.

The key selection criteria across NGOs are as follows: 1. price; 2. quality; and 3. logistics. The NGOs stated that they are trying to seek more affordable options from emerging countries. However, accessing product information, assessing quality and managing logistics is challenging. As a result, they often rely on global providers with a stronger local presence and reputation.

Table 5: NGOs providing prostheses in LMICs

Organization	A Leg to Stand On (ALTSO):
About	NGO providing prosthetic limbs, orthotic braces and wheelchairs to children; active in 10+ countries
Volumes (units)	• Average annual demand has remained steady: under 1,000 • Total 24,000 since 2003
Type	• Joshi: a modular lower limb system from lightweight aluminium materials
Suppliers	• Designed by ALTSO and produced by a contract manufacturer in India.
Reference pricing	• US$350 to donate a Joshi

Organization	CURE International
About	Christian NGO that operates 8 children's hospitals around the world.
Volumes (units)	• 2023: 459
Type	• Mainly BK set and AK set for children
Suppliers	Mainly two channels: • Regal Prostheses (Hong Kong SAR) • OADCPH, a distributor from Togo
Reference pricing	• BK set: US$150 • AK set: US$700

Organization	Humanity & Inclusion (HI)
About	NGO providing rehabilitation services across 42 countries
Volumes (units)	No volume data available but HI shared the procurement funding for their headquarters. • 2021: €9,500 • 2022: €69,000 • 2023: €158,000 • 2024: €477,200[5] This does not include local programme purchases.
Type	• Various components, such as knee joints, ankle joints, connectors, etc.
Suppliers	• Ottobock, (2021) • Proteor (2021-2024) • ATP Supply (2021)
Reference pricing	• Child Knee Joint (Steel, Lock): ≈US$190 • Adult Knee Joint (Steel, Lock): ≈US$205

Organization	ICRC - Physical Rehabilitation Programme
About	An ICRC programme established in 1979 to support physical rehabilitation services globally.
Volumes (units)	• 2021: 22,231 • 2022: 24,817 • 2023: 22,376 The volume for 2024 and 2025 is predicted to remain stable.
Type	• Prosthetic components, mainly SACH feet, AK and BK sets, polycentric and monocentric knee joints • Raw materials such as Polypropylene
Suppliers	• Rehab Impulse: brand owned by ICRC and produced by Foundation Alfaset (Switzerland) • Other global manufacturers such as Ottobock and North Sea Plastics

5 The data were retrieved from September 2024 and therefore does not include the full year funding.

Organization	ICRC - Physical Rehabilitation Programme
Reference pricing	• SACH Foot: US$48.5 (Adult), US$34.5 (Child) • AK alignment kit: US$29.9 (Adult), US$24.5 (Child) • BK alignment kit: US$29.5 (Adult), US$23.5 (Child) • Knee joint: US$144 (Monocentric), US$218 (Polycentric)

Organization	The Range of Motion Project (ROMP)
About	NGO dedicated to ensuring access to high-quality prosthetic care, active in Guatemala and Ecuador.
Volumes (units)	• 2021: 306 • 2022: 403 • 2023: 516 • 2024: 691 • 2025E: 680 • Total 5,849 units since 2005
Type	• Copoly Socket Fabrication
Suppliers	• About 95 per cent of the components are recycled from the US. • The rest are procured directly from manufacturers or distributor.
Reference pricing	• Patients first complete a socioeconomic study to determine their level of vulnerability and level of copay. • BK prosthesis copay: US$300-US$450 • AK prosthesis copay: US$400-US$600 • Socket replacement: US$450

Note: The list is not exhaustive, but shows the product types, volumes, manufacturer and prices in NGO procurement. The NGOs were strategically selected to cover different geographies and age groups.

Government market

Based on limited data, government demand for prostheses in LMICs is limited to a few more developed countries, with many countries still relying on NGOs for provision. Out of 12 countries surveyed, 6 (50 per cent) procure or subsidize prostheses.

Examples of governments procuring prostheses:

Cambodia	The government procures prostheses through the Ministry of Social Affairs, Veteran, and Youth Rehabilitation. According to primary survey data, in 2023 the government procured 4,257 units of prosthetics and orthotics at prices ranging from US$120 to US$585 per unit.
China	Regional disabled persons' federations, public hospitals and rehabilitation centres announce tenders through local government websites and national platforms like the China Assistive Device and Technology Centre and the China Disabled Persons' Federation. The government does not disclose the annual procurement volume of prostheses.
South Africa	South Africa issued its most recent national transversal tender for rehabilitation equipment, including prostheses, in 2019 under bid number RT55. The tender covers the period from March 2020 to February 2023.
Zambia	The government procures prostheses through public tenders and Requests for Proposals issued by the Zambia Public Procurement Authority. The latest tender for prostheses and orthoses closed in October 2024, but the value remains undisclosed [20].

Examples of governments subsidizing prostheses:

Georgia	The government allocated GEL2.7 million (≈US$984,000) in 2020 and GEL 2.1 million (≈US$769,000) in 2021 for prostheses. It subsidised up to GEL 5,135 (≈US$1,885 dollars) for lower-limb prostheses and up to GEL 7,410 (≈ US$2,720 dollars) for upper-limb prostheses. In total, 379 state-subsidized prostheses were provided in 2020 and 262 in the first half of 2021 [21].
Indonesia	The government procures prostheses through its national medical equipment procurement platform, "E-catalogue" [22]. It subsidizes up to IDR 2.8 million (≈US$177 dollars) for prostheses[6]. In 2018, the Indonesian national health insurance subsidised 401 prostheses, with a total reimbursement of IDR964.7 million (≈US$62,000 dollars), accounting for around 0.03 per cent of total government expenditure on assistive products that year [23]. The coverage remains limited due to a lack of national planning and funding.

6 Data collected by CHAI country team.

Conclusion

The need for prostheses in LMICs significantly exceeds current procurement volumes. The high costs and limited product availability restrict access for those in need. Government procurement for prostheses in LMICs is limited to a few more developed countries, while NGOs serve as the primary purchasers across LMICs, supplying prostheses to underserved populations. ICRC and HI are the leading buyers, while regional NGOs fill the demand gaps across different continents.

In the short term, given the increasing global conflicts and growing humanitarian needs, the main demand generator, ICRC, faces funding constraints and does not anticipate a substantial rise in procurement. However, in the long term, demand for high-quality, affordable and logistically efficient prosthetic solutions is expected to grow. Key drivers include population growth, rising trauma cases and the increasing prevalence of non-communicable diseases.

2.3 Smartphones (digital assistive technology)

The 2024 edition offered a comprehensive overview of screen readers, augmentative and alternative communication tools and smartphones, collectively categorized as digital assistive technology. This 2025 edition focuses more narrowly on smartphones, reflecting recent findings that highlight their consistent presence in the demand landscape across LMICs compared to the standalone technologies covered in the previous editions.

Smartphones have emerged as an assistive product that may effectively and potentially more affordably meet the needs of persons with disabilities. They offer features that support a wide range of disabilities, including cognitive and sensory impairments, by consolidating functions traditionally handled by separate, more specialised devices. For example, they can integrate screen reading, text-to-speed applications and navigational aids, all on one device [1].

Smartphones are becoming one of the most cost-effective and widely used assistive products [24], [25], [26]. In Kenya, for instance, 69 per cent of smartphone owners with visual impairment use mobile internet daily, compared to 56 per cent of owners without a disability [27]. A study by GDI Hub, ATscale and Google is underway to assess the impact of smartphones in these contexts. The study's preliminary findings across Brazil, India and Kenya indicate that smartphones are "both an enabler in people's lives and a piece of assistive technology with the potential to replace older forms of stand-alone assistive technology" [28]. This highlights the smartphone's potential as an enabler of independence for persons with disabilities.

Smartphones demand landscape

Few comprehensive data exist on smartphone demand in LMICs specifically for persons with disabilities. However, experts consulted suggest their demand is unlikely to be lower than that of the general population, as smartphones would generally be used for similar tasks in most cases; it is only the features and functions to deliver those tasks that vary. Therefore population-level smartphone demand data are used as a proxy to estimate demand among persons with disabilities.

GSMA's Mobile Internet Connectivity Index estimates the smartphone demand trends in LMICs (see Figure 5) [29]. All countries in scope are seeing notable growth in demand, as evidenced by 10 of the 14 illustrated countries having a year-over-year growth rate of over 2 per cent. However, the trend resembles an inverted bell shape, with slower growth at the extremes of smartphone penetration and higher year-over-year growth in the mid-range. For example, China has a high mobile ownership rate but displays the smallest year-over-year growth. Low-income countries like Ethiopia and Liberia also show relatively small year-over-year growth, under 2 percentage points. Comparatively,

countries like Cambodia and Kenya, in the mid-range of the overall ownership figures, display relatively high ownership growth rates of over 3 percentage points.

Figure 5: Mobile ownership (per cent of the population, ranked by ownership rate)

