Data sources guidance for outcome indicators on article 20:

Personal mobility

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20.19: Number of persons with disabilities gaining access to publicly funded mobility devices, disaggregated by sex, age, disability and geographical location

Level 2: Indicator can be produced with straightforward additions or modifications to existing data collection efforts

This information could be obtained from the administrative data of the agency providing the funding or from a disability-specific survey.

Viet Nam has collected information on the percentage of persons who use different mobility devices but it does not specify who paid for them, as shown in table 1. This information could be added if the survey were repeated.

Table 1: Percentage of persons with a mobility disability, with supports, aged 18 years and over

	Walking stick	Walking frame	Crutches	Wheelchair	Prosthesis	Assistance	Others
Whole country	21.74	1.84	3.43	5.63	0.91	24.2	3.27
Area							
Urban	19.07	3.57	5.43	8.16	1.47	29.12	3.31
Rural	22.65	1.24	2.74	4.77	0.72	22.68	3.25
Region							
RRD	23.22	1.49	3.91	4.90	0.87	22.66	2.51
NMM	30.94	1.48	3.03	4.63	1.58	28.09	3.91
NCCC	19.78	1.48	3.43	3.98	0.50	21.73	2.56
CH	20.25	0.29	3.86	5.69	0.55	21.76	0.91
SE	19.39	4.35	5.18	9.87	1.50	29.44	2.84
MRD	20.27	1.69	2.00	6.76	0.95	25.54	5.38
Sex							
Male	25.18	1.79	6.32	7.76	1.75	28.25	4.37
Female	19.75	1.87	1.76	4.41	0.43	22.05	2.63
Age groups (years)							
18-40	10.31	1.62	10.12	16.82	2.48	33.82	5.30
41-64	13.46	1.37	5.75	4.16	1.33	19.09	2.73
65+	25.95	2.04	1.97	5.33	0.62	25.65	3.32

	Walking stick	Walking frame	Crutches	Wheelchair	Prosthesis	Assistance	Others

Source: General Statistics Office, *Viet Nam National Survey on People with Disabilities 2016* (Hanoi, 2016), p. 57.

Note: CH – Central Highlands ; MRD – Mekong River Delta; NCCC – North Central and Central Coast; NMM – North Midland and Mountain; RRD – Red River Delta; SE – South East.

The United States of America provides another example. The country conducted the National Health Interview Survey on Disability in 1995. It included information on the use of mobility devices, but it did not specify who had paid for them. An extract of the data can be found in table 2. The survey has not been repeated, but information on payment could be added if it were.

Table 2: Number of persons and proportion of the population using mobility devices, by age and device used, United States of America

Type of device	*All persons*		*Under 18*		*18-64*		*65 and over*	
	Number (1000s)	%	Number (1000s)	%	Number (1000s)	%	Number (1000s)	%
Any mobility device	6,821	2.62	145	0.21	2,310	1.45	4,366	13.97
Wheelchair or scooter	1,679	0.64	88	0.12	658	0.41	933	2.99
Wheelchair	1,599	0.61	88	0.12	614	0.39	897	2.87
Manual wheelchair	1,503	0.58	79	0.11	560	0.35	864	2.76
Electric wheelchair	155	0.06	18	0.02	90	0.06	47	0.15
Scooter	142	0.05	–	–	78	0.05	64	0.21
Other mobility device	6,126	2.35	73	0.1	1,987	1.25	4,065	13.01
Cane	4,755	1.82	19	0.03	1,535	0.96	3,200	10.24
Crutches	566	0.22	36	0.05	375	0.24	155	0.5
Walker	1,820	0.7	27	0.04	373	0.23	1,421	4.55

Source: H. Stephen Kaye, Taewoon Kang and Mitchell P. LaPlante, Mobility Device Use in the United States, Disability Statistics Report 14 (Washington, D.C., National Institute on Disability and Rehabilitation Research, 2000).

20.20: Number of persons with disabilities benefiting from specific measures, such as tax and customs exemptions, and financial support or subsidies, to purchase mobility, vision, hearing and communication devices and assistive technologies, disaggregated by age, sex, disability, geographical location and type of measure

Level 2: Indicator can be produced with existing data but has not been reported on

Theoretically, this information could be obtained from the administrative data of any programmes that provide specific measures. However, as different measures may be provided through different systems, this would require coordination – and a unique personal identifier – in order not to double count persons who are receiving multiple measures.

