Technical Report on
Monitoring Migration-related SDG Indicators

Prepared by Erlinda Go (UNSD consultant)

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Contents

Chapter I

Introduction

A. Background

1. International migration continues to increase in scope, scale and complexity. Today, most countries in the world are impacted by international migration, often simultaneously as a country of origin, destination and transit. Despite the many contributions migrants make to development in countries of origin and destination, they often face specific challenges during their journeys, at destination or upon return. Hence, migrants can be considered a group with specific needs for support to overcome vulnerabilities.

2. In recognition of these realities, the 2030 Agenda for Sustainable Development and other recent global policy initiatives on international migration, including the Global Compact for Safe, Orderly and Regular Migration, called for quality, timely and fit-for-purpose migration data and have posed enormous challenges to national statistical systems.

3. In response to the global call for better data on international migration and the need to monitor migration-related goals and targets in the 2030 Sustainable Development Agenda, the United Nations Statistics Division, in collaboration with the Population Division, United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP), UN Economic Commission for Latin America and the Caribbean (UNECLAC), United Nations Office on Drugs and Crime (UNODC), the International Organization for Migration (IOM) and the United Nations Children's Fund (UNICEF), embarked on a four-year project on the "Collection and Use of International Migration Data in the context of the 2030 Agenda for Sustainable Development and the New York Declaration for Refugees and Migrants". The overall objective of the project is to strengthen national capacity in collecting and compiling comprehensive and internationally comparable migration data that meet international standards, to enhance understanding of the uses and limitations of migration data for policy purposes and to provide data for monitoring the migration related goals and targets in the 2030 Agenda for Sustainable Development.

4. Among the first activities of the project is the production of a technical report to assist countries in their efforts to produce data for monitoring the migration related goals and targets in the 2030 Agenda for Sustainable Development.

B. Objective and scope

5. The main objective of the Technical Report on Monitoring Migration-related SDG Indicators is to provide methodological guidelines to assist countries in collecting, compiling and using data to monitor SDG indicators directly related to migrants and migration.

6. The 2017 UN Expert Group Meeting on Improving Migration Data in the Context of the 2030 Agenda for Sustainable Development reviewed a set of 30 SDG indicators and agreed to use this set of indicators, subject to future technical

refinement, to guide priority setting for the United Nations and other relevant organisations in developing methodologies on measuring migration-related SDG indicators and in assisting countries to produce data for those indicators.[1]

7. The target audience and potential users of the technical report are national statistical offices and other national statistical entities involved in coordinating the compilation of data for SDG monitoring; national line ministries that are providing or can potentially provide specific migration data and indicators; national custodians of migration-related SDG indicators; and other interested parties.

8. The scope of the technical report is limited to migration-related SDG indicators reviewed and agreed to by the 2017 UN Expert Group Meeting. The list of indicators is provided in the recommendations of the Expert Group[2] and reproduced in Chapter III. They include those directly related to migration (for example, remittances, trafficking) as well as those identified as related to migration and potentially suitable for disaggregation by migratory status. This list of indicators, therefore, does not into account potential modifications that might ensue from comprehensive reviews of SDG indicators mandated to take place in 2020 and 2025.

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[1] Recommendations of the Meeting are available at
https://unstats.un.org/unsd/demographic-social/meetings/2017/new-york--egm-migration-data
[2] Ibid.

Chapter II

Definitions, identification and data capture

A. Definitions

International Migrant

9.   The following definition is based on the 1998 UN Recommendations on Statistics of International Migration. As a word of caution, it worth noting that the UN Statistical Commission has mandated the revision of these recommendations, and work hitherto is currently underway. This may result in modifications in the definitions of concepts used in the realm of international migration statistics.

10. An *international migrant* is defined as a person who moves to a country other than that of his or her usual place of residence for a period of at least 12 months.

11. To be considered an immigrant of a country, a person must satisfy the following requirements:[3]

- entering the country by crossing the border

- having been a usual resident of another country before entering or not a usual resident of the country when entering

- staying or intending to stay in the country for at least one year

Migratory Status

12. Providing data for the global monitoring of SDGs is an enormous undertaking for all countries. Having to further disaggregate the indicators beyond the original required dimensions presents a challenge to all statistical systems.

13. Disaggregating selected SDG indicators by migratory status is no simple undertaking by any means. Therefore, when the Expert Group Meeting on Improving Migration Data in the Context of the 2030 Agenda for Sustainable Development agreed on a list of indicators to be disaggregated by migratory status, it

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[3] United Nations, 2017. *Handbook on Measuring International Migration through Population Censuses – Draft as of 1 March 2017*. (https://unstats.un.org/unsd/demographic-social/Standards-and-Methods/files/Handbooks/international-migration/2017-draft-E.pdf)

recommended a stepwise approach to defining migratory status.[4] The present report adopts the Expert Group Meeting's recommended approach.