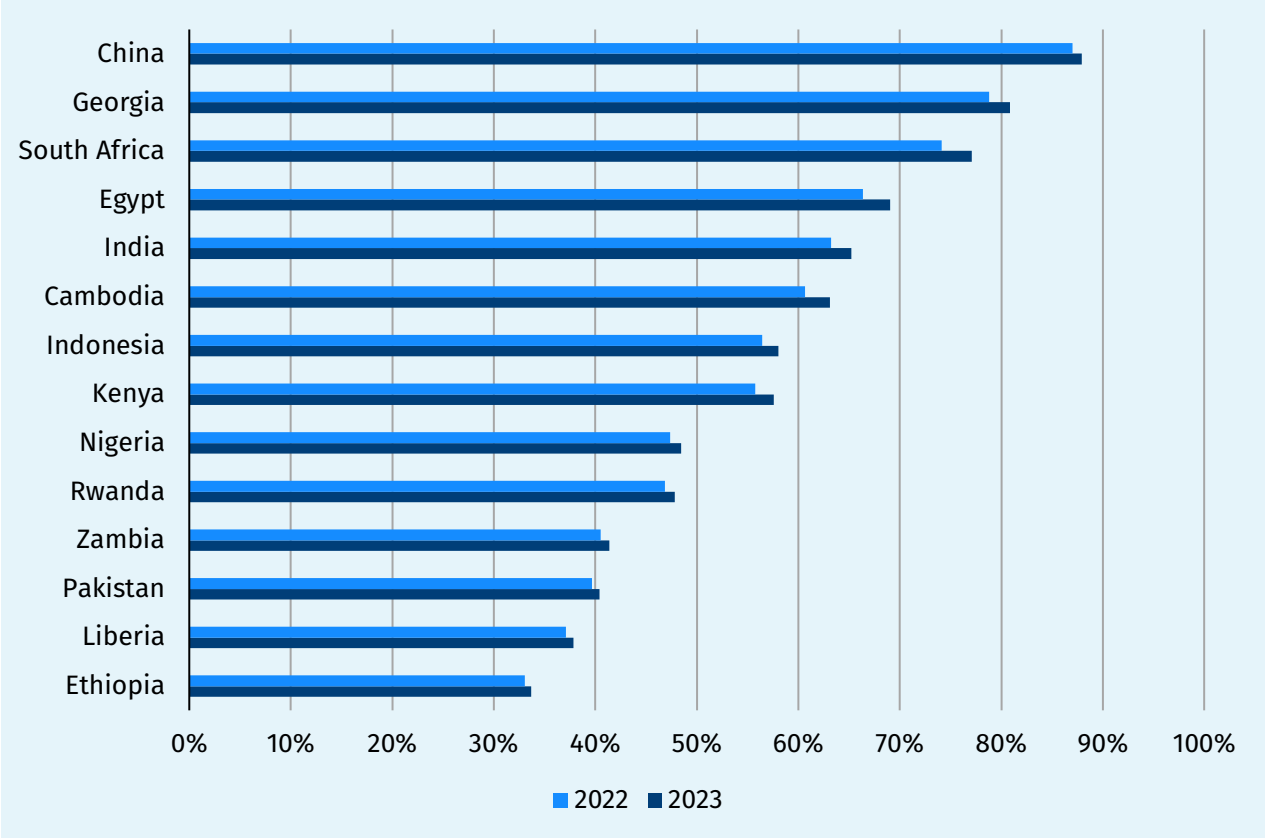
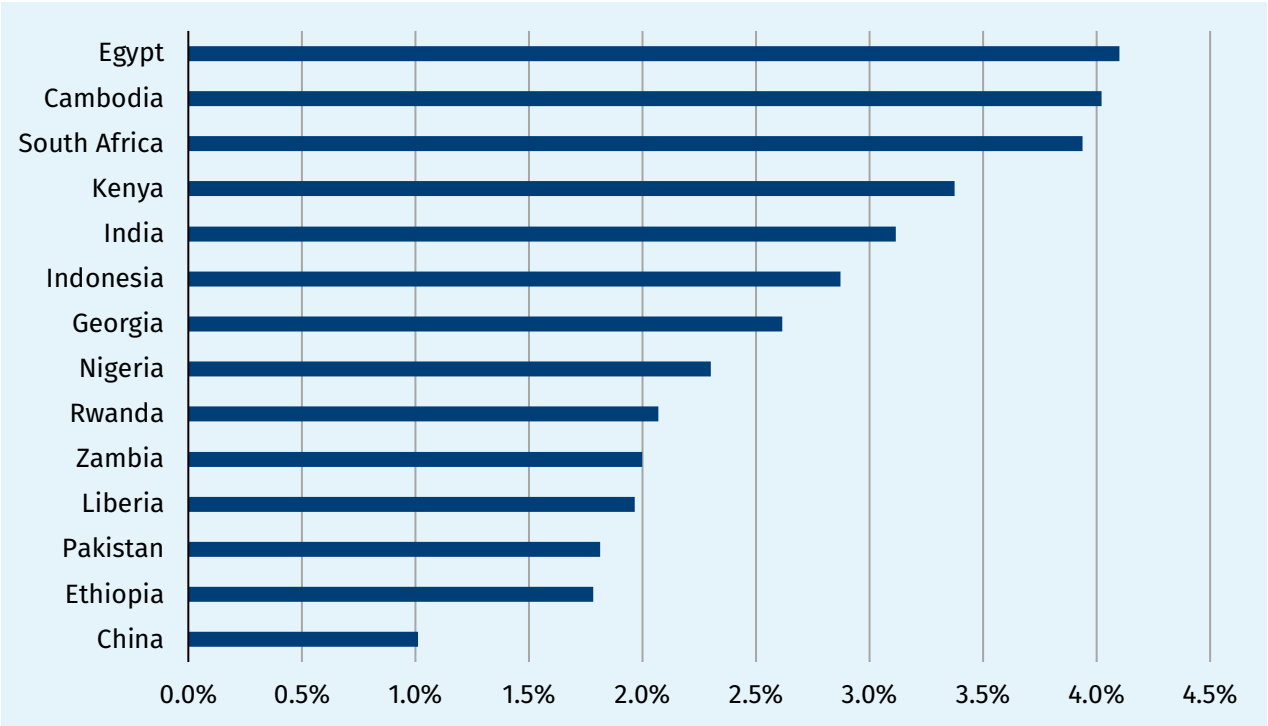


Figure 6: Mobile ownership year-over-year growth rate (per cent; 2022-2023, ranked by growth rate)



While smartphone adoption is growing, disparities exist in access for persons with disabilities. For example, in the United States, 72 per cent of persons with disabilities own a smartphone, compared to 88 per cent of persons without a disability [30]. Among LMICs, the gap can be significant. In countries like Algeria, only about 15 per cent of persons with disabilities own a smartphone, compared to 63 per cent of persons without disabilities. This represents an absolute gap of 48 percentage points, meaning that persons with disabilities have a 76 per cent lower smartphone ownership rate relative to those without disabilities [31].

In addition to smartphone access, there is a lack of understanding on accessibility features. Many persons with disabilities are unaware of the built-in accessibility features of their devices beyond the more widely known tools like video conferencing, or may struggle to use multiple accessibility features simultaneously, highlighting digital literacy as a challenge to adopting smartphones as AT [32]. For example, in Ghana, less than 20 per cent of persons with disabilities are aware of the accessibility features built into their mobile devices [33]. As highlighted in the previous report, product selection also matters, as lower-cost devices are often produced by smaller manufacturers that may not have the capacity to test all accessibility features thoroughly. Experts note that, in such cases, software updates can inadvertently alter or disrupt these features.

CHAI analysis found that governments in LMICs often perceive smartphones as luxury items rather than potential assistive products. This perception limits policy interest and procurement programmes, leading to funding schemes that prioritise specialised equipment, even when smartphone features align with AT requirements. While recent regulatory developments like the European Accessibility Act suggest a shift toward recognizing mainstream consumer technologies like smartphones as assistive tools, this trend has yet to take hold in LMICs [34].

LMIC government market

Some LMIC governments have begun recognizing smartphones as assistive products, but few have established direct procurement or subsidy programmes. Based on a survey across 10 LMICs, CHAI found that only three countries procure smartphones for public programmes, as shown in Table 6, but volumes are small. As experts indicated, the limited procurement indicates the nascent stage of LMIC government involvement in this market. Globally, some exceptions exist. Israel and Australia have integrated smartphones in their public funding schemes through technology-agnostic mechanisms that do not prescribe specific devices for different user needs.[7] However, no similar approaches were identified in LMICs.

7 Assistive technology (equipment, technology and devices). National Disability Insurance Scheme, d.

Table 6: Smartphone inclusion efforts and volume within public AT procurement programmes (within survey reporting period)

Country	Government efforts	# of smartphones distributed
Georgia	The State Programme for Social Rehabilitation and Childcare contains specific provisions for the financing of smartphones with videocall capabilities. 100% of device cost covered.	50
India	The Digital India initiative incorporates smartphones under certain programmes (e.g. Assistance to Disabled Persons scheme), with a focus on increasing access for young people seeking education.	Information not available
South Africa	Digital AT, under which smartphones may be included, can be provided directly through by the government, potentially subsidized, or accessible through an insurance scheme.	Information not available

A growing number of LMICs have developed priority assistive product lists, and while some include mobile phones, only two include smartphones. (see Table 7).

Table 7: List of countries with priority assistive product lists (APLs) that include smartphones

Country	Smartphone included in APL?
Cambodia	NA*
China	No
Egypt	NA*
Ethiopia	No
Georgia	NA*
Kenya	No (only simple phones included)
Liberia	Yes (categorized as a Personal Digital Assistant)
India	Yes
Indonesia	Not applicable*
Pakistan	No

Country	Smartphone included in APL?
Nigeria	No (only simple phones included)
Rwanda	Not applicable*
South Africa	Not applicable*
Zambia	Not applicable*

**Priority* assistive product list does not exist or is in development.

Note: some countries may have a list of priority assistive products, but this may not be officially categorized as an APL.

NGO market

Very few NGOs operate in this sector, and none have international reach, resulting in sparse market data. Experts highlighted that local NGOs, often in collaboration with Organizations of Persons with Disabilities (OPDs) provide smartphones including training, and maintenance. For example, Vision Aid has distributed smartphones for people with visual impairments in India [35]. However, the small number of NGOs engaged in smartphone distribution, and likely the smaller volume of smartphones distributed by each, makes it difficult to capture these data.

Collaboration between mobile network operators (MNOs), governments and NGOs can lower costs and improve distribution. Experts have pointed at MNOs, because of their unique position, as important stakeholders in driving increased accessibility of smartphones. This is echoed by GSMA, which specifically highlights multiple interventions by MNOs, including offering discounted mobile packages to customers with disabilities, and promoting products and services in accessible formats, following the guidelines laid out by the Global Accessibility Reporting Initiative [36]. Experts suggest that strengthening the collaboration efforts between MNOs, OPDs and government can result in more accessible products and services, which will further increase demand for them.

Conclusion

Smartphones consolidate multiple assistive functions. Demand for smartphones across LMICs is increasing, primarily driven by increasing smartphone affordability and mobile internet penetration, but access is lagging for persons with disabilities. In absence of government programmes, persons with disabilities rely on NGOs or private channels for access. Experts point at multiple opportunities to overcome these challenges, primarily through a stronger focus on policy reform, public-private partnerships and targeted digital literacy programmes to enhance smartphone access as an AT.

2.4 Spectacles

Spectacles compensate for refractive errors, such as myopia (near-sightedness) and presbyopia (age related far-sightedness), hypermetropia and astigmatism. According to WHO's 2019 World Vision Report, two of the most common refractive errors – myopia and presbyopia – affected 2.6 billion and 1.8 billion people respectively [37]. However, more than 64 per cent of the global population do not have access to appropriate spectacles, with 90 per cent of them living in LMICs [38], [39]. In addition, there exists gender inequality in access, with the effective coverage of refractive error services (eREC) being 10.4 per cent higher in men than in women [40]. It is recognized that this limited accessibility of spectacles in these regions is often due to the lack of public awareness, the high cost of corrective eyewear and a lack of optometric services [41].

Spectacles demand landscape

No robust estimates exist on the procurement of spectacles in LMICs, but purchasing is highly fragmented with a significant number of spectacles being paid for out-of-pocket by users. According to EYElliance, in LMICs spectacles provision in 2019 was 80 per cent from the private sector, 19 per cent from the public sector and 1 per cent from NGOs. The private sector in LMICs primarily serves higher-income customer segments. According to an EYElliance analysis in five African countries, the price of spectacles is typically 30-50 per cent higher than what consumers are willing to pay, leaving an access gap for low-income groups.[8] This gap is being filled by NGOs, corporate foundations and social enterprises across LMICs.

The demand for spectacles is rapidly growing due to the following factors: 1) an ageing population and the corresponding increase in presbyopia; 2) lifestyle changes, such as increased screen time leading to a rise in myopia; and 3) a growing policy focus. Global initiatives such as WHO's launched SPECS 2030 Initiative, which aims to support member States in achieving the 2030 target of a 40 per cent increase in effective refractive error coverage further raise awareness about the importance of spectacles in LMICs [42], [43].

For millions of people in LMICs who need spectacles, an estimated 80 per cent of procurement occurs through the private sector, while the remaining 20 per cent comes from the public sector, including NGOs, social enterprises and governments. NGOs account for around 25 per cent of the served demand, while corporate foundations—particularly OSELF—cover 50 per cent. Social enterprises contribute to less than 10 per cent of the demand. Among the governments that provide services, half offer subsidies or procure spectacles for their citizens. For example, the Indonesian Government procures 1.3 million spectacles annually.

8 EYElliance analysis.

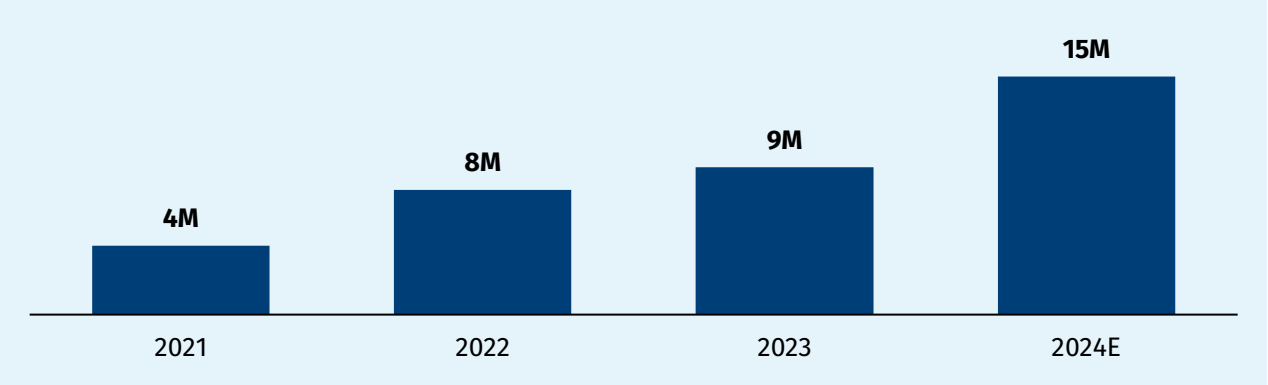
Based on limited available data, the procurement and provision of spectacles in LMICs appear to have grown in recent years. For example, VisionSpring, a global eyewear social enterprise, estimated 15 to 20 per cent annual increase in procurement over the last five years, with many other stakeholders reporting similar or even higher growth trends across their programmes.

