International trade (targets 17.10 to 17.12)

This section will focus on the role of international trade as a means of improving access to assistive technology and empowering persons with disabilities, thus supporting the implementation of the SDGs by, for and with persons with disabilities. International trade can promote inclusive practices, including inclusive labour, through trade agreements incorporating clauses promoting the rights and inclusion of persons with disabilities.

Assistive technology is crucial to ensure the inclusion and participation of persons with disabilities, their independent living, the realization of their rights and, for some persons with disabilities, assistive technology is essential for their survival. International trade of assistive technology can affect the supply, availability and affordability of this technology in countries and is therefore an important means of implementation of the SDGs for persons with disabilities at the global level. Restrictions on exports, high tariffs and other trade barriers can be an obstacle for countries to export and import assistive technology. The application of custom duties or tariffs on assistive technology can render this technology unaffordable for many persons with disabilities. It is important to establish effective supply and delivery chains to improve the provision of assistive technology around the world and create a favourable market environment that can eliminate unmet needs for assistive technology (for more information on unmet needs for assistive technology, see the chapter on Goal 10).

In the 2030 Agenda, targets 17.10, 17.11 and 17.12 call for the promotion of a universal, rules-based, open, non-discriminatory and equitable multilateral trading system, for a significant increase in the exports of developing countries, in particular with a view to doubling the least developed countries' share of global exports by 2020 and for the realization of a timely implementation of duty-free and quota-free market access on a lasting basis for all least developed countries.

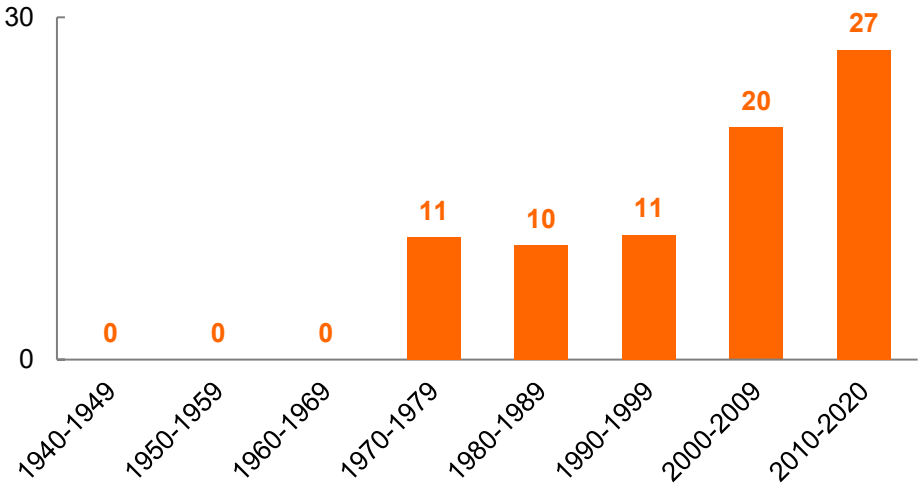
This section will provide an overview of the inclusion of disability provisions in trade agreements. This section will also analyse trends in exports and imports of assistive technology from and to developed countries and developing countries, as well as trends in imposed custom duties and tariffs on such products, with a focus on the case of least developed countries. Based on this evidence, the section will put forward recommendations for ensuring that international trade acts as an effective means of empowering persons with disabilities and improving access to assistive technology, thus supporting the implementation of the SDGs by, for and with persons with disabilities.

Current situation and progress so far

Better economic opportunities for persons with disabilities can be promoted through their integration in international trade. In particular, free trade agreements are a useful tool that can help integrate persons with disabilities into the economy, by removing barriers to their participation in economic life and by creating business and employment opportunities. The agreements can be used to incentivize negotiating

partners to implement changes at the domestic level in exchange for market access.