In some countries, such as those in Western Europe, most of these products are non-taxable, which makes the data difficult to track.

With respect to benefiting from assistive technology, through the individual-level rapid Assistive Technology Assessment tool developed by the World Health Organization (WHO), respondents using assistive technology are asked about who paid for the products they use. The response options include the Government, but the survey does not inquire about specific government programmes.

Furthermore, a country-level questionnaire developed by WHO, with progress indicators related to improving access to assistive technology, includes a question about measures that fully or partly cover users' costs for assistive technology. The response options include public schemes, and additional details may be provided voluntarily.

Another country-level tool developed by WHO is the assistive technology capacity assessment, which identifies the capacity of a country to provide assistive technology. It includes questions on financing schemes, on which persons are covered by each scheme and on the proportion of the population that is covered by each scheme. The tool has been used in seven countries in Africa and a summary of assessment results has been published. This assessment identified key barriers related to data, including a lack of a centralized or integrated information system that tracks data on assistive technology, as well as no, or limited, routine data collection (from health-care facilities, rehabilitation centres, schools and other government agencies) to capture data on the provision of assistive technologies. Where such data collection exists, it is usually fragmented, incomplete and rarely shared outside of the organization or reported centrally to inform national data. One of the key recommendations emerging from the assessment is to develop a system that provides reliable data to estimate the need for, and measure access to, assistive technologies.

In 2001, the Rehabilitation Engineering and Assistive Technology Society of North America, under its technical assistance project, funded by the National Institute on Disability and

Rehabilitation Research of the United States, surveyed 1,414 individuals with disabilities in a national survey on the use of and need for assistive technology and information technology by individuals with disabilities in the United States. The study included information on the source of expenditures on assistive technology, an extract of which can be found in table 3.

Table 3: Source of expenditures on assistive technology, United States of America

Payer	Percentage of total expenditures for assistive technology
Self	37
Medicare	18
Private insurance	16
Free	7
Medicaid	5
Veteran's administration	5
Employer	3
Vocational rehabilitation	2
Family or household member	2
Other	5

Source: Dawn Carlson and Nat Ehrlich, "Sources of payment for assistive technology: findings from a national survey of persons with disabilities", Assistive Technology, vol. 18, No. 1 (October 2010), pp. 77–86.

20.21: Number of persons with disabilities gaining access to publicly funded training on mobility skills and the use of mobility, vision, hearing and communication devices and assistive technologies, disaggregated by sex, age, disability and geographical location

Level 2: Indicator can be produced with existing data but has not been reported on

This information could be obtained from the administrative data of the agencies providing or paying for the services.

For example, in the United States, the vocational rehabilitation programme is one of the major publicly funded providers of assistive technology training. Each state agency reports the number of persons who received rehabilitation technology services to the federal Rehabilitation Services Administration. Unfortunately, the Government of the United States has recently removed the ad hoc query of this reporting mechanism, so the current number is not available without a signed non-disclosure agreement.

The rapid Assistive Technology Assessment, a population-based household survey, includes questions on the current use of and demand for various assistive products and on access to related services, which can provide information for the indicator. A call for the globalized use of this survey can be found on the website of WHO. For each of the top three assistive devices a person uses, the respondent is asked: "Thinking about your [product], how satisfied are you with the assessment and training you received? Very dissatisfied – Dissatisfied – Neither satisfied nor dissatisfied – Quite Satisfied – Very Satisfied."

The survey has already been piloted in Pakistan, with over 63,000 participants. It was reported on in the consultations on the *Global Report on Assistive Technology*.

20.22: Number of persons with disabilities benefiting from specific measures, such as tax and customs exemptions, and financial support or subsidies, to purchase and/or import adapted vehicles and adaptive equipment

Level 3: Indicator for which acquiring data is more complex or requires the development of data collection mechanisms that are not currently in place

Theoretically, this information could be obtained from the administrative data of any programmes that provide specific measures. However, as different measures may be provided through different systems, this would require coordination – and a unique personal identifier – in order not to double count persons who are receiving multiple measures.

In some countries, such as those in Western Europe, most of these products are non-taxable, which makes the data difficult to track.