The market coverage remains uneven and tied to economic development. In more developed economies like Indonesia, Nigeria and Kenya, governments are increasing the provision of spectacles, which boosts the overall demand. However, in lower-income countries such as Cambodia, Ethiopia and Liberia, governments are still highly dependent on NGOs to address the market gap, and unmet need remains very high.

NGO Market

Based on available data, the global aggregated NGO procurement volume for spectacles appears to be growing. In 2023, it is estimated that NGOs dispensed at least 9 million spectacles,[9] more than double the volume in 2021. According to estimates from the NGOs interviewed, the volume is expected to exceed 14 million units in 2024.

Figure 7: Aggregated NGO procurement volume for spectacles (2021–2024)

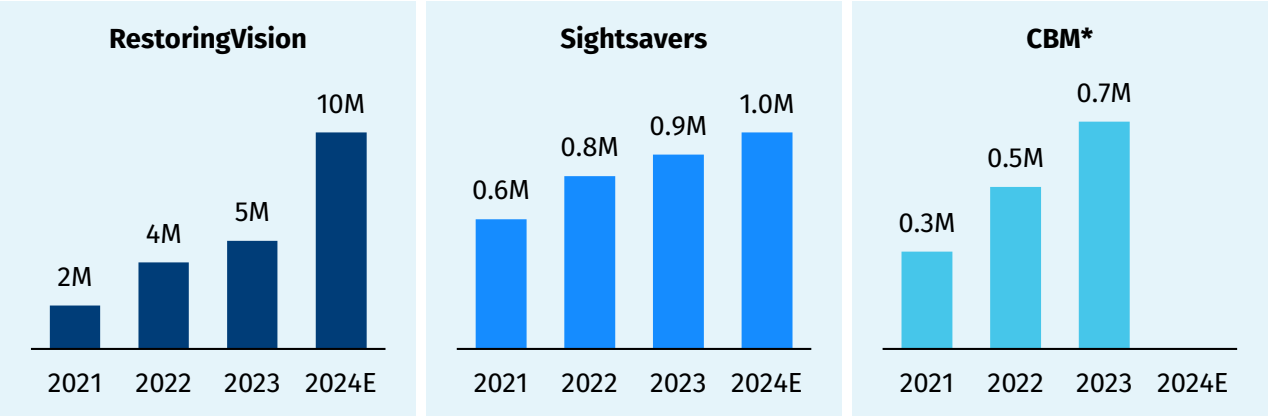


Note: 2024E is the estimated NGO procurement of spectacles in 2024

NGOs with the highest volumes in 2023 include RestoringVision (≈5 million), Sightsavers (≈ 1 million), and CBM (≈0.7 million), accounting for 74 per cent of the total aggregated volume within the NGO market. The combined volume of these three organizations in 2023 increased by 120 per cent over a two-year period. The upward trend is mainly driven by a growing focus on near-vision spectacles. RestoringVision donated 2.5 times more spectacles in 2023 than in 2021. The organization stated that the ready-made nature of near-vision spectacles allows them to quickly scale up distribution when donor funding increases. In 2022, RestoringVision raised US$3.1 million for their programmes which is a 60 per cent increase from 2021 [44].

9 Note: the volume includes NGO self-outreach programmes, procurement on behalf of governments and contributions as part of global initiatives and interventions.

Figure 8: Volume trends for the three NGOs with the highest spectacles dispensing volume (2021–2024)



Note: Data for 2024 is not available for CBM at the time of report publication

Table 8 summarizes the procurement activities of 10 global eye health NGOs between 2021 and 2023. It provides detailed information on procurement volume, product types, suppliers and pricing. Some key procurement patterns across the NGOs are as follows:

- NGOs with larger volumes often have long-term contracts. Smaller NGOs typically rely on local suppliers or import products independently, leading to higher prices and additional supply chain challenges.
- EssilorLuxottica is the largest supplier for NGO buyers, supplying at least 7 of the 10 shortlisted NGOs. Four of these NGOs procure their Ready2Clip™ spectacles.
- NGOs primarily procure single vision lenses. They commonly purchase products made with CR-39 material mostly given it is affordable, scratch-resistant and lightweight. For frames, both plastic and metal made products are in demand, with flexible designs (e.g. spring hinges) being preferred.
- There is also a growing trend in NGOs towards seeking diverse and more fashionable product designs as it helps with acceptability by all genders and age groups to ensure good compliance with the use of spectacles. The effect is pronounced in children; a 2016 study reveals that 75 per cent of children who were able to select the frames they preferred were still wearing their spectacles three to four months after the intervention [45].
- Among the NGOs, the lowest accessible price for near-vision spectacles is US$0.50 through direct procurement from a contract manufacturer. Across NGOs, near-vision spectacles are generally purchased at a minimum of US$1-2. For prescription spectacles, the procurement prices vary across the NGOs interviewed, ranging from US$1.50 to US$16, depending on factors such as procurement volume, functionality, quality and style requirements. Ready-to-assemble prescription spectacles Pop-ins™ and Ready2Clip™ are available to the NGOs in the US$1-5 range.

- Four procurement criteria are commonly observed across NGOs, including the following ones: 1) price; 2) quality – ISO standards are the most referenced, followed by WHO and each country's national standards, with the product durability also commonly assessed; 3) product range and diversity; and 4) local registration and presence. Global reference documents, such as WHO specifications, are leveraged in NGO procurement processes.

Table 8: Illustrative NGOs providing spectacles in LMICs

Organization	Brien Holden Foundation
About	Australian eyecare NGO; active in Australia and 5 LMICs.
Pairs of spectacles dispensed	• 2021: 91,722 • 2022: 75,033 • 2023: 31,722[10,11]
Type	• Near-vision spectacles (metal frames) • Frames (metal for the elderly; plastic for women and children) • Lenses (mainly CR-39)
Suppliers	• EssilorLuxottica • OneDollarGlasses
Pricing	• Near-vision spectacles: US$1- US$5 • Prescription: US$1.5 - US$10

Organization	CharityVision
About	US NGO focused on restoring curable sight impairment worldwide. Active in 30 countries.
Pairs of spectacles dispensed	• 2021: 136,161 • 2022: 150,701 • 2023: 160,059
Type	NA
Suppliers	NA

10 For 2024, an estimated total of 150,000 spectacles will be dispensed across Brien Holden's key eye health programmes in Pakistan, Papua New Guinea and Viet Nam. Pakistan accounts for 90 per cent of the total, with Papua New Guinea and Viet Nam each contributing around 5 per cent.

11 Note: 2021-2023 volume data are retrieved from the organization's annual reports. The volume data include eye devices, but the details of which devices and their respective percentages are not specified.

Organization	CharityVision
Pricing	NA

Organization	Christian Blind Mission (CBM)
About	International Christian NGO active in 40 countries
Pairs of spectacles dispensed	• 2021: 342,626 • 2022: 489,303 • 2023: 700,772
Type	• Prescription spectacles, with single vision or bifocal lenses. • Near-vision spectacles • Low Vision aids
Suppliers	• EssilorLuxottica • Local suppliers in each partner country
Pricing	• US$3 - US$55[12]

Organization	Fred Hollows Foundation
About	Australian NGO focused on treating and preventing vision problems across 25 countries.
Pairs of spectacles dispensed	• 2021: 81,084 • 2022: 141,789 • 2023: 154,476
Type	• Ready2Clip™ • Prescription spectacles (single vision, bifocal or progressive lenses)
Suppliers	• EssilorLuxottica 2.5 NVG • Local suppliers in each programme country
Pricing	NA

12 Note: CBM does not handle procurement directly; their programme implementation partners manage it. Additionally, some of the spectacles they dispense are donated and provided free of charge.

Organization	Helen Keller International
About	NGO providing vision screenings, eye exams, and prescription spectacles for vulnerable populations. Active in Cameroon, Bangladesh and the USA.
Pairs of spectacles dispensed	• 2022: 4,424 • 2023: 2,262 • 2024: 13,000 • 2025: 4,500[13]
Type	• Lenses • Frames (acetate, unisex with spring hinge) • Near-vision spectacles • Ready2Clip™ unisex
Suppliers	• SIVO Central Africa • EssilorLuxottica Foundation[14] • KHEA Foundation[15]
Pricing	• Ready2Clip™ frames: US$0.67 • Ready2Clip™ lenses: US$0.37 • Prescription: US$7- US$10 • Readymade near-vision spectacles: US$2.15

Organization	Light for the World
About	NGO committed to disability inclusion and eye health across 9 countries, primarily LMICs
Pairs of spectacles dispensed	• 2021: 900 • 2022: 5,580 • 2023: 6,500 • 2024: 2,200 • 2025: 5,000

13 Plan to procure 1,500 frames and 8,000 lenses in Cameroon.

14 Note: some spectacles are purchased from suppliers, others are directly donated by suppliers.

15 A non-profit organization collaborating with Helen Keller to provide affordable spectacles to garment workers in Bangladesh.

Organization	Light for the World
Type	• Frames • Lenses[16] • Ready2Clip™
Suppliers	• EssilorLuxottica • Local suppliers
Pricing	• Prescription: US$12 - US$16

Organization	Seva Foundation
About	Eye care NGO active in 20 countries
Pairs of spectacles dispensed	• 2021: 564,534 • 2022: 852,427 • 2023: 944,816
Type	• Hospitals procure frames, lenses, near-vision spectacles. • Some use Ready2Clip™ and other readymade options
Suppliers	• Some source locally and some hospital partners have existing contracts with companies like EssilorLuxottica.
Pricing	• Prices vary depending on the country and frame style

Organization	Sightsavers
About	NGO that prevents sight loss, avoidable blindness and treats eye diseases in 30 countries across Africa and Asia.
Pairs of spectacles dispensed	• 2020: 259,654 • 2021: 585,927 • 2022: 782,037 • 2023: 919,647 • 2024: >1 million • 2025: >1 million
Type	• Ready2Clip™ • Pop-ins™

16 Note: the products do not include rimless single vision (SV) or sphero-cylindrical lenses.

Organization	Sightsavers
Suppliers	• EssilorLuxottica • VisionSpring
Pricing	• Readymade near-vision spectacles: US$0.74 - US$1.05 • Ready to clip: US$1.97- US$2.04 • Customised: US$5- US$14

Organization	RestoringVision
About	NGO that runs vision care and spectacles delivery programmes in more than 150 countries. It serves as a supplier to many other NGOs that integrate vision services into their programmes
Pairs of spectacles dispensed	• 2021: 2 million • 2022: 4 million • 2023: 5 million • 2024: 10 million • 2025: 10 million[17]
Type	• Near-vision spectacles (over 95 per cent) • Few myopia prescription spectacles and sunglasses
Suppliers	• The supplier is FGX (a company under EssilorLuxottica) who manufactures in China
Pricing	• Near-vision spectacles: US$0.50

Organization	VisionSpring
About	Social enterprise provides spectacles, vision screening and training across 8 countries.
Pairs of spectacles dispensed	• 2021: 1 million[18] • 2022: <2 million • 2023: <2 million • 2024: 2.5 million • 2025: >3-4 million

17 Note: the numbers for 2024 and 2025 are target numbers.

18 VisionSpring has stated the number is lower because of COVID-19.

Organization	VisionSpring
Type	• Readymade near-vision spectacles • Prescription spectacles frames • Pop-ins™
Suppliers	• Long term contract manufacturer in Bangladesh, China, India, and Vietnam
Pricing	• Readymade near-vision spectacles: US$1 - US$8.5 • Frames: US$1 - US$10 • Pop-ins™ US$2.5- US$5

Government market

Based on limited data collection, government provision for spectacles is small and many LMICs still rely on NGOs to provide spectacles. Out of 12 countries surveyed, half procure or subsidize spectacles through public sector delivery channels, with examples given below:

South Africa	The Department of Health or provincial health departments typically manage spectacles procurement. The national and provincial tender process consists of several stages: planning, procurement initiation, selection and award, contract and implementation. When the value of the goods or services being procured is below the monetary threshold of ZAR 500,000 (US$2,860), a procuring entity may ask suppliers to directly provide quotations, instead of going through the full tender process.
Zambia	The government procures spectacles through public tenders or requests for proposals issued by Zambia's Public Procurement Authority (ZPPA). The latest tender for optical frames and lenses closed in November 2024, with a total bid value of ZMW555,050 (≈US$20,900) [20].