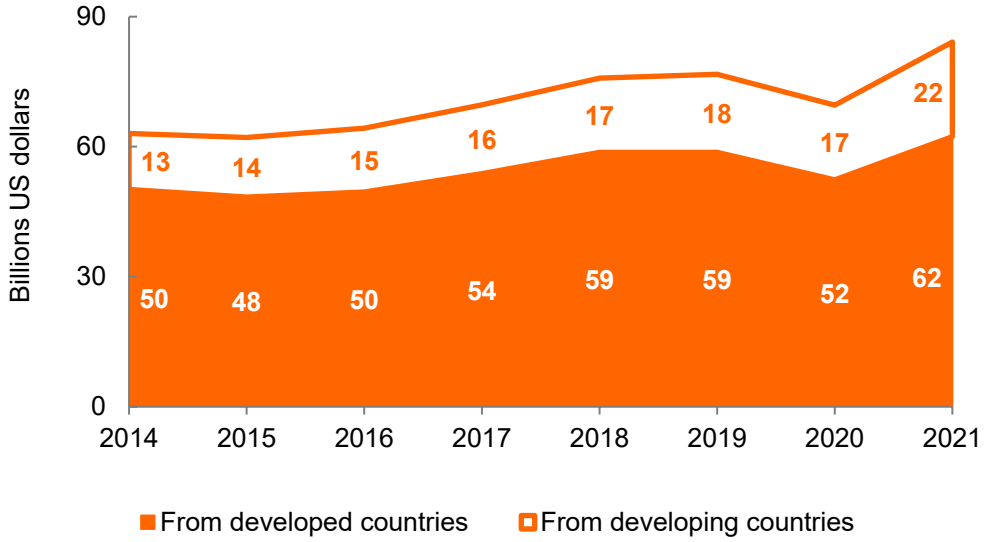
Figure 239. Percentage of preferential trade agreements that include clauses related to persons with disabilities, by decade, from 1940 to 2020.



Source: Jaramillo (2022).[598]

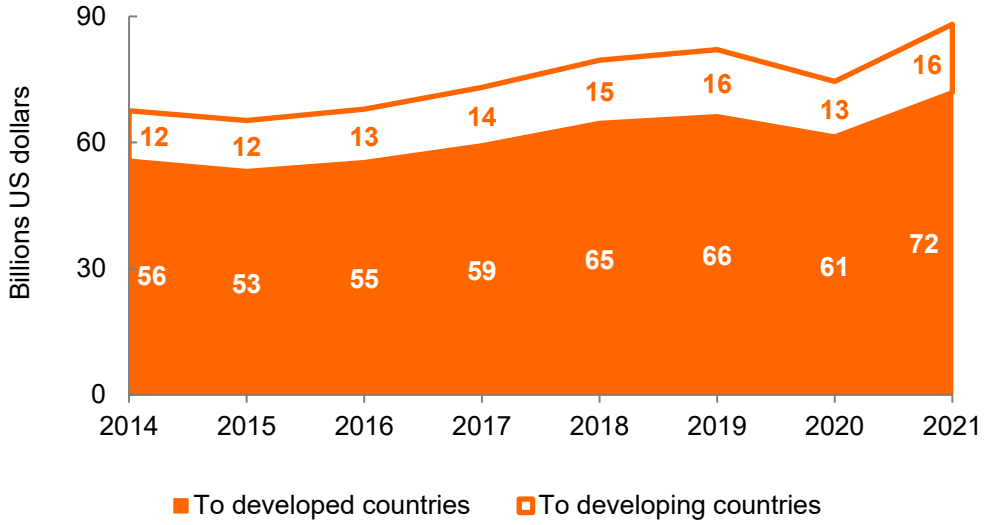
An increasing number of preferential trade agreements has included clauses relating to persons with disabilities (Figure 239). Before 1970, no preferential trade agreements included such clauses. These clauses started to be included in the 1970s, with 11 per cent of preferential trade agreements including them, a percentage that increased sharply from 2000 onward leading to 27 per cent of preferential trade agreements negotiated in 2010-2020 including clauses related to persons with disabilities. The impact of these provisions can be significant as more than a third of international trade is estimated to be carried out under preferential trade agreements.[598] The clauses introduced in agreements since the 1970s provide for non-discrimination (2 per cent of preferential trade agreements), allowing movement of workers across states while maintaining disability pensions (22 per cent of preferential trade agreements), inclusion of persons with disabilities through inter alia professional skills development for persons with disabilities (3 per cent of preferential trade agreements), cooperation among parties on policymaking related to the rights and inclusion of persons with disabilities (6 per cent of preferential trade agreements) and maintaining and creating policies protecting persons with disabilities (69 per cent of preferential trade agreements). [598] A similar analysis but focusing on free trade agreements currently in effect notified to the World Trade Organization found that almost a third — 27 per cent — of these agreements contain provisions on trade and disability (as opposed to only 20 per cent on gender).[599]

Figure 240. Total value of exports of assistive products, in billions of US dollars, from developing countries and developed countries, from 2014 to 2021.