14. As a first step, a person's migratory status would be classified, per national practices and regardless of legal status, as:

- Native-born or foreign-born

- Citizen or non-citizen (including stateless persons)

15. Countries interested in other migration-related population groups could, where possible, disaggregate the data by country of birth of parents, duration of stay in country, ever-resided abroad and/or reason for migration.

B. Sources of data[5]

16. Major data sources for international migration statistics and for monitoring migration-related SDG indicators include (a) population and housing censuses; (b) sample surveys; and (c) administrative registers and variety of other administrative sources including border control statistics.

Population censuses

17. A population census is the total process of planning, collecting, compiling, evaluating, disseminating and analysing demographic, economic and social data at the smallest geographic level pertaining, at a specified time, to all persons in a country or in a well-delimited part of a country.[6]

18. Population censuses are perhaps the most widely available source of internationally comparable information on international migration and migrant population characteristics in the world. For many countries in the world, censuses are the only source of data on international migration and migrant population characteristics.

19. Population census is a major source of data on the stock of foreign-born or foreign citizens in the country. It is also possible for a population census to capture information on place of residence at a specified time prior to enumeration, for instance one or five years, thus allowing the possibility of obtaining the number of international migrants who arrived during the relevant period prior to enumeration and remained in the country until the time of enumeration.

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[4] Recommendations of the Meeting are available at
https://unstats.un.org/unsd/demographic-social/meetings/2017/new-york--egm-migration-data
[5] Adapted from United Nations, 2017. *Handbook on Measuring International Migration through Population Censuses.*
[6] United Nations, 2015. *Principles and Recommendations for Population and Housing Censuses,* Revision 3, Statistical Papers, Series M, No.67, Rev.3. Sales No. E.15.XVII.10. Available at
http://unstats.un.org/unsd/publication/seriesM/Series_M67rev3en.pdf

Advantages

20. The most distinctive strength of the population census lies in its universal coverage, down to the smallest geographical units. Because a census includes all residents, all international migrants are included in the count. Its universal coverage permits generation of summary statistics at a low geographical detail or for small population groups, and the production of extensive and detailed cross-tabulations of migrant population characteristics. This feature of the census is a very important one where migrants, or certain categories of migrants, represent a small proportion of the population.

21. Because of its universal coverage, the census also covers undocumented migrant population. Even if the census is not able to reach some portions of the undocumented migrant, population it is the best source available given that administrative sources like population registers and residence permit systems by definition exclude this population segment.

22. Another advantage of the census is that it collects a substantial amount of information about each individual. Because of this, it has the potential of characterizing the international migrant population in terms of certain demographic and socio-economic characteristics. Thus, it is possible to cross-tabulate migrant population characteristics such as country of birth, citizenship, duration of stay and place of residence in the receiving country against a combination of demographic and socio-economic variables including age, sex, educational attainment, marital status, labour force status and occupation. In fact, it is possible to cross-tabulate migrant population characteristics with any of the variables collected in the census, which allows the investigation and analysis of a wide range of policy relevant issues.

Disadvantages

23. Because censuses are generally carried out only every decade (five years in a few countries), they cannot capture many of the current trends in international migration in a timely way.

24. Some countries employ sampling in their population census. In these cases, countries administer long forms on a sample basis (say, one in 10 or 20 households) in order to investigate certain topics in greater depth. When international migrants are a very small proportion of a country's population, the number of migrants selected from a sample in the census may not be large enough to allow reliable comparisons between migrant and non-migrant population. This is even more so when international migrants are further filtered to focus on, for example, recent migrants or migrants from a specific country.

25. Many of the questions involving international migration require responses that relate to events that took place within specified periods in the distant past, thus relying on the respondent's ability of not only event recall but also temporal recall. Recall errors and telescoping effects could lead to error in ascribing migration status.

Household surveys

26. Household sample surveys collect information from households as units of consumption, production, income sharing and decision-making. Household surveys also collect information on particular members of the household or persons linked to a household in special ways. Household surveys include both specialized international migration surveys and other-purpose household surveys where the main focus is not international migration, but where individual questions or entire modules can be targeted to collect data on migration.

27. Specialized household surveys on international migration focus on topics related to international migration. This type of survey is more flexible compared to the other-purpose household survey as it can be designed to fit its objective and to target the right population. However, while specialized international migration surveys are flexible in identifying the target population and including the required number of questions, which may not be easily achieved when using other-purpose surveys, they tend to be very expensive to conduct and are seldom or never conducted in a country.