Governments subsidizing spectacles include Indonesia, Kenya, Nigeria and Rwanda.

Indonesia	The government subsidizes spectacles through its national insurance scheme. Subsidies range from IDR165,000 (≈US$11 dollars) to IDR330,000 (≈US$21 dollars). In 2018, the scheme subsidized 1,313,941 spectacles.

Kenya	Kenya officially launched its new national insurance scheme in October 2024, which has included spectacles as part of its social health insurance scheme benefit package [46]. A KES1,000 (≈US$8 dollars) subsidy per household is provided under the newly introduced benefit package, limited to beneficiaries below 18 years old [47].
Nigeria	The National Health Insurance Scheme subsidised spectacles up to a limit of NGN10,000 (≈US$27 dollars). The Ministry of Health of Ekiti State allocated a total federal budget of NGN20 million (≈US$54,000 dollars) for eye check-up and provision of spectacles.
Rwanda	The national health system includes eye care services and products, including spectacles. The country's National Plan of Action on Eye Health aimed to allocate a budget of US$20 million to national eye health services and provided 330,388 low-cost near-vision spectacles in health centres from 2018 to 2024 [48].

Conclusion

The current procurement volume in LMICs is still far below the level of needs. The lack of access is often due to low public awareness, the high cost of spectacles and insufficient optometric services. The private sector dominates the market but focuses more on the high-income segments in LMICs, while governments, NGOs, social enterprises and corporate foundations are filling the demand gap.

Government coverage remains uneven and tied to economic development. In more developed economies, governments are increasing spectacles advocacy and provision, which boosts overall demand. However, lower-income countries governments are still highly dependent on NGOs to address the market gap, and unmet need remains high. NGO procurement has seen an increasing trend in recent years, with locally available, low-price, high-quality and diverse designs being key purchasing criteria across NGOs.

2.5 Wheelchairs

Wheelchairs enhance personal mobility. They are designed for people who cannot walk or have difficulty walking, enabling them to move around and participate in everyday activities [49]. According to the WHO, approximately 1 per cent of the global population, or 80 million people, require a wheelchair [50]. A significant proportion, around 65 million individuals, is concentrated in LMICs. According to the WHO and UNICEF Global Report on Assistive Technology, between 65 and 95 per cent of those who need a wheelchair do not have access to one [1]. Appropriate wheelchairs prevent the development of secondary complications that may occur from incorrect device provision, incorrect fitting and poor positioning, such as pressure injuries, fixed postural deformities and loss of function.[19]

It is important to note that this report focuses solely on the number of wheelchairs being provided in LMICs as a measure of demand. It does not assess the appropriateness of the wheelchairs being provided, nor does it consider essential factors such as access to repair, maintenance, fitting, training and other critical aspects of service delivery, all of which are vital for ensuring the provision of an appropriate wheelchair.[20]

19 An "appropriate wheelchair" as defined by WHO is a wheelchair that meets the following factors:

- Meets the user's needs and environmental conditions
- Provides proper fit and postural support
- Is safe and durable
- Is available in the country
- Can be obtained, maintained and serviced in the country at an affordable cost.

WHO emphasizes that inappropriate wheelchairs can lead to poor outcomes for wheelchair users, including decreased health and mobility, development of secondary complications – which in cases of people with spinal cord injuries and similar conditions can cause premature death – participation barriers, and/or wheelchair breakdown resulting in disruption in use and the growing prevalence of wheelchair graveyards. Wheelchair provision can only enhance a wheelchair user's quality of life if all parts of the process are working well. This includes ensuring users have access to:

- Wheelchairs of an appropriate design along with appropriate seating/cushions and other postural support depending on need
- Wheelchairs that have been produced to appropriate standards
- A reliable supply of wheelchairs and spare parts
- Wheelchair services with trained staff that assist the user in selecting and being fitted with a wheelchair, provide training in its use and maintenance, and ensure follow-up and repair services.

Personnel involved in each area of wheelchair provision, including funders, procurement and clinical teams, need to have the correct skills and knowledge, underscoring the importance of training for those involved in wheelchair provision. The International Society of Wheelchair Professionals provides a comprehensive wheelchair provider certification programme which provides wheelchair providers with the minimum set of knowledge to assess and prescribe appropriate wheelchairs. Consulting wheelchair users in the region to ascertain appropriateness of services and products being used is critical.

20 Readers must reference this report along with WHO's guidance on provision of manual wheelchairs in less resourced settings. Additionally, the report does not further segment demand into adult and paediatric wheelchairs. The report also does not differentiate between manual and powered wheelchairs, nor does it report on wheelchair accessories such as cushions or postural supports.

Wheelchair demand landscape

Wheelchairs are classified into manual and powered variants. Within these, products can provide varying levels of postural support, dependent on the user's needs. Wheelchair users can be classified as having basic, intermediate or complex needs, depending on their medical condition which may be fast progressing, with different requirements for postural support, customization and time between clinical reviews. Wheelchair requirements vary based on the needs from childhood to young adult and even to old age. Accurate data on the global wheelchair market size remain limited. According to published market reports, manual wheelchairs accounted for over 60 per cent of the revenue share in 2022 [51].

While reliable statistics on the overall LMIC market segmentation are limited, this report applies a consistent methodology to generate indicative estimates. Although these are not comprehensive, they offer a useful approximation of market dynamics and scale of provision. However, donor aid remains an important source of wheelchair procurement. According to WHO, humanitarian crises have steadily increased the demand for assistive products suited for emergencies such as active wheelchairs [52]. However, the funding for wheelchair procurement has shifted. There is now less financial support from bilateral and multilateral donors for direct product procurement, except for emergency humanitarian needs. Instead, funding is increasingly directed toward building national systems for sustainable AT provision. While this shift aims to create long-term solutions, it does not necessarily translate into immediate product procurement, leaving a gap in the availability of assistive products. The effectiveness of system provision work depends upon product availability, and investment in system development needs to be accompanied by ensuring availability and accessibility of assistive products.

The wheelchair market in LMICs is driven by NGOs and social enterprises and supported by global procurement services like UNICEF and Consolidating Logistics for Assistive Products (CLASP). Overall, wheelchair market demand in LMICs is insufficient compared to need. For 65 million people who need a wheelchair in low- and middle-income countries, major NGOs, social enterprises, global procurement services and surveyed governments provide approximately 150,000 units annually, with few governments, such as South Africa, procuring and providing wheelchairs (≈23,000 annually). NGOs account for two thirds of the served demand, while social enterprises contribute 10 per cent and global procurement services 7 per cent.

NGO market

NGO demand for appropriate wheelchairs in LMICs is significant, with an estimated 94,000 units[21] in 2023. The Free Wheelchair Mission stands as the largest global buyer with 63,696 units. The two largest NGO buyers, Free Wheelchair Mission and the Church of Jesus Christ of Latter-day Saints (Latter-day Saint) Charities have developed custom wheelchairs specifically tailored to the needs of LMICs based on their assessment of an appropriate wheelchair.

These organizations have partnered with contract manufacturers in China and other LMICs. Key design considerations for these wheelchairs include adjustability to minimize the number of Stock Keeping Units, ease of assembly, durability in rugged environments, availability of locally sourced materials for repairs and cost-effectiveness – all critical factors driving NGO decision-making in wheelchair design.

Table 9: NGOs providing wheelchairs in LMICs

Organization	Christian Blind Mission (CBM)
About	International Christian Development Organization active in 40 countries
Volumes (units)	• 2021: 5,053 • 2022: 18,066 • 2023: 11,643
Type	• Not available
Suppliers	• Various products via CLASP • LDS charities own design • Motivation
Pricing	• US$250 - US$600

Organization	Free Wheelchair Mission (FWM)
About	Nonprofit organization with distribution in 33 countries
Volumes (units)	• Since 2001: >1.4 million units • 2021: 49,144 • 2022: 59,586 • 2023: 63,696 • 2024 (YTD): 40,830

21 Excluding CBM and ICRC volumes to avoid double counting with demand from FWM, LDS Charities, Motivation, ShonaquipSE and CLASP.

Organization	Free Wheelchair Mission (FWM)
Type	• Manual: 2 models for rugged conditions
Suppliers	• Own-design - contract manufacturing in India and China
Pricing	• US$96 including freight

Organization	International Committee of the Red Cross
About	Nonprofit organization with physical rehabilitation projects in 31 countries
Volumes (units)	• 2021: 9,528 • 2022: 10,229 • 2023: 8,974
Type	Manual: • 3-wheel fixed frame • 4-wheel folding • 3-wheel folding • Postural support • Sports
Suppliers	• Motivation • ShonaquipSE
Pricing	Not specified

Organization	The Church of Jesus Christ of Latter-day Saints– LDS charities
About	Faith-based organization active in 60 countries
Volumes (units)	• 2021 – 2023: 18,750 annually on average (based on orders from manufacturing partner in China)
Type	Manual: • Urban - 15 per cent • Rough Terrain - 12 per cent • Dual Terrain - 18 per cent • Standard - 53 per cent
Suppliers	• Own-design- contract manufacturing in China. • Local manufacturers in Brazil and South Africa (CE Mobility)

Organization	The Church of Jesus Christ of Latter-day Saints– LDS charities
Pricing	• US$100 - 275

Organization	Walkabout Foundation
About	UK and US charity operating primarily in Kenya, Uganda and Haiti
Volumes (units)	• 2021: 1,964 • 2022: 1,281 • 2023: 1,243 • 2024: 976 • 2025 (target): 1,464
Type	Manual: • Urban – 37-43 per cent • Rough Terrain – 37-54 per cent • Dual Terrain – 6-25 per cent
Suppliers	• Various products via CLASP • FWM
Pricing	• US$70 - US$350

Social enterprises

Social enterprises play an important role by producing and delivering affordable wheelchairs for LMIC environments. CLASP, a Momentum Wheels for Humanity social enterprise, Motivation and ShonaquipSE are three prominent social enterprises. Together these are serving approximately 17,000 units. Out of these, 45 per cent are for urban/semi urban settings with the remainder being either rough terrain or dual terrain wheelchairs.

Table 10: Social enterprises providing wheelchairs in LMICs

Organization	CLASP, a Momentum Wheels for Humanity (MWH) social enterprise
About	MWH works to promote inclusion for people with disabilities through strengthening rehabilitation and AT services, assistive product supply and provision, and inclusive disaster response. MWH operates the CLASP[22] supply chain mechanism.