Source: Data provided by the PAHO/WHO Collaborating Center on Rehabilitation and Assistive Technology (on the basis of data from the International Trade Centre's Trade Map[600]).

Figure 241. Total value of imports of assistive products, in billions of US dollars, to developing countries and developed countries, from 2014 to 2021.



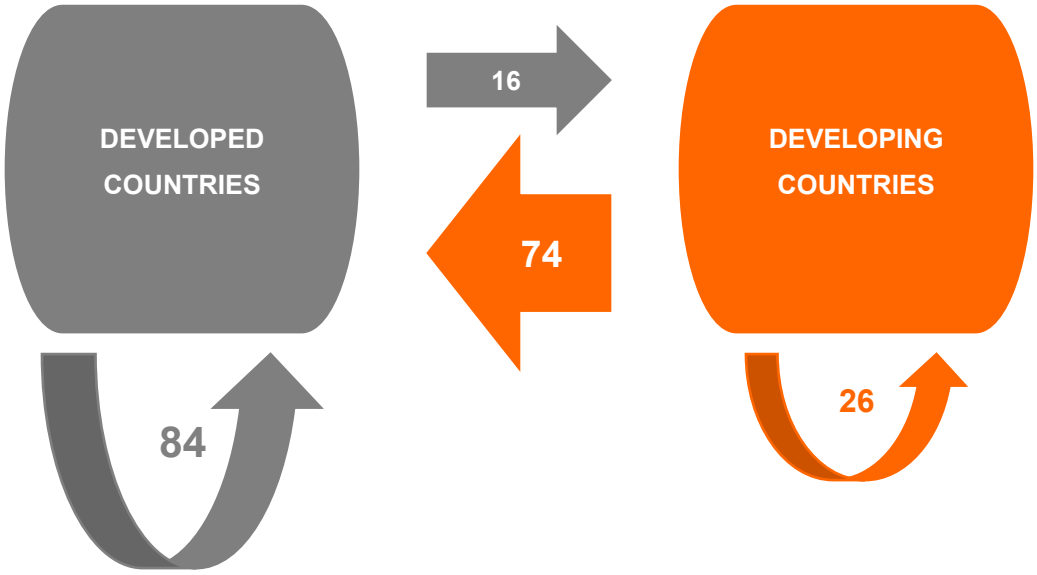
Source: Data provided by the PAHO/WHO Collaborating Center on Rehabilitation and Assistive Technology (on the basis of data from the International Trade Centre's Trade Map[600]).

Trade liberalization and trade agreements can also empower persons with disabilities to have more affordable access to assistive devices. Internationally comparable data is available to analyse the international trade of a selected list of assistive products: (i) glasses and lenses, (ii) hearing aids, (iii)

orthotics and prosthetics, (iv) wheelchairs and (v) other articles used by persons with disabilities to compensate for an impairment. Exports of these assistive products grew 33 per cent between 2014 and 2021, from 63 billion US dollars in 2014 to 84 billion US dollars in 2021, showing a consistent increase in trade flow throughout this period, with the exception of 2020, the first year of the COVID-19 pandemic in which there was a drop of more than 10 per cent in these exports (Figure 240). For glasses and lenses, orthotics and prosthetics, and wheelchairs, the total value of exports increased by 25 to 40 per cent from 2014 to 2021; for hearing aids, the total value of exports showed a much larger increase in the same period (82 per cent), mainly due to a sharp increase in 2021.

Globally, in 2021, the total value of imports of assistive products was 88 billion US dollars (Figure 241). The difference between import and export values (4 billion US dollars), which is attributed inter alia to freight and insurance costs,[601] is much higher for orthotics and prosthetics (10 per cent of the cost of exports) than for other assistive products.

Figure 242. Percentage of the exported values of assistive products from developing and developed countries to developing and developed countries, in 2021.