28. Other-purpose surveys focus on topics other than international migration such as labour force and employment, health, fertility and mortality, or income and expenditure, or an integrated survey covering multiple topics. Other-purpose household surveys that have large sample size have been used to collect some information on international migration by adding a few questions or a module related to international migration. Unlike specialized migration surveys, many other-purpose surveys are usually conducted regularly, and it requires less resource to add to them some questions on international migration.

29. The strength of household sample surveys in studying international migration and international migrant population is the wealth of information that can be collected. The detailed data collected in household surveys allow for analysis of differences in social and economic characteristics between migrant and non-migrant population, as well as among various migrant groups and in a specific period of time that data should be collected for.

30. A major challenge in using sample surveys to study international migration and international migrant population is the requirement of sample size and the associated trade-off with sampling errors. Because of the low percentage of international migrant population in most countries, the sample size of the survey needs to be reasonably large to capture enough migrants for meaningful analysis. The sample size requirements will further increase if the interest of the study is a sub-group of migrants, for example, recent migrants, youth migrants or employed migrants.

Administrative registers and other administrative sources

31. Administrative registers include population registers, registers of foreign citizens and other special types of registers covering particular groups of persons, such as registers of asylum-seekers, pension system, or the health care system. A register is a data system for continuous recording of selected information pertaining to each member of the target population. Although the main purpose of registration is administrative, a register can be used for the compilation of up-to-date statistical

information on the size and characteristics of the target population. The registers of interest for our purpose are those in which the country of birth, country of citizenship and changes of country of residence are recorded for the target population.

a) Population register

32. A well-functioning national population register that includes both citizens and foreign citizens has the potential of providing the most comprehensive coverage of those persons, since they register changes of residence of both citizens and foreign citizens. In general, a population register has rules in place to determine inscription in, or deregistration from, the register. It typically also includes basic demographic information on each registrant, such as place and date of birth and country of citizenship.

33. There are certain limitations to the use of population registers for statistics on international migration and international migrant population. First, a population register is not established for statistical purposes and as a result, statistics derived from the register depend on the rules and regulations regarding registration and deregistration. Second, those rules vary considerably not only between countries but also within countries depending on the citizenship of the person being registered or deregistered. Variation of rules among countries yields data that are not strictly comparable at the international level.

b) Register of foreign citizens

34. Registers of foreign citizens operate in a manner similar to population registers but cover only foreign citizens who are residents of the country legally. Just as in the case of national population registers, the conditions under which foreign citizens are inscribed in, or deregistered from, the register of foreign citizens provide a characterization of persons who can be considered international migrants. Registers of foreign citizens usually accord priority to the recording of the migration characteristics of each person registered, including the type of residence permit and its duration of validity. Consequently, registers of foreign citizens have the potential to provide information on specific categories of international migrants.

c) Register of asylum seekers

35. Registers of asylum-seekers or, more precisely, registers of the cases of asylum-seekers have been, or are being, set up in some countries to permit the follow-up of the status of each case over time. To the extent that such registers are successful in recording the entry of asylum-seekers in the country and their departure, they also have the potential of producing statistics on the stock of asylum-seekers and the net inflow of asylum-seekers.

Other administrative sources

36. Administrative sources other than the registers also produce data that are indicative of either inflows or outflows of particular groups of international migrants. For example, statistics derived from the issuance of residence permits refer to inflows of foreign citizens; those obtained from the issuance of work permits refer to inflows of foreign migrant workers; and those obtained from the official

clearance of departing migrant workers cover citizens whose contracts to work abroad must be scrutinized before departure.

37. Certain administrative sources refer to even more specific groups of persons. For example, data on the number of applications for asylum filed over a period is an indicator of the inflow of asylum-seekers. Also, records kept by tax or social security authorities are a potential source of information on the numbers of foreign citizens paying taxes or covered by social security. Data derived from those sources are indicative of the size of the employed foreign population as is information obtained from reports by establishments (namely, enterprises, firms and manufacturing facilities) on the number of foreign workers they employ.

Non-traditional sources

38. Innovative approaches such as integration of multiple data sources may be used to obtain more comprehensive statistics on international migration and international migrant population. When using multiple sources, attention should be paid on the consistency of concepts and definitions employed by the various sources. The universe of each source, as well as the time reference periods, should also be ascertained when planning to combine data from multiple sources.

39. The use of big data has been applied in many fields with success. This method may be explored to possibly enhance the availability and timeliness of migration statistics, paying attention to the quality of data obtained. When using big data, statisticians should ensure that privacy, ethical and human rights issues are adequately addressed.