22 CLASP was launched with USAID funding.

Organization	CLASP, a Momentum Wheels for Humanity (MWH) social enterprise
Volumes (units)	• 2021: 1,270 (all through CLASP) • 2022: 2,278 (through CLASP: 1,673) • 2023: 4,324 (through CLASP: 3,760) • 2024: 4,336 through CLASP: 3,595) • 2025: 5,000 (through CLASP: 4,000)
Type	Manual Postural Support Wheelchair Included in CLASP: • Urban/Semi-Urban • All Terrain • Postural Support • Transport • Sports
Suppliers	• Diversability Development Organization (DDO) • INTCO • Momentum Wheels for Humanity • Motivation • Participant Assistive • Roughrider America
Pricing	• US$90-US$850[23]

Organization	Motivation
About	Designing and supplying adult and paediatric everyday wheelchairs, sports wheelchairs, and postural support devices globally, along with training and services in East Africa and South Asia. Supplies to over 25 countries globally.
Volumes (units)	• 2021: 6,384 • 2022: 5,231 • 2023: 7,737 • 2024 (until Aug): 8,000

23 The lowest cost is for a transport wheelchair and highest for a sports wheelchair.

Organization	Motivation
Type	Manual: • Active dual terrain - 38% • Active rough terrain - 20% • Manual & postural support -16%
Suppliers	• Contract manufactured in China
Pricing	• US$233 - 408

Organization	ShonaquipSE
About	Providing paediatric wheelchairs and 24-hour posture support products, training and services in South Africa, Botswana, Namibia, Mozambique, Zimbabwe, Lesotho, Eswatini, Kenya, Uganda, Iraq and Georgia. Focus on addressing the needs of children and youth.
Volumes (units)	• 2021: 2,966 • 2022: 3,662 • 2023: 3,712 • 2024 (projected): 5,200

Type	• Sizes range from 1 year to adult
	• Postural Support wheelchairs
	• Attendant propelled posture support buggies
	• Active posture chairs
	• Power chairs
	• Back supports and 24-hour positioning devices
	• Suitable for
	  ◦ Urban
	  ◦ Semi-Urban
	  ◦ All Terrain
	  ◦ Off Road conditions

Suppliers	• Products locally designed and manufactured in South Africa with 90 per cent local sourced components. Designed to be fitted and maintained in under-resourced settings.
Pricing	• US$295 - US$920

Global procurement services for quality affordable wheelchairs

UNICEF and CLASP, a global marketplace for buyers in LMICs, provide quality affordable wheelchairs at their negotiated terms. Together, these two organizations are responsible for an estimated 10,000 products in 2023.

- Through global tenders, UNICEF, working with the WHO, has negotiated some of the lowest prices for quality-assured wheelchairs globally. For a product to be eligible for UNICEF tenders, it should conform to ISO standards. Eight different types of wheelchairs including one postural support wheelchair are available through UNICEF at a price range from US$250 to US$500.
- CLASP is a supply chain operated by Momentum Wheels for Humanity. It operates through a consolidation hub in China, enabling large or small mixed product orders. Since COVID, demand has increased by over 1,100 per cent in 2024 compared to 2021. Products are approved by the Product Advisory Council, which reviews documentation, ISO test results (ISO 7176) and conducts evaluations on usability, safety and quality. Manual active wheelchair prices range from US$250 to US$600.

Table 11: Global procurement services providing wheelchairs in LMICs

Organization	CLASP (MWH)
About	CLASP serves buyers, NGOs, and governments in LMICs. It has shipped to over 60 countries.
Volumes (units)	• 2021: 1,270 • 2022: 1,673 • 2023: 3,760 • 2024: 3,595 • 2025: 4,000
Type	• Urban/Semi-Urban • All Terrain • Postural Support • Transport • Sports

Organization	CLASP (MWH)
Suppliers	• Diversability Development Organization • INTCO • Momentum Wheels for Humanity • Motivation, • Participant Assistive • Roughrider
Pricing	• US$250 – US$600

Organization	UNICEF Supply Division
About	UNICEF's procurement services can be accessed by governments and development partners across 190 countries.
Volumes (units)	• To date: 6,000-7,000 units (since 2022)
Type	• Active Rough Terrain • Active Urban • Active Dual Terrain • Postural Support
Suppliers	• CE Mobility, • Diversability Development Organization • Invacare, • Motivation Participant Assistive • Rehasense SP • Spex, • Vicair BV
Pricing	• US$250 to US$500

Government market

Based on limited data, only 6 out of 12 countries (50 per cent) procure wheelchairs.

Examples of governments procuring wheelchairs:

Cambodia	The government procures wheelchairs through the Persons with Disabilities Foundation under the Ministry of Social Affairs, Veterans and Youth Rehabilitation. In 2023, based on pilot survey data, the government procured 1,540 wheelchairs at a price of US$195 to US$320.
China	The government procures wheelchairs through established procedures. Government tenders for medical supplies, including wheelchairs, are posted on the national official procurement platform, China Government Procurement Network, or their own provincial and municipal's Disabled Persons' Federation website. These announcements in general detail the technical specifications, quantity, delivery timelines and quality standards required for the wheelchairs.
Ethiopia	Based on a 2020 report, the government procured a few manual transport wheelchairs as one-off procurement for health centres.
South Africa	South Africa released its most recent transversal tender on the supply and delivery of wheelchair and sitting systems in January 2023 (bid number RT233). This tender covers a period of 60 months. According to a published report, South Africa has provided 23,000 wheelchairs on average annually between 2017-2020.
Zambia	The government is involved in the procurement of wheelchairs, through public tenders or requests for proposals, primarily issued by ZPPA. The latest tender for the supply and delivery of wheelchairs. The latest enquiry for supply and delivery was closed in May 2024, with 1 specialized wheelchair and 4 electric wheelchairs procured at a total cost of ZMW74.1 million (US$2.8 million).

Example of government subsidising wheelchairs:

Georgia	The budget allocated by the Georgian Government to wheelchairs was GEL 990,000 (approximately US$363,970) in 2021, according to WHO's ATA-C report in 2023. The government subsidized through the State Programme for up to GEL760 (approximately US$280) for manual wheelchairs and up to GEL5,053 (approximately US$1,858) for electric wheelchairs. A total of 416 state-subsidized wheelchairs were provided in 2020.

Conclusion

Free Wheelchair Mission remains the largest single provider. NGOs like the Church of Jesus Christ of Latter-day Saints- LDS charities and CBM contribute significantly to the

provision of assistive products in LMICs. Social enterprises offer tailored, affordable wheelchair solutions designed specifically for the challenging environments found in LMICs. The role of CLASP and UNICEF as a procurement service has been instrumental in facilitating the procurement process for buyers, NGOs and governments by providing quality-assured products and by creating a streamlined purchasing mechanism.

Alternative models for wheelchair provision in LMICs also exist and may be equally effective. For instance, supply chains that integrate providers from the private and social enterprise sectors have the potential to support local production. Ensuring continuity of access to a consistent range of products over time is important for clinical management, regular upgrades and replacements. Additionally, maintaining stable access to wheelchairs can influence affordability and accessibility of repair and maintenance services.

2.6 Recommendations to address demand challenges for assistive products

- **Enhance transparency in supply chains**: Improving visibility into procurement processes and supply chain logistics can streamline costs, reduce inefficiencies and promote accountability. Transparent systems enable stakeholders to optimize resources and ensure products reach underserved populations in LMICs.
- **Strengthen government policies and support**: Governments should develop and implement comprehensive policies for AT, including setting quality standards, streamlining procurement, national AT needs collection and allocating dedicated budgets. Policies should also support inclusion of AT in national insurance schemes and prioritize assistive technology in health and social welfare programmes. Governments should also consider policies to reduce costs such as removing duties for assistive products and provide incentives for local production and assembly, where feasible.
- **Address funding fragmentation**: Consolidating funding sources and encouraging multi-stakeholder partnerships to pool resources can streamline funding for AT. Donor-supported initiatives should align with national strategies to ensure sustainable financing, reducing reliance on ad-hoc NGO efforts.
- **Leverage innovation to bridge demand-supply gaps**: Investing in innovative solutions can make assistive products more available and/or more affordable. Examples include regionally manufactured wheelchairs, or ready2clip spectacles.
- **Promote market efficiency**: Supportive government policies and enhanced transparency can reduce inefficiencies and attract private sector engagement. Encouraging collaboration between governments, NGOs and social enterprises is essential to scale assistive technology markets effectively.
- **Provide training**: Training should be provided across the whole health system to increase awareness about existing and emerging low-cost and appropriate assistive technology solutions. This training should cover the identification of assistive technology needs, required specifications, available cost-effective appropriate product selection, proper prescription, fitting, user training, maintenance and follow-up services.
- **Invest in national awareness and outreach campaigns**: Improving understanding of assistive technology among the public, caregivers and frontline workers can be achieved through awareness and outreach campaigns. These campaigns should be integrated into primary healthcare systems, schools and community-based services. Emphasis should be placed on the benefits of early identification and use of assistive products.

3. Assistive products supply cost drivers

Given the heavy reliance on out-of-pocket expenditure in LMICs, the high final cost of assistive products remains a major barrier to access to and demand for AT. Affordability of assistive products is heavily affected by added costs from the manufacturer to the end-user. These include shipping and insurance fees, import duties and in-country taxes. Once the product arrives in the destination country, storage costs, in-land transportation fees and distributor margins further increase the final price. Understanding the breakdown of these costs is critical for addressing the affordability challenges faced by consumers in LMICs. This section provides visibility into these cost components to help buyers understand the drivers of the final landing price of assistive products.

The cost estimate analysis in this report is based on secondary research and primary data collection from social enterprises, corporate foundations and NGOs, reflecting actual costs across various markets, adjusted for geographical and economic differences. The provided cost ranges account for regional pricing variability influenced by factors such as import duties and taxes, fluctuating shipping costs due to geopolitical conditions and seasonal demand, varying distributor and retailer margins depending on market competitiveness and regulatory frameworks, economies of scale from bulk purchasing, and additional expenses arising from regulatory and administrative barriers like customs procedures and certification requirements.

By presenting both lower and higher estimates, the report aims to give stakeholders a realistic understanding of the cost implications in different procurement scenarios. It is important to note that this report focuses solely on supply cost associated with products and does not consider other essential costs such as diagnostics, fitting, repair, and maintenance, training and other critical aspects of service delivery. All of these are vital for ensuring the provision of an assistive product. It also does not consider non-financial costs such as lead times, among other factors.

Cost components that are critical across assistive products supply chains:

- **Taxes and duties, such as import duties, custom taxes and value-added tax**: Import tariffs can range from 10 per cent to 72 per cent depending on the product and country of import and are commonly passed on to the user. Waiving import tariffs can improve affordability. Recently, Zimbabwe eliminated import taxes on a list of assistive products for persons with disabilities, such as spectacles, hearing aids and several digital assistive technologies. (Zimbabwe reference: *Value Added Tax (General) (Amendment) Regulations, 2024 (No. 67)*) [53]. Nepal also recently announced that prescription spectacles will be exempt from VAT and Customs from 2026. However, even when countries waive tariffs on imported assistive products, the process to waive tariffs can be tedious and requests are often rejected without clear reasons. Therefore, many suppliers may prefer to avoid taking advantage of the exemptions to avoid additional bureaucratic paperwork that may require additional resources and time.
- **International shipping**: Ocean freights are typically most cost-effective across assistive products and done in a 20-ft or 40-ft container. It is one of the key cost components for bulkier products such as wheelchairs. Shipping prices can range from US$2,000 to US$20,000 based not only on container size, geography but also volatile factors such as the geopolitical situation, trade routes, port congestion, availability of shipping equipment and crude oil supply. For example, the shipping cost is particularly high in landlocked countries in Africa. Since January 2024, ocean freight rates have more than doubled due to longer Red Sea [54] transits resulting in a in June 2024 [55], with some forecasts indicating price increase to between US$20,000 and a Covid era peak of US$30,000.
- **Distributor and retail margins**: Distributor margins are one of the largest price components, especially in markets where assistive products are sold through a network of intermediaries. Distributor margins typically range from 5 per cent to 40 per cent, depending on the product and market, while retailer margins can be even higher, especially for spectacles, where margins can exceed 200 per cent.