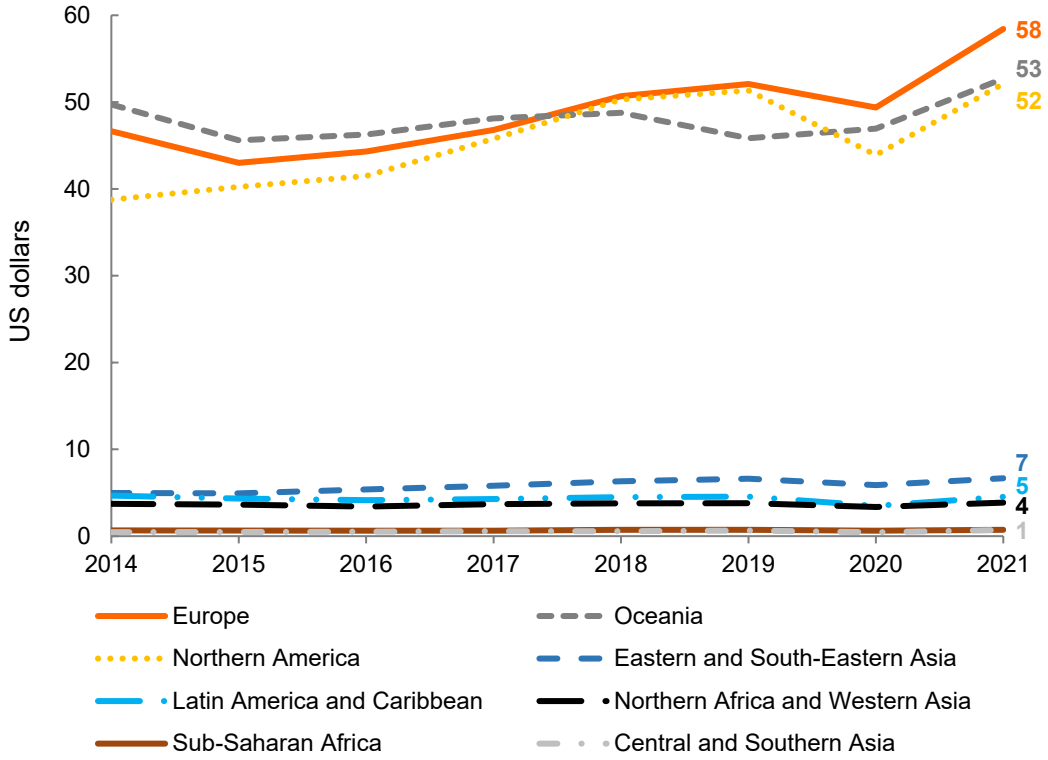
Source: Data provided by the PAHO/WHO Collaborating Centre on Rehabilitation and Assistive Technology (on the basis of data from the International Trade Centre's Trade Map[600]).

The participation of developing countries in the global market of assistive technology is low, both as importers and as exporters. As exporters, developing countries have a small share of the global market of assistive technology, and this share has changed minimally from 2014 to 2021. In 2021, their share for various assistive products was between 14 per cent and 48 per cent of the world's export values. As importers, developing countries have also a small share of the market. In 2021, the share of developing countries in the global value of imported assistive technology was only 18 per cent, a value that has

remained stagnant since 2014. Developing countries had a smaller share of the market in 2014-2021 for every assistive product: the shares by type of assistive product were three to six times less than the share of developed countries. The share of developing countries was especially low for hearing aids, orthotics and prosthetics and wheelchairs.

International trade of assistive products happens mostly among developed countries and to developed countries (Figure 242). In 2021, 84 per cent of the exported value of assistive products (93 per cent in the case of wheelchairs) was exported from developed countries to other developed countries, a situation that has not changed much since 2014. Also in 2021, 74 per cent of the exported value of the assistive products exported by developing countries also went to developed countries – with little variation by type of assistive product (ranging from 69 per cent to 86 per cent). These percentages have grown for all assistive products since 2014, indicating that developed countries are getting an increasing share of exports of assistive products from developing countries.

Figure 243. Per capita value of imports of assistive products, by region, from 2014 to 2021.



Source: Data provided by the PAHO/WHO Collaborating Center on Rehabilitation and Assistive Technology (on the basis of data from the International Trade Centre's Trade Map[600]).

Both the export and import values of assistive technology in developing countries grew between 2014 and 2021: from 13 billion to 22 billion US dollars for exports and from 12 billion to 16 billion US dollars for imports (Figure 240 and Figure 241). However, this growth has not been enough to change the overall

share of developing countries in world export and import values. For exports, the share of developing countries increased slightly from 21 per cent in 2014 to 26 per cent in 2021; for imports it remained at 18 per cent in 2014 and 2021.