C. Identifying international migrant population in practice

In population censuses and household surveys

40. Given the limited number of questions for identifying an international migrant allowed in a population census or household sample survey not dedicated to the topic of international migration, the information collected typically refers to each individual's country of birth or country of citizenship. Persons identified as having been born in a foreign country would qualify as international migrant if he or she has been in the country for at least one year. Persons identified as non-citizens, on the other hand, are not necessarily international migrants, as some people born in the country may be required to adopt the citizenship of their non-citizen parents.

41. Many of the concerns related to international migration, however, are citizen-specific in the sense that foreign citizens and citizens do not necessarily have equal social, economic or political rights. Similarly, many of the issues raised in the policy domain relate to those who, even if they have acquired the citizenship of the country where they live, were not part of that country's population since the beginning of their lives.[7]

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[7] United Nations, 1998. *Recommendations on Statistics of International Migration, Revision 1*. Statistical Papers, Series M, No. 58, Rev. 1.

42. For the study of the impact of international migration, therefore, two subpopulations are the focus of interest: (a) foreign citizens living in a country; and (b) persons born in a country other than the one in which they live (i.e., the foreign-born).

43. To identify foreign-born persons in a census or survey, the main question asked is the country of birth. A question on the year or period of arrival is also relevant to further differentiate foreign-born persons by the length of time they have lived in the country. The proposed questions to identify foreign-born persons in a census or survey follow.[8]

ASK OF ALL PERSONS

1. Where was (person) born? or
   What was the usual place of residence of (person's) mother when (person) was born?
   __ (This country) [Specify province and municipality]
       Province _____   __ Unknown
       Municipality _____   __ Unknown
   __ Another country [Specify country according to present borders]
       Country _____   __ Unknown
   __ Country of birth unknown

ASK OF PERSONS BORN IN ANOTHER COUNTRY

2. On which year and month did (person) first arrive in (this country) to live for a year or more?
       Year _____   Month _____   __ Unknown

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44. To identify non-citizens (or foreign citizens) in a census or survey, the main question asked is the country of citizenship. The proposed question to identify non-citizens in a census or survey follows.

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[8] United Nations, 2017. *Handbook on Measuring International Migration through Population Censuses*.

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ASK OF ALL PERSONS

1.      Of what country is (person) a citizen? or
        What is (person's) country of citizenship?
        __ (This country)
        __ (This country) and another country [Specify the other country
        according to present borders]
           The other country _____    __ Country unknown
        __ Another country [Specify country according to present borders]
            Country _____          __ Country unknown
        __ Country of citizenship unknown
        __ No citizenship (Stateless)
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In administrative records

45. International migrant populations covered by administrative records vary considerably depending on the administrative source. National population registers may cover the entire population of the country, be they citizens or foreign citizens, as is the case in many countries in Western Europe. Other national population registers may cover only citizens of the country or some combination of citizens and non-citizens (for example, legal immigrants). Besides national population registers, there are specialized registers that cover only a specific population group, for instance a register of foreign citizens or a register of asylum seekers (see section B above). In most if not all of these registers, country of citizenship is one of the information items included in each record. Some registers may also include country of birth. In general, because the need to separate foreign citizens from citizens serves an important function in population registers, the population group relating to international migration that can be most easily identified from population registers is the foreign population.

46. Other administrative sources may be tapped to provide material on international migration and international migrant population if those sources collect information on country of citizenship as part of an individual's record. When this is the case, the records they keep are potential sources of information on foreign citizens with respect to the topic of concern to the administrative authority. Possible examples are income tax records, social security records and university student records.

D. Challenges in identifying and capturing migrant population

Through population censuses

47. The identification of international migrants in most population censuses relies mainly on a person's country of birth and his year of first arrival into the country, or on his country of citizenship (see section C above). Some challenges to obtaining the required pieces of information include the respondent's lack of knowledge on these items for certain members of the household, which may be exacerbated if the

countries involved underwent changes in boundaries or broke up into several independent countries. Thorough enumerator training on this topic can help in obtaining the appropriate answers, which are crucial in determining migrant status of all household members. If the answer is unknown, it should be properly marked as such.

48. In many population censuses, some questions are included in a long form that is administered on a sample basis. In major receiving countries where migrants constitute a sizeable portion of the population (over 5 per cent) and where census samples are also large (covering 10 or 20 per cent of the total population), information obtained on the foreign-born (or foreign population) may be adequate to characterize them. However, if a country's foreign-born (or foreign population) is small relative to the country's total population, sampling could yield unreliable results on the foreign-born (or foreign population). Capturing the foreign-born (or foreign population) in a census on a sample basis in such case would have the same limitations as for the household sample survey.