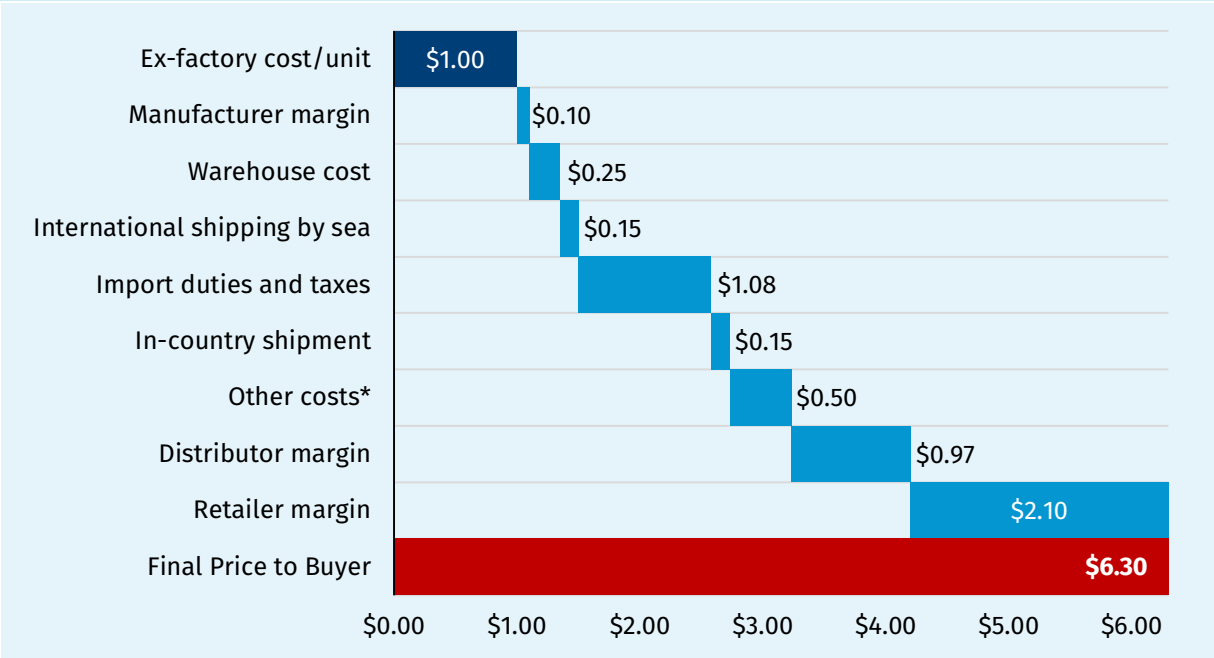
Across the assistive products analysed, the cumulative mark-ups from ex-factory to end-user prices are substantial – ranging from 25 per cent to over 500 per cent depending on the product type and country context. High base prices, particularly for products like hearing aids (typically US$100 to US$500), combined with layered costs such as international shipping, warehousing, distributor and retailer margins and import duties, result in prohibitively high prices for consumers in LMICs.

In some cases, such as spectacles, retailer margins alone can exceed 200 per cent, while in others, like wheelchairs, international shipping accounts for a major share of the final cost due to bulk and logistics constraints. These inflated cost structures not only disincentivise investment and scale but also exclude many individuals from accessing essential assistive products.

Example of cost component included in the final price of assistive products to buyers:

For a shipment of spectacles to Bangladesh, the final landing price with inclusion of different costs associated in supply, in addition to product cost, was US$6 for the product that cost one-dollar ex-factory.

Figure 9: Example of cost component for eyeglasses shipment to Bangladesh



**Note:* Other costs include quality inspection costs, management costs, clearing + forwarding agent fees, etc.

Cost component analysis for spectacles supply:

The final cost of spectacles for end users in LMICs are estimated between 63 per cent to greater than 510 per cent of the ex-factory costs, depending on import tariffs, inventory and shipment costs, distributor and retailer margins and other associated costs. All these components significantly influence the final price to the consumer, with import duties and retailer margins contributing the most. Within this import taxes and duties significantly contribute to the higher costs and can contribute from 0-100 per cent of the increase in costs. Across the assistive products analysed, the cost mark-ups are the highest for spectacles, especially since they are often considered luxury goods and do not benefit from exemption of other assistive products.

Table 12: Cost component for spectacles supply

Cost Component	Lower estimate	Higher estimate
Total shipment cost	23 per cent	55 per cent
○ Warehouse cost	10 per cent	25 per cent
○ International shipping	10 per cent	15 per cent
○ In-country shipment	3 per cent	15 per cent
Taxes and duties: import duty/custom tax/VAT	0 per cent	>100 per cent
Other associated cost[24]	25 per cent	50 per cent
Distributor margin	15 per cent	>95 per cent
Retailer margin	0 per cent	>210 per cent
Additional cost	**63 per cent**	**>510 per cent**

- **Shipment cost (23 per cent - 55 per cent)**: The main components are warehouse costs (10-25 per cent), international shipping (10–15 per cent) and in-country shipment (3-15 per cent). Spectacles logistics are typically managed by external third-party logistic companies, with ocean freight being the most common method. Most shipments originate from China. While shipping costs are generally consistent across destinations, they tend to be slightly lower for Asian countries compared to more distant regions like Africa.
- **Import duty, custom taxes, and value added tax (0 per cent - >100 per cent):** Unlike other medical equipment, spectacles are often classified as luxury goods and not always as assistive products and typically do not receive widespread tax exemptions in LMICs. For example, the import duty and custom taxes is around 50 per cent in Kenya and 108 per cent in Bangladesh[25]. It is important to note that these taxes not only include import duties, but also various other import fees imposed by governments. Below is an example from Ghana that outlines the key import duties and customs taxes applicable to spectacles.
    - In addition, fluctuating tax classifications and regulatory changes for optical products can create inconsistent pricing, complicating inventory management and financial planning for businesses operating across multiple jurisdictions. Frequent tax changes may also increase compliance costs, which can be

24 Other Associated Costs include the rest associated costs on operations such as quality inspection costs, management costs, clearing + forwarding agent fees, among others.

25 Note: Regarding import tax and duties, the cost incurred before in-country, such as freight cost, among others, are also taxable value in any calculation.

passed on to consumers, impacting affordability. It is important to note that tax exemptions should apply to all clinically viable custom-made or ready-made optical frames and lenses, including those for children or designed for high myopia or astigmatism, to ensure equitable access for people with diverse needs.

Table 13: Key tax components for spectacles import in Ghana

#	Tax item	Additional cost
1	Import VAT	17 per cent
2	Import Duty	9 per cent
3	Import National Health Insurance Levy	3 per cent
4	Ghana Education Trust (GET) Fund Import Levy	3 per cent
5	Special Import Levy	2 per cent
6	COVID-19 Health Recovery Levy	1 per cent
7	Ghana Export-Import Bank Levy	1 per cent
8	ECOWAS Levy	1 per cent
9	Network Charge	0.5 per cent
10	African Union Levy	0.5 per cent
	Total	**38 per cent**

- **Other associated cost (25 per cent - 50 per cent):** Additional associated costs related to spectacles procurement include quality inspections, management fees, clearing and forwarding charges and other related expenses.
- **Distribution margin (15 per cent - >95 per cent) and retailer margin (0 per cent - >210 per cent):** These account for the largest portion of the price markup. NGOs, such as Brien Holden, VisionSpring, and RestoringVision, charge a minimal margin to customers, around 0 per cent-10 per cent. However, commercial retailer margins are estimated to be at least 210 per cent. Profit margins here are closely linked to the costs and inputs required to sustain business operations. Supporting distributors and retailers to reduce costs and ease operational difficulties could potentially help lower expenses.

Cost component analysis for hearing aids supply:

The final cost of hearing aids for end users in LMICs are estimated between 25 per cent to greater than 100 per cent of the ex-factory cost, depending on import tariffs,

inventory and shipment cost and distributor margins. Note that the base price of hearing aids is already high – typically ranging from US$100 to US$500 – and additional markup on that further renders them entirely prohibitive for LMICs. Four major cost components significantly influence the final price to the consumer and distributor margins account for the largest proportion. While import duties and taxes may be a significant contributor to the cost, many countries may apply some exemptions.

Table 14: Cost component for hearing aids supply

Cost Component	Lower estimate	Higher estimate
Taxes and duties: import duty/custom tax/VAT	0 per cent	41 per cent
Shipment, inventory, and in-country transport cost	20 per cent	40 per cent
Quality inspection cost	0 per cent	10 per cent
Distributor margin	5 per cent	>15 per cent
Additional cost	**25 per cent**	**>106 per cent**

- **Import duty, custom taxes and value added tax (0 per cent-41 per cent):** Import duties and custom taxes for hearing aids vary by country and depend on the national trade policies, tariffs and import classifications applied to assistive products. For example, the import tax is 16 per cent in Jordan and the value added tax plus other taxes are 41 per cent in Kenya.[26] Tariffs are typically exempted for import if demonstrated that it will be provided to people with hearing loss. Organizations importing hearing aids indicated that understanding of the local regulations and rules are critical along with building a relationship with the customs agents and having good negotiation skills to get imported hearing aids tax exempt.
- **Shipment, inventory and in-country transport cost (20 per cent - 40 per cent):** In-country transport costs are estimated to account for 20 per cent to 40 per cent of the total cost of hearing aids. Storage costs can fluctuate, particularly when a "new" type of hearing aid is imported. In such cases, additional storage time and cost is often required, as authorities may request extra documentation due to unfamiliarity with the product.
    - For example, an organization in Peru experienced delays when authorities requested more documentation for wireless microphone systems, as

26 VAT and import duties can be waived if the organization obtains a waiver and the pre-export verification of conformity (PVOC) to standards in advance. It is also waived for individual with disability importing for personal use.

it was the first time this technology had been imported as a donation. Furthermore, the warehouse company partnered with the shipping firm was less cooperative with non-profit entities. Typically, the partner would receive a "Donation Certificate" to reduce storage costs by 60 per cent-100 per cent, depending on the warehouse, but this cooperation was not extended in this instance.

- **Distributor Margin (5 per cent-15 per cent):** Based on data gathered through interviews during this report, distributor margins typically range between 5 per cent and 15 per cent. However, various studies suggest that these margins can be as high as 400 per cent [56], significantly inflating the cost of hearing aids for consumers.

Cost component analysis for prostheses components supply:

The final cost of prostheses for end users in LMICs are estimated between 30 per cent to greater than 115 per cent of ex-factory costs, primarily driven by transportation costs and import taxes. In addition to these mark-ups during product procurement, the service fees associated with prostheses fittings are another key factor influencing the final price paid by the customer.

The ICRC estimates that the service cost is the largest component of the entire process and could further increase the product cost by an additional 100 per cent. In terms of the service cost, one prosthetic care company indicated that the labour cost of the certified prosthetist is one of the most significant components. The limited availability of certified prosthetists is a major cause of restricted access to prosthetic care worldwide.

Table 15: Cost component for prostheses component supply[27]

Cost Component	Lower estimate	Higher estimate
Taxes and duties: import duty/custom tax/VAT	0 per cent	45 per cent
Shipment, inventory and in-country transport cost	25 per cent	40 per cent
Distributor and retailer margin	5 per cent	>30 per cent
Additional cost	**30 per cent**	**>115 per cent**

- **Import duty, custom taxes, and value added tax (0 per cent-45 per cent):** Import taxes are one of the key price components. Some countries, like Zambia, exempt

27 The data were collected and consolidated from multiple international NGOs that import prostheses.

import taxes for prostheses. Across other LMICs, import taxes still apply. For example, in India, the rate is 10 per cent, in Ethiopia 15 per cent and in Kenya 45 per cent. A challenge for prostheses is that it is not always imported as a finished product and that it can be difficult to obtain a tax exemption when one is importing spare parts or raw materials which can have other uses.

- **International shipping (25 per cent-40 per cent):** Due to the customized nature and higher unit price of prostheses, bulk purchasing is uncommon, leading to smaller orders and higher transportation costs. Additionally, while most prostheses components are manufactured in China, the lack of trade agreements makes buying directly from China to Africa more expensive than routing through the USA or Europe first, further driving up transportation costs.
- **Distributor and retailer margin (5 per cent - >30 per cent):** In private markets, margins are estimated to be at least 30 per cent. These high margins are more common in LMICs than in HICs due to limited market competition and low information transparency.