In the period from 2014 to 2021, the total value of imports of assistive technology to Central and Southern Asia grew by 64 per cent, followed by Northern America (41 per cent), Eastern and South-eastern Asia (40 per cent) and sub-Saharan Africa (33 per cent). In all other regions growth was below 30 per cent. Despite the growth in imports to Asia and sub-Saharan Africa, the imported value per capita in these regions in 2021 was still considerably lower than the world average of 12 US dollars per capita (Figure 243), with Europe, Northern America and Oceania showing the highest imported values per capita (above 50 US dollars per capita). The per capita value of imports in these regions was almost five times the world average in 2021.

Box 15. Types of tariffs

There are three types of tariffs: *bound rates*, *most-favoured nation (MFN) tariffs* and *preferential tariffs. Bound rates* are specific commitments made by individual World Trade Organization (WTO) member states, acting as a maximum for any applied tariff on an import from another country, that is, the country commits to never apply more than the bound rates to an imported product. By binding their tariffs, countries improve the predictability of the market. *Most-favoured nation (MFN) tariffs* are tariff rates a country applies on imports from countries that are members of the WTO. MFN tariffs are always lower than the bound tariffs and are the tariffs that are usually applied in practice. MFN tariffs are not imposed on imports if the countries are part of a preferential trade agreement, in which case mutually agreed *non-MFN (preferential) rate*s – lower than MFN tariffs – apply. These agreed *non-MFN (preferential) rate*s are not necessarily reciprocal.

A key factor in the international trade of assistive technology are tariffs, which are taxes on imports or exports of goods between countries. Tariffs are usually calculated as a percentage of the value of the product. They are not paid by the exporting country but are passed on to the consumers in the importing country thus raising the prices of imported products. Analysing customs tariffs is important as they inform the predictability of the market and assist in identifying areas for international orchestrated action and negotiation in order to reduce barriers to trade and facilitate and improve the supply and availability of imported assistive products.

Assistive products are subject to several different types of tariffs – bound, most-favoured nation (MFN), and non-MFN preferential tariffs – see Box 15. By committing to bound tariffs, countries set a maximum tariff value that can be imposed on the traded product, hence improving market predictability. Bound tariffs are rarely applied in practice, as the de facto applied tariffs are MFN tariffs and, for countries in trade agreements, the tariffs applied are (non-MFN) preferential tariffs.

The percentage of countries that bind their tariffs on assistive products is lower for least developed countries (LDCs) than for other countries or areas: depending on the type of assistive product, 40 per cent to 50 per cent of LDCs but 80 per cent to 90 per cent of other countries or areas bind their tariffs. The number of LDCs that choose to bind their tariffs at 0 per cent is close to zero, while 30 per cent to 40 per cent of other countries or areas choose to do it. Spectacles and their components are the most significant exception, with only a few countries (less than 10 per cent of reporting countries with bound tariffs) choosing to bind their tariffs at 0 per cent. When not zeroed, the median average of the bound tariff for LDCs is slightly higher than that of other countries or areas. For wheelchairs, the median average bound tariff for all countries is 35 per cent; for orthotics and prosthetics, it is 45 per cent for LDCs and 35 per cent for other countries or areas; for spectacles and lenses, it is 30 per cent to 45 per cent for LDCs and 20 per cent to 30 per cent for others; and for hearing aids, it is 50 per cent for LDCs and 35 per cent for other countries or areas.

In both groups (LDCs and other countries or areas), for hearing aids, wheelchairs, orthotics and prosthetics, and other articles used by persons with disabilities to compensate for an impairment, about 60 per cent to 70 per cent of countries reporting MFN tariffs chose to set them at 0 per cent (Table 8). For glasses and spectacles, the percentage is much lower for both groups of countries, less than 30 per cent among LDCs and less than 50 per cent among other countries or areas. The median average duty used as an MFN tariff is low in both groups (between 5 per cent and 10 per cent), with a slightly broader range among LDCs. Again, spectacles and their components are different from other groups of assistive products, with slightly higher median average tariffs and broader tariff ranges. Overall, LDCs often have a broader range of MFN tariffs, lower binding status and higher bound tariffs, indicating that they have more flexible and less predictable trade policies on assistive products.

While only a few countries or areas report preferential tariffs resulting from trade agreements (circa 15 per cent to 20 per cent for both LDCs and other countries or areas), the tariff values set in these agreements are often 0 per cent (frequently, more than 80 per cent of the preferential tariffs reported by both LDCs and other countries or areas).