20.23: Number and proportion of persons with disabilities with adapted vehicles registered by the relevant public authority

Level 2: Indicator can be produced with existing data but has not been reported on

For countries requiring such registration, the data could be obtained from administrative records.

In the United Kingdom of Great Britain and Northern Ireland, it is possible to collect data from existing sources (e.g. statistics on Blue Badge holders, Motability client data and National Travel Survey data on drivers with disabilities). In the study *Data Gathering on*

Disability and Driving Statistics: Stage 2, it was reported that "Driver and Vehicle Licensing Agency (DVLA) data provided summary statistics on the total population of drivers who had notified DVLA of a medical condition and, where applicable, were licensed to use adapted vehicles" (S. Tong, J. Broughton and R. Tong (Bracknell, United Kingdom, IHS, 2008), p. 1).

In Ireland, the Disabled Drivers and Disabled Passengers Scheme provides tax relief linked to the purchase and use of specially constructed or adapted vehicles by drivers and passengers with a disability. The Central Statistics Office of Ireland reports the number of cars registered each year classified by taxation class. Drivers with disabilities are classified as exempt, a category that also includes State-owned, diplomatic and fire services vehicles, making data difficult to disaggregate.

20.24: Number of persons with disabilities who have a driving permit, disaggregated by age, sex, disability, type of vehicle and whether it is regular or adapted

Level 2: Indicator can be produced with existing data but has not been reported on

Information for this indicator could be obtained from administrative data. For example, the driving licence directive of the European Union introduced harmonized driving licences and included codes defining the minimum adaptations to enable a person with a physical disability to drive. In *Data Gathering on Disability and Driving Statistics: Stage 2*, a study from the United Kingdom, it was reported that 23,286 males and 13,896 females were recorded as having vehicle restriction codes, as can be seen in table 4.

Table 4: Vehicle restriction codes by gender (number and percentage out of all drivers with vehicle restriction codes), United Kingdom of Great Britain and Northern Ireland

Vehicle restriction code	*Gender*				
	Male (sample size = 23,286)		Female (sample size = 13,896)		Total
	number	percentage	number	percentage	number
78- restricted to vehicles with automatic transmission	14,100	61	8,327	60	22,427
40- modified steering	8,766	38	5,820	42	14,586
30- modified combined brake and accelerator	8,377	36	4,267	31	12,644
114- with any special controls required for safe driving	6,863	30	4,123	30	10,986
25 – modified accelerator	4,969	21	2,694	19	7,644

Vehicle restriction code	*Gender*				
	Male (sample size = 23,286)		Female (sample size = 13,896)		Total
	number	percentage	number	percentage	number
35 – modified control layouts	4,814	21	2,734	20	7,548
42 – modified rear-view mirror(s)	1,641	7	2,621	19	4,262
20 – modified brake	2,099	9	1,362	10	3,461
15 – modified clutch	1,309	6	369	3	1,678
43 – modified driver seat	695	3	563	4	1,258
10 – modified transmission	508	2	254	2	762

Source: S. Tong, J. Broughton and R. Tong, *Data Gathering on Disability and Driving Statistics: Stage 2*, Transport Research Laboratory Report No. TRL669 (IHS, Bracknell, United Kingdom, 2008).

20.25: Proportion of population that has convenient access to public transport, by sex, age and persons with disabilities (Sustainable Development Goal indicator 11.2.1)

Level 2: Indicator can be produced with existing data but has not been reported on

Link to the metadata related to this Sustainable Development Goal indicator

This indicator is categorized under tier II, which means that the indicator is conceptually clear and that an established methodology exists but data are not easily available.

According to the metadata:

> The actual and recommended data sources for this indicator are as follows:
>
> 1. For data on the location of public transport stops in a city: city administration or service providers and Geographic Information System data;
> 2. For data on dwelling units within 500 m of public transport stops: censuses and Geographic Information System data;
> 3. For the number of residents per dwelling unit: censuses and household surveys;
> 4. Household surveys that collect information on the proportion of households that declare that they have access to public means of transport within 0.5 km. These surveys can also collect information about the quality of the service.
>
> Due to its spatial nature, the use of the urban agglomeration is a precondition for the measurement and comparability.