Cost component analysis for wheelchairs supply

The final cost of wheelchairs for end users in LMICs are estimated at between 28 per cent - 255 per cent, depending on the shipment route, import tariffs and distributor margins. Four major cost components significantly influence the final price to the consumer with distributor margins accounting for the largest proportion. Shipment costs are the major cost drivers due to the bulky nature of the products. While import costs can vary and many countries may have exemptions that are variably applied.

Table 16: Cost component for wheelchair supply

Cost Component	Lower estimate	Higher estimate
Taxes and duties: import duty, custom tax, VAT	0 per cent	20 per cent
Shipment cost	15 per cent	20 per cent
Quality inspection cost	5 per cent	15 per cent
Distributor margin	8 per cent	200 per cent
Additional cost	**28 per cent**	**255 per cent**

- **Import duty, custom tax and value added tax (0 per cent - 20 per cent):** Import duties and custom taxes vary by country and depend on the national trade policies, tariffs and import classifications applied to assistive products. For example, India has a custom duty of 10 per cent, a social welfare surcharge of 10 per cent on duty, a 5 per cent value-added tax on product value and custom duty

and a stamp duty of 0.1 per cent on Cost, Insurance, and Freight value and total duty.

    - Similarly, while Ethiopia has 0 per cent custom duty, there is a value added tax of 15 per cent, a withholding tax of 3 per cent and a social welfare tax of 3 per cent. Tariffs are typically exempted for import for humanitarian donations. Processing of import tax exemption usually takes around 20 to 80 man-hours and incur fees of US$100 to US$1,000 dollars. However, demurrage and storage costs caused by delays in customs clearance can cost up to US$10,000 [57].

- **International shipping (15 per cent-20 per cent):** Wheelchairs are bulky and typically transported by ocean freight. A 40-ft container accommodates approximately 160-300 wheelchairs depending on the type and size. Specialized posture support devices for intermediate and advanced users are often bulkier and a 40-ft container can accommodate 160-220 postural support wheelchairs.

    - While 250-300 units of standard wheelchairs for basic need can be accommodated in a 40ft container, mixed content containers with optimal utilization of container space for specific types of wheelchairs is key. For smaller orders, such as a shipment of 80 postural support wheelchairs, logistics costs can increase to 30 to 40 per cent of the ex-factory price, making the products significantly more expensive for the consumer.

- **Quality inspection (5 per cent-15 per cent):** Many buyers mandate quality inspections carried out in the country of origin before the shipment and at the port of delivery. In either case, the cost of these inspections, including certification fees, testing, or regulatory approvals, adds to the price. Typically, shipping paperwork-related costs for wheelchairs range between 5 to 15 per cent. For example, importing wheelchairs to Kenya requires an Import Declaration Form prior to shipment arrival, a Pre-Export Verification of Conformity (PVoC) and local inspection and clearance at the destination port.

    - The PVoC process, which adds approximately 1 per cent to the product cost, is complex and often requires the manufacturer to coordinate with a third-party agent on behalf of the customer. After the paperwork is approved, an inspection is conducted during cargo loading. Upon arrival, local inspection and final clearance through a third party can add an additional 10 per cent to the product cost, further increasing the overall expense.

        - A PVoC is required for shipments to (but not limited) Algeria, Botswana, Burundi, Cameroon, Central African Republic, Congo, Côte d'Ivoire, Egypt, Ethiopia, Gabon, Ghana, Iraq, Kenya, Kuwait, Lebanon, Libya, Mali, Mauritania, Morocco, Nigeria, Qatar, Saudi Arabia, Somaliland, Sudan, Tanzania, Uganda, United Arab Emirates and Zimbabwe.

        - Some countries, such as Georgia and Kenya also require Certificates of Origin that need to be issued by national Chambers of Commerce and be obtained before shipment.

- **Distributor margin (8 per cent - 200 per cent):** Wheelchairs typically sold through distributors in-country, who handle storage, marketing and in-country logistics. Typically, the supply chain for wheelchairs is made of multiple sellers and markups at each seller adds up. Distributor margins range between 8-10 per cent on the lower side to above 200 per cent of the wheelchair's ex-factory cost at the higher end, depending on the size of the order, market conditions, and the level of service provided. In regions with less competition or limited distribution networks, these margins can be even higher.
    - The above estimate of markup does not include the assessment, fitting and follow up and maintenance costs which, if not provided through the government health and education systems, can amount to another 20 per cent of cost.
- **In-country transport (>1 per cent):** In-country transportation cost of the wheelchairs to different service locations depends on the number of locations and the distance from the warehouse. These typically cost more than a few hundred dollars per order and could vary depending on how remote the place of delivery is. Delivering wheelchairs to very remote areas often requires a main courier and then a local extension courier to the outlying venue.

Recommendations to optimize supply cost

The following key recommendations can help reduce costs and improve access:

All products

- **Import tax exemptions** (intervention led by governments)
    - Lower or eliminate import duties and customs taxes for priority assistive products, including spectacles which are more likely to be neglected.
    - Inclusion on national essential item lists can facilitate advocacy for tariff removal or reduction.
    - Streamline and simplify process to get duties waiver while importing assistive products
- **Optimize shipping and logistics** (intervention led by buyers – governments, NGOs)
    - Maximize container capacity for international shipments. Ordering in full container loads, particularly for wheelchairs, can reduce logistics costs from 30-40 per cent to 15-20 per cent of the ex-factory price.
    - Explore opportunities to pool orders with other organizations or buyers to achieve full container loads while avoiding excess inventory.
    - Leverage shipment reports to better plan order placement and avoid peak-time shipping.
- **Facilitate in-country assembly, repair, and maintenance** (intervention led by governments, donors)
    - Based on needs assessment and feasibility, invest in local manufacturing or assembly of assistive products to reduce import dependency, save on shipping charges and ensure access to spare parts and maintenance.
    - Build in-country stock and establish regional purchasing facilities to reduce dependency on repetitive imports, minimizing associated costs and time delays.

Spectacles

- **Strengthen regional distribution networks** (intervention led by governments, donors)
    - Reduce dependency on overseas imports by enabling bulk procurement of fast-moving lenses and frames.

- Lower international shipping costs by creating regional hubs at strategic locations and advocate for reducing inter-state trade barriers.

Prostheses

- **Lower costs through purchasing collectives and corporate responsibility** (intervention led by buyers – governments, NGOs)
  - Collaborate with regional or national purchasing collectives to secure discounted product prices and reduced transportation costs.
  - Advocate for increased corporate responsibility by global manufacturers to improve affordability and accessibility.

Hearing aids and wheelchairs

- **Reduce distributor and retailer margins** (intervention led by governments)
  - Direct government procurement from manufacturers can eliminate distributor or retail margins, reducing costs.

Hearing aids, prostheses, and wheelchairs

- **Leverage local warehouses** (intervention led by buyers – governments, NGOs)
  - Partner with mission-aligned local warehouses focused on increasing access for people with limited resources.
  - Negotiate favourable storage terms to improve availability and affordability.

4. Conclusion

The Assistive Products Market Report 2025 reaffirms the critical need to address systemic barriers, especially in LMICs, where access to AT remains severely limited. Building on the insights from the 2024 report, this edition highlights persistent challenges such as inadequate funding, fragmented procurement systems and supply chain inefficiencies leading to higher costs. Despite the efforts of NGOs, corporate foundations and select government initiatives, the provision of assistive products remains insufficient to meet the current and growing global demand, particularly among vulnerable populations.

Lack of reliable data on demand and procurement volumes complicates suppliers' efforts to plan production and distribution effectively. Suppliers face an unpredictable business environment due to fragmented funding models and inconsistent policy frameworks across LMICs, limiting their ability to scale operations and optimize supply chains. This report applies a consistent methodology to generate indicative estimates, offering a useful approximation of market dynamics and scale of provision.

Additionally, the report underscores the need for coordinated action by governments, international donors and private sector actors. Recommendations include streamlining procurement processes, reducing supply chain costs related to shipping, import duties and in-country logistics, and fostering public-private partnerships that can enhance product availability. Governments must prioritize the inclusion of assistive technologies in national health and social welfare programmes, which would create more stable, long-term demand for suppliers and ensure access to and uptake of assistive products by their people.

Ultimately, the pathway to achieving equitable access to assistive products will require a multi-stakeholder approach, focusing on building resilient supply chains, promoting innovation in product design and distribution and mobilizing increased financial resources. By addressing these critical gaps, the assistive products market can move closer to ensuring that all individuals, regardless of geography or economic status, have access to the essential technologies they need to live healthy, empowered lives.

References

[1] World Health Organization and the United Nations Children's Fund (UNICEF) (2022). Global report on assistive technology. Geneva, at www.unicef.org/reports/global-report-assistive-technology

[2] ATscale and Clinton Health Access Initiative (2024). Assistive Products Market Report 2024, at www.atscalepartnership.org/assistive-products-market-report

[3] Coherent Market Insights (2025). Assistive Technology Market Analysis, at www.coherentmarketinsights.com/market-insight/assistive-technology-market-5911

[4] Market Research Future (2025). Assistive Technology Market Research Report, at www.marketresearchfuture.com/reports/assistive-technology-market-29777

[5] WHO (2024). Factsheet on ageing and health, at www.who.int/news-room/fact-sheets/detail/ageing-and-health

[6] WHO (2024). Factsheet on noncommunicable diseases, at www.who.int/news-room/fact-sheets/detail/noncommunicable-diseases

[7] Essilor Luxottica (2023), Sustainability Report, at www.essilorluxottica.com/en/cap/content/171882/

[8] WHO (2021). World Report on Hearing, at www.who.int/publications/i/item/9789240020481

[9] Orji, A, Kamenov, K., Dirac, M., Davis, A., Chadha, S. and Vos, T. 'Global and regional needs, unmet needs and access to hearing aids'. London: *International Journal of Audiology*; 2020 March. Available from: pubmed.ncbi.nlm.nih.gov/32011190/

[10] EHIMA, 'Hearing aid sales', at www.ehima.com/about-ehima/hearing-aid-sales/

[11] ATscale (2020). The case of investing in Assistive Technology, at: www.atscalepartnership.org/investment-case

[12] WHO (2016). WHO Priority Assistive Products List, at: iris.who.int/bitstream/handle/10665/207694/WHO_EMP_PHI_2016.01_eng.pdf?sequence=1

[13] WHO (2017). Preferred profile for hearing-aid technology suitable for low- and middle-income countries, at: iris.who.int/bitstream/handle/10665/258721/9789241512961-eng.pdf?sequence=1

[14] WHO (2023). Report. Hearing aid service delivery approaches for low and middle-income settings, at: iris.who.int/bitstream/handle/10665/376092/9789240087927-eng.pdf?sequence=1

[15] WHO (2017). WHO Standards for Prosthetics and Orthotics, at www.who.int/publications/i/item/ 9789241512480.

[16] International Committee of the Red Cross (2023). ICRC Physical Rehabilitation Programme (PRP) Annual Reports 2021-2023.

[17] International Committee of the Red Cross (2023). ICRC Physical Rehabilitation Programme Annual Report 2023.

[18] Humanity & Inclusion (2023). HI Network's Annual Report 2023.

[19] Rural Ontario Medical Programme (2023). ROMP Annual Report 2023.

[20] Zambia e-government procurement platform, at: eprocure.zppa.org.zm/epps/cft/prepareViewCfTWS.do?resourceId=9038601

[21] WHO (2023). A situation assessment of assistive technology in Georgia. Report, at www.who.int/europe/publications/i/item/WHO-EURO-2023-7227-46993-68660

[22] Indonesia e-katalog, at: e-katalog.lkpp.go.id/

[23] WHO (2018). WHO Indonesia Assistive Technology Capacity Assessment Report, 2018.