Table 8. Percentage of countries that do not impose tariffs on the imports of various assistive products (i.e., with MFN tariffs set at zero for these products), median tariff and tariff range for countries with MFN tariffs not set at zero, for least developed countries (LDC) and other countries, in 2021.

Assistive product	Countries with MFN tariffs at 0 per cent	Median MFN tariff for countries with MFN tariffs not set at zero (per cent of the value of the product)	MFN tariffs range for countries with MFN tariffs not set at zero (per cent of the value of the product)
Wheelchairs, not mechanically propelled[602]	LCD: 71 Other: 78	LCD: 5 Other: 5	LCD: 3-26 Other: 2-12
Wheelchairs, motorized or mechanically propelled[603]	LCD: 69 Other: 79	LCD: 5 Other: 5	LCD: 3-26 Other: 2-10
Parts and accessories of wheelchairs[604]	LCD: 63 Other: 77	LCD: 5 Other: 6	LCD: 3-26 Other: 2-20
Hearing aids[605]	LCD: 71 Other: 71	LCD: 5 Other: 5	LCD: 1-26 Other: 1-20
Orthopaedic appliances[606]	LCD: 66 Other: 63	LCD: 5 Other: 5	LCD: 1-26 Other: 0-14
Artificial joints for orthopaedic purposes[607]	LCD: 66 Other: 67	LCD: 5 Other: 5	LCD: 1-26 Other: 1-10
Artificial parts of the body[608]	LCD: 71 Other: 67	LCD: 5 Other: 5	LCD: 1-26 Other: 1-30
Glasses for corrective spectacles[609]	LCD: 20 Other: 50	LCD: 5 Other: 5	LCD: 3-26 Other: 1-20
Contact lenses[610]	LCD: 20 Other: 41	LCD: 5 Other: 5	LCD: 2-26 Other: 1-20
Spectacle lenses of glass[611]	LCD: 29 Other: 40	LCD: 8 Other: 7	LCD: 2-26 Other: 0-32
Spectacle lenses of materials other than glass[612]	LCD: 23 Other: 43	LCD: 8 Other: 7	LCD: 2-26 Other: 0-32
Frames and mountings for spectacles, goggles or the like, of plastics[613]	LCD: 9 Other: 31	LCD: 10 Other: 8	LCD: 2-30 Other: 0-35
Frames and mountings for spectacles, goggles or the like (excluding of plastics)[614]	LCD: 3 Other: 33	LCD: 10 Other: 8	LCD: 2-30 Other: 2-35
Parts of frames and mountings for spectacles, goggles or the like[615]	LCD: 3 Other: 32	LCD: 5 Other: 5	LCD: 2-30 Other: 1-35
Spectacles, googles and the like, corrective, protective or other[616]	LCD: 6 Other: 20	LCD: 8 Other: 8	LCD: 2-26 Other: 2-30
Other articles used by persons with disabilities to compensate for an impairment[617]	LCD: 63 Other: 67	LCD: 5 Other: 5	LCD: 0-5 Other: 0-10

Source: Data provided by the PAHO/WHO Collaborating Centre on Rehabilitation and Assistive Technology (on the basis of data from International Trade Centre's Trade Map).[600]

Among the various assistive products, spectacles and their components have the highest percentage of countries in both LDCs and other countries or areas reporting preferential tariffs, including by zeroing them, showing that trade agreements are used as an alternative to bound and MFN tariffs for this group of assistive products. In general, for all assistive products, LDCs show a narrower range of preferential tariffs than other countries or areas.

The lack of internationally comparable data hampers a comprehensive analysis of exports and imports for all assistive products. The Priority Assistive Products List, released by WHO in 2016, includes 50 priority assistive products selected on the basis of their widespread need and impact on a person's life. Yet, available data on international trade only allow for the trade analysis of 30 per cent of these products. It is not possible to track priority assistive products such as Braille writing equipment, deafblind communicators, handrails and grab bars, personal digital assistants, screen readers and ramps, among others.