At the global level, all of the data will be compiled for international consumption and comparison by the United Nations Human Settlements Programme (UN-Habitat) and other partners. UN-Habitat and partners will explore several capacity-building options to ensure that uniform standards for the generation, reporting and analysis of the data for this indicator are applied by all countries and regions.

No internationally agreed methodology exists for measuring the convenience and service quality of public transport. In addition, global or local data on urban transport systems do not exist. Moreover, data are not harmonized or comparable at the global level. Obtaining the data will require collecting them at the municipal or city level; however, there are serious deficiencies in some areas, such as data on mass transit and on transport infrastructure. To assist in this area, an open-source software platform for measuring accessibility – the Open Trip Planner Analyst accessibility tool – is available to government officials and all urban transport practitioners. Developed by the World Bank in conjunction with Conveyal, this tool leverages the power of the Open Trip Planner Analyst engine and open standardized data to model block-level accessibility. The added value of the tool (free of charge and user-friendly) is its ability to easily calculate the accessibility of various opportunities and transportation scenarios.

In the United States, the Bureau of Transportation Statistics used the National Household Travel Survey of 2017 to examine the daily travel patterns of American adults with disabilities. Although the survey did not include questions about convenient access to public transport, the Bureau did report on the share of people using different types of transportation, as shown in table 5.

Table 5: Share of transport mode by worker and disability status (aged 18–64 years), United States of America, 2017

	Workers		*Non-workers*	
	Has a disability (percentage)	**Does not have a disability (percentage)**	**Has a disability (percentage)**	**Does not have a disability (percentage)**
Personal vehicle (driver)	54.5	73.6	42.6	58.3
Personal vehicle (passenger)	23.5	11.5	3.1	21.2
Walk	13.0	9.2	14.6	14.4
Local transit	4.3	2.7	5.9	3.3
Other modes	3.5	3.0	4.3	2.7
Paratransit	1.2	0.0	1.6	0.1

Source: Stephen Brumbaugh, "Travel patterns of American adults with disabilities", Bureau of Transportation Statistics Issue Brief (United States Department of Transportation, 2018), figure 7.

The United Kingdom used a variety of data sources to study the experiences of people with disabilities on public transport in Great Britain, but the study does not address convenient access.

A survey from Switzerland showed that, in 2012, 66.8 per cent of "people with severe disabilities" reported that they could use public transport easily, down from 77.5 per cent in 2007.

Another example from Switzerland shows the average distance from homes to the nearest public transport stops, calculated based on the road network. Shorter average distances are naturally associated with easier access to the public transport system. The indicator thus shows whether the conditions are in place to ensure an environmentally friendly, easily accessible mobility for all, which is a step towards sustainable development.

20.26: Average share of the built-up area of cities that is open space for public use for all, by sex, age and persons with disabilities (Sustainable Development Goal indicator 11.7.1)

Level 3: Indicator for which acquiring data is more complex or requires the development of data collection mechanisms that are not currently in place

Link to the metadata related to this Sustainable Development Goal indicator

According to the metadata:

> The main sources of data are satellite imagery (open sources), documentation outlining publicly owned land and community-based maps.
>
> To estimate the total surface of a built-up area, data can be extracted from existing layers of satellite imagery ranging from open sources, such as Google Earth, the United States Geological Survey and the National Aeronautics and Space Administration's Landsat and Sentinel, to higher resolution land cover data sets and commercial imagery. Images are to be analysed for the latest year available.
>
> For an inventory of open public space, information can be obtained from legal documents outlining publicly owned land and well-defined land use plans. In some cases, where this information is lacking, incomplete or outdated, open sources, key informants in the city and community-based maps, which are increasingly recognized as a valid source of information, can be a viable alternative.
>
> The share of land occupied by public open spaces cannot be obtained directly from the use of high-resolution satellite imagery because it is not possible to determine the ownership or use of open spaces through remote sensing. However, fieldwork to validate and verify

the open spaces derived from satellite imagery helps to map out land that is for public and non-public use.

Unfortunately, none of these sources reports on the accessibility of open spaces. If there were national accessibility standards, audits could be done to determine whether open spaces are accessible. These audits could be carried out by auditing teams or, if smartphone penetration were adequate, crowdsourced data could be used, so that persons with disabilities could report on their experience in open spaces using an auditing application. An example of such an application can be found at AXS Map.