49. While censuses seek to cover the whole population, there are inevitably people missed, and migrants tend to be especially prone to being missed in population censuses. This is especially the case if international migrant populations have a vested interest to avoid being counted. To improve the capture of international migrant population in the census, a strategy would be to identify clusters of immigrant populations prior to the census and target them with specially tailored communications and publicity campaigns to encourage their participation in the census.

50. Migrant populations with undocumented or ambiguous status within the country of destination may seek to avoid detection in the census. To give undocumented migrant population the confidence to participate in the census and to allay the fears they may have of being detected if they participate in the census, a publicity campaign imparting the message that clearly separates the census enumeration from any linkage with immigration authorities is a strategy strongly worth considering.

51. Non-familiarity with the national or predominant language of the country may be a deterrent in the participation of migrant population, especially recent migrants, in the census. Some countries have found that engaging local cultural or migrant groups and ethnic community leaders in transmitting the census messages can help improve the participation of these groups in the census. In countries with significant immigrant groups that are not conversant in the language of the host country, it is recommended that provisions be made to ensure that participation in the census is not impeded by an inability to understand the questions. For each major language group, either a separate questionnaire is prepared (for the self-enumeration method) or a translation of the entire questionnaire is prepared for use by an enumerator conversant with the migrant's language (for the enumerator method).

52. Enumerating people living in unconventional living situations poses a challenge to interviewers, and international migrant population may live disproportionately in such conditions. Others may live with relatives or friends or in boarding houses, moving frequently. Special efforts can be made to induce them to participate in the census. Counting refugees in refugee camps is another major challenge for censuses. Special attention and strategy are needed when enumerating refugees living in an

open camp, which are often characterized by makeshift shelters and fluctuating boundaries. Some strategies and examples used by countries to deal with these cases are given in the *Handbook on Measuring International Migration through Population Censuses*.[9]

Through household surveys

53. A challenge in the measurement of international migration stocks relates to the fact that migrants are not randomly spatially distributed throughout the population and are often highly clustered, so that sampling them accurately becomes difficult. Moreover, where particular migrant groups are a very small proportion of the national population, the use of sampling can result in insufficient numbers of certain groups of migrants being detected, which limits the use of the information gathered because estimates of these small populations are not reliable enough for detailed analysis and cross-tabulation.

54. Nationally representative household surveys, such as labour force and employment surveys, fertility and health surveys, and income and expenditure surveys, are major sources of data for the some of the SDG indicators. If these surveys include a question to distinguish international migrant population from non-migrant population , there is the potential to compare migrant population and non-migrant population on the topic of the survey. In the majority of countries, however, such surveys have sample sizes that are too small to yield statistically reliable data on international migrants.[10]

55. One way of achieving an adequate number of international migrants in the sample is to use disproportionate sampling in a stratified multi-stage sampling scheme, whereby sampling fractions would depend on the proportion of international migrant population in each geographic area. This sampling scheme is appropriate for specialized international migration surveys, but not for other nationally representative surveys.

56. A barrier to adopting this sampling scheme is the absence of population frame that can be used to select a sample of international migrants or a population frame of migrant households, if households are the ultimate sampling elements. Constructing a comprehensive and accurate listing of international migrants or listing of migrant households is, however, easier said than done, and continues to be a big challenge for most countries.

57. Household surveys by definition include only households as their universe. Excluded from this universe are persons living in collective living quarters. It should be noted that some of these living quarters house the more disadvantaged of international migrant population. Recent migrants may live in rooming houses or similar lodgings, student dormitories or staff quarters. Other migrant populations may live in worker camps or workers' quarters. Additionally, many refugees live in

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[9] See United Nations, 2017. *Handbook on Measuring International Migration through Population Censuses*, Chapter IV.
[10] Bilsborrow, R. E. et al, 1997. *International Migration Statistics: Guidelines for Improving Data Collection Systems* (Geneva, International Labour Office, 1997).

refugee camps. If the aim of the study is to cover all migrant population, persons living in collective living quarters would have to be sampled as well.

Through administrative sources

58. Other than national population registers that include everyone, administrative sources vary widely in the segment of the population they cover, in their scope and in their purpose, and, hence, in the statistics that they can potentially provide. Because administrative sources serve mainly an administrative purpose, the production of statistics is not a priority. Identifying and capturing migrant populations are often also not a priority. If their operation includes international migrants, the system may or may not record the information necessary to distinguish international migrants from non-migrants. When this information is collected, what is collected may vary but tends to be limited to either the individual's country of citizenship or country of birth, or, in some cases, both.