Tariffs are just one aspect regulating the international trade of assistive products. Without adequate trade policies and agreements, the promised benefits that eliminating tariffs will lead to wider availability and reduced costs of assistive technology will not materialize. For instance, to ensure fair trade practices and harmonization of trade policies, trade agreements have obligated countries to harmonize their policies and eradicate subsidies. But the elimination of subsidies has had a negative impact on the availability and cost of assistive products, as it has deterred governments from offering financial benefits for the manufacturing or sale of assistive devices. Trade agreements have also exerted pressure that has resulted in a greater privatization of the assistive technology industry. This has resulted in higher prices of assistive devices to allow private companies to increase their share of profits. Moreover, trade agreements have also pushed acceleration towards private insurance systems and reduced the policy space for governments to provide publicly funded medical and social protection benefits, leading to the absence of the social programmes and schemes that previously provided persons with disabilities with subsidized or cost-free access to assistive technology. This left persons with disabilities relying on private insurance coverage, their own incomes or that of their families, which in many cases are insufficient to pay for the assistive technology that persons with disabilities require.[618]

The WTO's Agreement on Trade-Related Aspects of Intellectual Property Rights, and similar intellectual property rights' commitments in preferential trade agreements, have further increased the cost of access to assistive technology as they have enabled private stakeholders to retain ownership of the intellectual property of the technology they design and manufacture. Intellectual property provisions in trade agreements ensure protection for the creation of innovative assistive products. The creation of these products sometimes requires a high sunk cost in the form of investment in research and development. This is the case with assistive products such as wheelchairs, Braille printers, portable note-taking devices, and screen reading software. Intellectual property provisions restrict the production and marketing of such products by other companies and provide exclusive rights to the investors and creators to offset the sunk

cost. This is done to encourage more research and development investment by private stakeholders, which can lead to more innovation in the creation of new assistive products. Therefore, intellectual property rights' protections can help persons with disabilities gain access to new innovative equipment that can further enhance their standard and quality of life. However, this protection may also lead to higher prices for such equipment as it allows the owners of the patented products to price them at their choice. As a result, trade agreements may have negative consequences on the affordability and availability of assistive products for persons with disabilities. In these situations, the promised benefit of trade liberalization for persons with disabilities of lower prices through the elimination of tariff barriers is not materialized. On the contrary, extended patent protection on assistive products can increase their cost in some countries.[618] Yet, if designed based on evidence to address these challenges, trade agreements can be an effective tool to overcome these barriers.

Summary of findings and the way forward

Some 80 per cent of persons with disabilities live in developing countries. Yet, the international trade of assistive products is concentrated in developed countries: they dominate this trade as exporters and as importers. The developed countries combined account for 74 per cent of the value of exports of assistive technology in the world and developing countries account for 26 per cent. Imports are similarly concentrated: developed countries as importers account for 82 per cent of the value of imported assistive technology and developing countries account for 18 per cent. Most exports go from developed countries to developed countries. The per capita value of imports of assistive products varies by region, with Europe, Northern America and Oceania importing more than 50 US dollars of assistive products per capita, and Asia, Latin America and the Caribbean, and sub-Saharan Africa importing less than 10 US dollars of assistive products per capita.

Despite the growing value of exports from developing countries and imports to developing countries since 2014, their global share in imports and exports remained stagnant. The per capita value of imports to Europe, Northern America and Oceania has been consistently five times higher than in other regions since 2014. The COVID-19 pandemic had a marked impact on the international trade of assistive products, causing a 10 per cent drop in the value of exported assistive products, a factor that may have impacted access to assistive technology during the pandemic (see the chapter on Goal 10).

Barriers to trade persist in assistive technologies. Many assistive products have taxes imposed at the border in the form of tariffs. Tariffs on some assistive products remain high. Depending on the type of assistive product, 29 to 97 per cent of least developed countries apply non-zero MFN tariffs; and 21 to 80 per cent of other countries apply non-zero MFN tariffs.

For wheelchairs, the median average bound tariff — that is, the maximum tariff that a country pledges to apply in its WTO agreements — is 35 per cent; for orthotics and prosthetics, it is 45 per cent for LDCs and 35 per cent for other countries or areas; for spectacles and lenses, it is 30 per cent to 45 per cent for

LDCs and 20 per cent to 30 per cent for others; and for hearing aids, it is 50 per cent for LDCs and 35 per cent for other countries or areas. The average “applied” tariff on assistive products (MFN tariff) — the tariff typically used in practice — is considerably lower, at 5 per cent for wheelchairs, orthotics and prosthetics and hearing aids; and 5 per cent to 10 per cent for spectacles and lenses. Behind these average values, lies a wide range of tariffs applied, sometimes as high as 35 per cent. Moreover, the gap between the bound tariff rates and the applied tariff rates leaves ample legal room for increasing tariffs on these assistive products without violating WTO rules.