[24] Martiniello, N. et al. 'Exploring the use of smartphones and tablets among people with visual impairments: Are mainstream devices replacing the use of traditional visual aids?' *Journal of Assistive Technology*, 17 Nov 2029. Available at: doi.org/10.1080/10400435.2019.1682084

[25] ATscale (2023). 'Assistive technology in your pocket: The transformative potential of smartphones. Available at atscalepartnership.org/news/2023/5/30/assistive-technology-in-your-pocket-the-transformative-potential-of-smartphones

[26] Anthony Giannoumis. Funding and provision models for mobile technology for persons with disabilities. Studies in Health Technology and Informatics, IOS Press Ebook, vol. 303, pp.10-17. Available at doi.org/10.3233/SHTI230393

[27] GSMA (2019). Understanding the mobile disability gap, Dec. 2019, at www.gsma.com/solutions-and-impact/connectivity-for-good/mobile-for-development/wp-content/uploads/2019/12/GSMA_Understanding-the-mobile-disability-gap_116pg_Accessible.pdf

[28] AT2030. 'Mobile as AT Kenya'. Available at: at2030.org/mobile-as-at-kenya/

[29] GSMA. GSMA Mobile connectivity index, at www.mobileconnectivityindex.com/index.html#

[30] Americans with disabilities less likely than those without one to have traditional computer, smartphone. Pew Research Center, at www.pewresearch.org/short-reads/2021/09/10/americans-with-disabilities-less-likely-than-those-without-to-own-some-digital-devices/ft_2021-09-10_disabilitydigitaldivide_01-png/

[31] GSMA (2021). The mobile disability gap report 2021, December 2021, at www.gsma.com/solutions-and-impact/connectivity-for-good/mobile-for-development/wp-content/uploads/2021/11/Mobile-Disability-Gap-Report-2021.pdf

[32] AT2030 (2023). Assistive technology in your pocket: The transformative potential of smartphones. Available at: https://at2030.org/assistive-technology-in-your-pocket/

[33] GSMA (2022). Closing the mobile disability gap in Ghana: Insights and recommendations, at www.gsma.com/solutions-and-impact/connectivity-for-good/mobile-for-development/wp-content/uploads/2022/04/Closing-the-mobile-disability-gap-in-Ghana.pdf

[34] Assistive Technology Industry Association (2024). 'Assistive Technology: Outcomes and Benefits'x, Vol. 18, Spring 2024, at www.gari.info/docs/eng/2024_04_ATOB_V18_FINAL-1.pdf

[35] Vision-aid. 'How Smartphones are lighting the lives of the visually impaired'. at visionaid.org/empower/smartphone-initiative/

[36] GSMA (2019). How mobile operators are driving inclusion of persons with disabilities, at www.gsma.com/solutions-and-impact/connectivity-for-good/mobile-for-development/wp-content/uploads/2019/12/GSMA_How-mobile-operators-are-driving-inclusion-of-persons-with-disabilities_Accessible_v2.pdf

[37] WHO (2019). World Report on Vision, 2019, at www.who.int/publications/i/item/9789241516570

[38] International Council of Ophthalmology. WHO Consultation on Uncorrected Refractive Errors, at https://icoph.org/who-consultation-on-uncorrected-refractive-errors/

[39] WHO (2023). Increasing eye care interventions to address vision impairment, Technical brief, at www.who.int/publications/m/item/increasing-eye-care-interventions-to-address-vision-impairment

[40] WHO (2022). Report of the 2030 targets on effective coverage of eye care, at www.who.int/publications/i/item/9789240058002

[41] WHO (2023). Blindness and vision impairment, at www.who.int/news-room/fact-sheets/detail/blindness-and-visual-impairment

[42] McCormick, Ian, et al. (2019), 'Effective refractive error coverage: an eye health indicator to measure progress towards universal health coverage'. Effective refractive error coverage (eREC) is calculated by eREC = ((met need)/(total need)) × 100. It is an eye health indicator to measure progress towards universal health coverage. Available at: pmc.ncbi.nlm.nih.gov/articles/PMC7004023/

[43] WHO. SPECS 2030, at www.who.int/initiatives/specs-2030

[44] RestoringVision (2022). 2022 Annual Report. Available at: restoringvision.org/wp-content/uploads/2023/05/FINAL-FOR-RELEASE-RestoringVision_AnnualReport_2022_5.3.2023-2.pdf

[45] Morjaria, P., Murali K, Evans, J. and Gilbert, C. 'Spectacle wearing in children randomised to ready-made or custom spectacles, and potential cost savings to programmes: study protocol for a randomised controlled trial'. Trials. 2016;17:36. Available at: trialsjournal.biomedcentral.com/articles/10.1186/s13063-016-1167-x

[46] Republic of Kenya Ministry of Health, 'Kenya to Officially Launch Social Health Authority on October 1, 2024', at www.health.go.ke/kenya-officially-launch-social-health-authority-october-1-2024

[47] Okaka, D. SHA Benefit Package. Kenya Healthcare Federation, at: www.khf.co.ke/wp-content/uploads/2024/07/SHA-Benefit-Package-Summary-1-1.pdf

[48] Republic of Rwanda. Ministry of Health. National Plan of Action on Eye Health 2018-2024, at: www.moh.gov.rw/fileadmin/user_upload/Moh/Publications/Strategic_Plan/The_3rdNational_Plan_of_Action_on_Eye_Health.pdf

[49] WHO. Health products policy and standards, at: www.who.int/teams/health-product-policy-and-standards/assistive-and-medical-technology/assistive-technology/wheelchair-services

[50] WHO (2023). Wheelchair provision guidelines, at: iris.who.int/bitstream/handle/10665/368493/9789240074521-eng.pdf?sequence=1

[51] Grand View Research, Market Analysis Report 2023-2030, at: www.grandviewresearch.com/industry-analysis/wheelchair-market

[52] WHO, 'Providing rapid access to assistive technology in times of war – lessons learned from Ukraine', 13 March 2024, at: www.who.int/europe/news/item/13-03-2024-providing-rapid-access-to-assistive-technology-in-times-of-war---lessons-learned-from-ukraine

[53] Zimbabwe Legal Information Institute. Value Added Tax (General) (Amendment) Regulations, 2024 (No. 67). Available at: zimlii.org/akn/zw/act/si/2024/15/eng@2024-02-09

[54] IMF Blog. 'Red Sea Attacks Disrupt Global Trade'. Red sea crisis: Attacks on vessels in the Red Sea area reduced traffic through the Suez Canal, the shortest maritime route between Asia and Europe, through which about 15 percent of global maritime trade volume normally passes, at www.imf.org/en/Blogs/Articles/2024/03/07/Red-Sea-Attacks-Disrupt-Global-Trade

[55] LaRocco, Laurie Ann, 'STATE OF FREIGHT. Fears are rising ocean freight rates may surpass $20,000 with no relief for global trade into 2025', CNBC, at www.cnbc.com/2024/06/13/fears-rise-ocean-freight-rates-may-hit-20000-with-no-relief-in-sight.html

[56] *Frazier, Stephen (2022)*. 'A Look at the Business of Selling Hearing Aids'. Available at: hearinghealthfoundation.org/blogs/a-look-at-the-business-of-selling-hearing-aids

[57] Free wheelchair mission. Shipping cost breakdown, at: www.freewheelchairmission.org/wp-content/uploads/2017/11/Shipping-Cost-Breakdown.pdf

Annex 1: China Assistive Product Supplier Landscape

The annex provides insights on assistive product manufacturing in China for five priority assistive products: digital AT, hearing aids, prostheses, spectacles and wheelchairs. It examines the manufacturing landscape and identifies suppliers capable of and interested in doing business in LMIC markets. Additionally, it explores growth trends, challenges and opportunities for China's exports to LMICs and provides recommendations for global stakeholders to better leverage China's AT manufacturing capability worldwide.

The annex is documented in a separate PDF and is available via the link here.

Executive summary

China is the world's largest domestic market and a key global manufacturing hub with over 25,000 companies manufacturing assistive products also serving LMIC markets. The limited availability of reliable publicly accessible information makes it challenging for buyers to identify suitable suppliers offering affordable, high-quality products. To address this, ATscale and CHAI have partnered with the China Assistive Devices and Technology Center for Persons with Disabilities (CADTC) to provide updated market intelligence to improve access to assistive technology in LMICs.

This annex is based on a survey to gather information on suppliers interested in expanding into LMIC markets. A total of 90 suppliers responded, over 20 were further interviewed and 10 site visits were conducted.

Key takeaways from the section

Market size:

- According to most recent estimates, the market size of rehabilitation assistive products in China is valued at approximately 721 billion RMB (~US$100 billion) in 2020 and has been growing 9.4 per cent year-on-year since 2015.[28]
- China's supply is characterized by competitive pricing, a diverse product range and high fragmentation.

28 Note: the market size calculated here includes assistive products for both rehabilitation and disability use.

Key survey insights:

- Company size: Most suppliers are small to mid-sized enterprises (<100 staff). ~80 per cent of Chinese suppliers have annual revenues below US$5 million.
- Quality: ~70 per cent report having attained one or more international quality certifications, such as Europe CE, US FDA and ISO 9001/ISO 13485.
- Region: Cambodia, India, the Philippines, Ukraine and Viet Nam are the top 5 LMIC sales destinations.
- Overseas manufacturing in LMICs: Very few have set up plants in LMICs; only 2 spectacles manufacturers have existing plants in Viet Nam. However, several suppliers across different product categories reported they are partnering with LMIC distributors/importers to establish local assembly or manufacturing sites.
- Product competitiveness: 1) High production capacity; 2) Low prices; 3) Extensive product categories; and 4) Efficient delivery. These advantages stem from strong policy support, productive labour, a comprehensive supply chain, low-cost logistics and extensive original equipment manufacturer/original design and equipment manufacturer experience in AT manufacturing.
- Interest: Nearly all suppliers confirmed an interest in future sales to LMICs, and 70 per cent expressed an interest in joint global initiatives involving product donation.

Key challenges for Chinese manufacturers:

- Information gap: Lack of information on LMIC demand, needs and opportunities. Limited direct access to LMIC government tenders.
- Price-only competition: Intense price-only competition among Chinese suppliers with insufficient quality control on exports, encouraging some suppliers to cut costs by using inferior materials or bypassing quality management, thereby disadvantaging manufacturers who adhere to proper quality control standards
- Low brand awareness: Fragmented supplier landscape and low brand awareness for individual Chinese suppliers in the LMIC markets.
- High supply chain and logistical costs: Additional costs are incurred from product registration in-country, international qualification acquisition, shipping costs and tariffs, among other factors, making affordability a challenge despite China's low production costs.

Recommendations:

- For LMIC buyers:

1. Strengthen engagement with Chinese suppliers, as many are willing to expand exports but require better collaboration from LMIC governments and NGOs.
2. Streamline procurement processes to leverage China's large-scale production capabilities, reducing costs for assistive product buyers in LMICs.
3. Establish sustainable partnerships with Chinese suppliers through long-term contracting, local assembly or joint manufacturing initiatives to enhance supply chain resilience.

- For government and industry support for suppliers:

1. Implement stricter export quality standards and enhance awareness of international certification requirements to improve China's reputation as a reliable supplier of assistive technology.
2. Develop platforms and initiatives that facilitate direct interaction between Chinese suppliers and LMIC buyers, improving transparency and market access.
3. Provide stronger policy and administrative support for manufacturers exporting to LMICs, including assistance with quality certification processes and navigating local regulatory requirements.

Annex 2: NGOs, social enterprises and corporate foundations included in the report

The annex documents all organizations mentioned in the report, detailing their following characteristics:

- Mission and focus areas
- Geographic reach
- Criteria for selecting AT suppliers and products
- Criteria for assessing product quality

The annex is documented in a separate PDF and is available via the link here.

Annex 3: Country Summaries: Demand Landscape

The annex documents the public sector demand landscape for the five priority assistive products (hearing aids, prostheses, spectacles, wheelchairs and digital assistive technologies) across 12 strategically selected countries. These countries were chosen to represent diverse geographies, varying levels of maturity in AT programmes, differing degrees of government involvement and distinct regulatory environments.

The annex examines each country's regulatory framework, including policies, regulations and financing mechanisms, while also exploring its recent procurement activities related to the priority products. One should note that some information, such as procurement data, is only illustrative, as detailed volume figures are publicly available for just a few countries.

The annex is documented in a separate PDF and is available via the link here.