59. When using data from an administrative source, it is important to remember that its coverage and definition could be narrower, fitting its limited administrative purpose. For example, the register of foreign citizens excludes foreign citizens who are not legal residents of the country.

E. Combining data from various sources

Why combine data sources

60. The three sources of statistics – censuses, surveys and administrative data – each provide statistics on specific segments of the migrant population and their characteristics. Often, each source provides a partial picture of the totality of international migrant population in a country.

61. It is possible to gain a more comprehensive picture of a country's international migration situation by putting together data from a number of these different sources. Combining data sources expands the overall coverage by including more types of international migration as well as including additional migrant populations missed were only one source utilized.[11] It also increases the breadth of information about international migrant population, such as their demographic and socio-economic characteristics, reasons for migration, integration outcomes, and so on.

62. Results from a specialized migration survey can produce statistics only on international migrant population or households with, or headed by, international migrants. For a fuller analysis, it is useful to compare migrant population with non-migrant population. This can be done by selecting a set of key variables from the survey of migrant population and comparing them to those of non-migrant population from a census or another nationally representative household survey.

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[11] United Nations, 2017. *Handbook on Measuring International Migration through Population Censuses*, Chapter IX.

63. Combining sources, however, is not a simple undertaking. There are significant challenges, and ways to deal with the challenges continue to be explored and critically examined.

Challenges in combining data sources

64. A major challenge to combining data sources is the disparity in the concepts and definitions employed by the different sources. The adoption of uniform standards in the definition of international migrants is complicated by the fact that different government agencies are responsible for the various collections on international migration.

65. Administrative agencies exist to serve their own important needs. National Statistical Offices are typically not in a position to change the definitions or coverage of the administrative data collection system, nor to influence its modes of operation. The best that can be done is to recognize the differences in concepts and definitions and deficiencies of the data collected by the different administrative agencies, while at the same time working towards the goal of harmonization.

66. Another challenge is the lack of consistency in the classification of migrant population characteristics used by the different sources. The need to harmonize is especially crucial in the classifications of labour force, employment, industry, occupation and education, since a large amount of international migration is related to work and, to a lesser degree, study.

67. Another way of combining data is to link individual records from the census or survey with administrative data sources (such as population registers, immigration records, income tax records, social security records, etc) to arrive at a more comprehensive profile for each individual. To facilitate this, a unique identifier for each individual that is common to the different sources must be part of the individual record in each source. The challenge is that this is rarely the case, and matching individual records become a tedious, if not impossible, exercise.

68. Where it is possible to link records, the other challenge is ensuring data confidentiality and protecting the privacy and confidentiality of individuals.

Minimum requirements

69. A common definition of "international migrant" across sources is a must when combining data from two or more sources. Definitions under each source must be ascertained carefully before combining data from the different sources. Of the various types and definitions of international migrant population or proxies thereof, the foreign-born person and foreign citizen (non-citizen) appear to be the least prone to discrepancies in definition and are therefore appropriate as a first step in identifying migrant status for the monitoring of migration-related SDG indicators. Researchers need to ensure that in each source, the definitions of foreign-born and non-citizen are made without regard to a person's legal status; and that stateless persons, if classified separately, are included with non-citizens in the analysis.

70. Common concepts and definitions should also apply to all variables that are being combined or compared, for example socio-economic characteristics such as educational attainment, labour force status and occupation.

71. Often, data from various sources refer to a different year or month. As much as possible, they should be adjusted to a common time period using available methods.

72. Care should be taken when comparing migrant population with non-migrant population where the data for the two groups come from different sources. Unless the study specifies otherwise, the two groups should, as much as possible, represent the totality of migrant population and the totality of non-migrant population. When only a subset of the totality is sampled (sample survey) or captured (administrative source), it should be clearly disclosed and explained.

73. There may be situations where micro-data from two sources can be linked to obtain an expanded data set that allows comparison of migrant population and non-migrant population with regard to various characteristics. The minimum requirements for this are the existence of a unique identifier for each individual, and the recording of this identifier in both sources. The combined data set represents an expanded profile containing each individual's migrant status, migrant characteristics, and socio-economic characteristics.

74. When working with micro-data from any sources, protecting the privacy and confidentiality of individuals must be diligently observed.