Only about 20 per cent of countries or areas report being part of trade agreements with preferential tariffs on assistive products and only about 80 per cent of the tariff values set in these agreements are set to 0 per cent. For these trade agreements, LDCs tend to apply higher tariffs on imports than other countries. The latter may pose challenges for persons with disabilities in LDCs to afford assistive products, especially as persons with disabilities in these countries are at higher risk of poverty and may be more likely to face challenges affording assistive technology than persons with disabilities in other countries. Moreover, only about 20 per cent of LDCs have preferential trade agreements resulting in tariffs of 0 per cent.

Goal 17 calls for favourable terms for exports for least developed countries, namely duty-free access to markets in other countries. For assistive products and their vital role to leave no person with disabilities behind, duty-free access worldwide can assist in eliminating the unmet needs for assistive technology in all countries.

Apart from its role in ensuring the wider availability of assistive technology, trade can also serve as an incentive to promote laws and practices to ensure the realization of the rights of persons with disabilities and their inclusion in society. Among preferential trade agreements negotiated from 2010 to 2020, 27 per cent included such clauses. Before 1970, none of the negotiated preferential trade agreements included such clauses. At this rate of progress, about a third of preferential trade agreements is expected to include such clauses by 2030. To achieve an inclusion of these provisions in all trade agreements by 2030, the current rate of progress should accelerate four times.

To ensure that international trade acts as an effective means of improving access to assistive technology, thus supporting the implementation of the SDGs by, for and with persons with disabilities, it is recommended:

1. Monitor and promote the incorporation of disability-inclusion provisions in trade agreements and ensure that international trade agreements do not perpetuate or exacerbate the inequalities experienced by persons with disabilities. The integration of disability-inclusion concerns, including for women with disabilities, in trade agreements can help maximize the positive impact and minimize the negative impact that trade agreements can have on the rights and needs of persons with disabilities.

2. Reduce barriers to the international trade of assistive technology to help make this technology available for all persons with disabilities who need it. Import tariffs, export restrictions, and other limitations on international trade in assistive technology continue to confound the hopes for eliminating the unmet need for assistive technology. Governments can work together at the WTO to help meet this need, with the aim of finalizing new rules to support trade for assistive technology by eliminating duties and tariffs on assistive technology, extending this to cover all assistive technology, and to be applicable to all WTO members. They must ensure that WTO obligations that prohibit export restrictions are effectively applied in the trade of assistive technology. Ideally, these reforms could be included in a new trade agreement that would be fully multilateral. Another way trade can support the needs of persons with disabilities is through trade agreements containing waivers on intellectual property rights protection concerning assistive products to bring down their costs. Persons with disabilities and their representative organizations should be consulted and involved in the development and negotiation of trade agreements on assistive products.

3. Keep commitments on imports and exports of assistive technology during global health emergencies and other crises. Countries can agree to limit the duration of restrictions on exports of critical assistive products during a pandemic or other global or regional crises and ensure that trade is not interrupted for countries in need. Reducing trade barriers for assistive technology can expand access to this technology in normal times while also bolstering preparedness for pandemics and other global or regional crises.

4. Promote trade of assistive technology among developing countries. Cut tariffs and remove other trade barriers on assistive technology they import from each other. Apart from promoting trade, such cuts reduce the final price to consumers in developing countries. Trade among developing countries can also facilitate manufacturing knowledge sharing, foster innovation, diversify import sources to improve resilience and build supply chains among developing countries.

5. Improve the availability and quality of internationally comparable data on exports and imports of assistive products and on the tariffs applied to these products. Exploring data on international trade and tariffs depends on a harmonized system of coding of products. However, current codes are not directly applicable to many assistive products. Furthermore, the available codes for assistive products correspond to very broad categories: there is a need for further detail in the classifications and codes of assistive products. The international community would benefit if these codes could be aligned with other references such as ISO 9999:2016 (Assistive products for persons with disability), which establishes a widely accepted classification and terminology of assistive products, increasing data comparability internationally.

6. Conduct research on the impact of trade and trade agreements on the inclusion and participation of persons with disabilities in society and development. More data are needed to

understand the impact of existing trade agreements on persons with disabilities, and to evaluate differences in impact for men versus women with disabilities.