Chapter III

Migration-related SDG indicators

A. Indicators directly related to migration

75.   The following five indicators are classified as "for migrant population". They are directly related to migration.

> 4.b.1 Volume of official development assistance flows for scholarships by sector and type of study
>
> 10.7.1 Recruitment cost borne by employee as a proportion of yearly income earned in country of destination
>
> 10.7.2 Number of countries that have implemented well-managed migration policies
>
> 10.c.1 Remittance costs as a proportion of the amount remitted
>
> 16.2.2 Number of victims of human trafficking per 100,000 population, by sex, age and form of exploitation

B. Indicators that should be disaggregated by migratory status

76.   Two indicators are classified as "for disaggregation—minimum", referring to indicators that explicitly call for disaggregation by migrant status.

> 8.8.1 Frequency rates of fatal and non-fatal occupational injuries, by sex and migrant status

> 8.8.2 Level of national compliance with labour rights (freedom of association and collective bargaining) based on ILO textual sources and national legislation, by sex and migrant status

77.   A total of 22 indicators are classified as "for disaggregation -- extended". These indicators do not explicitly call for disaggregation by migratory status but are considered relevant in capturing and understanding the condition/situation of migrant populations in their receiving countries.

> 1.1.1 Proportion of population below the international poverty line, by sex, age, employment status and geographical location (urban/rural)

> 1.3.1 Proportion of population covered by social protection floors/systems, by sex, distinguishing children, unemployed persons, older persons, persons with disabilities, pregnant women, newborns, work-injury victims and the poor and the vulnerable

> 3.1.1 Maternal mortality ratio

> 3.2.1 Under-five mortality rate

> 3.3.1 Number of new HIV infections per 1,000 uninfected population, by sex, age and key populations

> 3.4.1 Mortality rate attributed to cardiovascular disease, cancer, diabetes or chronic respiratory disease

> 3.8.1 Coverage of essential health services (defined as the average coverage of essential services based on tracer interventions that include reproductive, maternal, newborn and child health, infectious diseases, non-communicable diseases and service capacity and access, among the general and the most disadvantaged population)

> 3.8.2 Proportion of population with large household expenditures on health as a share of total household expenditure or income

> 4.1.1 Proportion of children and young people: (a) in grades 2/3; (b) at the end of primary; and (c) at the end of lower secondary achieving at least a minimum proficiency level in (i) reading and (ii) mathematics, by sex

> 4.3.1 Participation rate of youth and adults in formal and non-formal education and training in the previous 12 months, by sex

4.6.1 Proportion of population in a given age group achieving at least a fixed level of proficiency in functional (a) literacy and (b) numeracy skills, by sex

5.5.2 Proportion of women in managerial positions

8.3.1 Proportion of informal employment in non-agriculture employment, by sex

8.5.1 Average hourly earnings of female and male employees, by occupation, age and persons with disabilities

8.5.2 Unemployment rate, by sex, age and persons with disabilities

8.6.1 Proportioon of youth (aged 15-24) not in education, employment or training

8.10.2 Proportion of adults (15 years and older) with an account at a bank or other financial institution or with a mobile money-service provider

10.2.1 Proportion of people living below 50 per cent of median income by sex, age and persons with disabilities

10.3.1 Proportion of population reporting having personally felt discriminated against or harassed in the previous 12 months on the basis of a ground of discrimination prohibited under international human rights law

11.1.1 Proportion of urban population living in slums, informal settlements or inadequate housing

16.1.3 Proportion of population subjected to physical, psychological or sexual violence in the previous 12 months

16.9.1 Proportion of children under 5 years if age whose births have been registered with a civil authority, by age

C. Contextual indicator

78.   Finally, one indicator is considered "contextual". This indicator does not have direct reference to international migration, nor is it possible to disaggregate it by migratory status.

3.c.1 Health worker density and distribution

Chapter IV

Collection and compilation of data for migration-related SDG indicators

1.1.1 Proportion of population below the international poverty line, by sex, age, employment status and geographical location (urban/rural)

[Custodian agency: World Bank and ILO]

A. Definition and concepts

79.   The indicator "Proportion of population below the international poverty line" is defined as the percentage of the population living on less than $1.90 a day at 2011 international prices.

80.   The disaggregation listed for indicator 1.1.1 includes by sex, age, employment status and geographical location (urban/rural). Disaggregating poverty status by employment status allows one to capture the "working poor", with the possibility of estimating a sub-indicator "Proportion of workers who, despite being in employment, live in poverty".

81.   The sub-indicator "Proportion of employed population living below the international poverty line", also referred to as the working poor, is defined as the proportion of the employed population living in households in poverty.

82.   The *international poverty line* is a threshold used to measure extreme poverty based on consumption (or income, if consumption is not available) levels. A person is considered extremely poor if his or her consumption (or income) level falls below the minimum level necessary to meet basic needs. The current international poverty line is set at $1.90 a day and was adopted in October 2011 by the World Bank using the 2011 purchasing power parity (PPP).

83.   *Purchasing power parities* (PPPs) measure the total amount of goods and services that a single unit of a country's currency can buy in another country. The PPP between countries A and B measures the amount of country A's currency required to purchase a basket of goods and services in country A as compared to the amount of country B's currency to purchase a similar basket of goods and services in country B. PPPs can thus be used to convert the cost of a basket of goods and services in local currency into a common currency (e.g. US dollars) while eliminating price level differences across countries. In other words, PPPs equalize the purchasing power of currencies.[12]

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[12] Fundamentals of PPPs, http://pubdocs.worldbank.org/en/332341517441011666/PPP-brochure-2017-webformat-rev.pdf

84.   *Employed persons* are all persons of working age who, during a short reference period such as a day or a week, performed work for others in exchange for pay or profit.[13]

85.   The *working poor* refers to employed persons living in households that are classified as poor.

86.   *Households in poverty* or *poor households* refer to households whose total consumption expenditure (or total household income) is below the poverty line of $1.90 per person per day, taking into account the number and composition of household members (e.g., number of adults and children).

B.   Methodology, sources of data and data issues

87.   The source of data for indicator 1.1.1 (as well as its sub-indicator) is a nationally-representative household survey that collects data on household consumption expenditure or household income. Examples of such surveys are household income and expenditure surveys (HIES), Living Standards Measurement Surveys (LSMS) with employment modules, and labour force surveys that collect information on household income. Consumption is preferred to income for measuring poverty.[14]

88.   When measuring international poverty of a country, the international poverty line at PPP is converted to local currencies in 2011 price and is then converted to the prices prevailing at the time of the relevant household survey using the best available Consumer Price Index (CPI). This represents the poverty line to be used in calculating poverty rate from that survey. All inter-temporal comparisons are real, as assessed using the country-specific CPI. Interpolation/extrapolation methods are used to line up the survey-based estimates to the desired reference years.[15]

89.   Consumption, including consumption from own production (or income when consumption is unavailable), is calculated for the entire household and divided by the number of persons living in the household to derive a per capita measure. Households are then ranked by either per capita consumption (or income) and compared to the poverty line to determine the numbers of people living above and below the poverty line.

90.   The sample distributions of poor people are weighted by household size and sample expansion factors to generate an estimate of the number of people with levels of per capita consumption (or income) below the poverty line. This number is divided by the total population to estimate the proportion of the population that is living below the poverty line. The result is multiplied by 100 to obtain a percentage. After completing the required calculation steps described above, the final formula for indicator 1.1.1 is:

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[13] United Nations Statistics Division, SDG Indicators Metadata Repository for Indicator 1.1.1, https://unstats.un.org/sdgs/metadata/files/Metadata-01-01-01b.docx
[14] United Nations Statistics Division, E-Handbook on SDG Indicators for Indicator 1.1.1, https://unstats.un.org/wiki/display/SDGeHandbook/Indicator+1.1.1
[15] United Nations Statistics Division, SDG Indicators Metadata Repository for Indicator 1.1.1, https://unstats.un.org/sdgs/metadata/files/Metadata-01-01-01a.docx

Proportion of population living below poverty line $= \dfrac{Np}{N} \times 100$

where
Np is the estimated number of people living in households with per capita consumption (or income) below the international poverty line, and N is the total number of people living in households.[16]

91.   The sub-indicator "Proportion of employed population living below the international poverty line" focuses on persons who are employed. This sub-indicator can be calculated if the source data contain detailed information on the employment status of each household member. Detailed employment data are usually collected in labour force surveys but may not be collected in other household surveys like HIES and LSMS. On the other hand, consumption and expenditure may not be collected in labour force surveys; however, household income is usually collected and may be used in calculating the poverty rates.

92.   The calculation of the proportion of employed persons living below the international poverty line follows the same steps outlined for all persons but is limited to those who are employed. The final formula is:

Proportion of employed population living below poverty line $= \dfrac{Ep}{E} \times 100$

where
Ep is the estimated number of employed persons living in households with per capita consumption (or income) below the international poverty line, and E is the total number of employed persons living in households.

93.   Challenges in measuring and monitoring poverty often arise from the lack of timeliness, frequency, quality or comparability of data on consumption and income from household surveys. The low frequency and lack of comparability of the data available in some countries create uncertainty over the magnitude of poverty reduction.

94.   Data quality issues arise in measuring household living standards. Household surveys ask detailed questions on all household consumption expenditures and sources of income. This requires careful questioning and recording by well-trained enumerators, which may not be satisfactory in all countries.

95.   Comparisons of countries at different levels of development also pose a potential problem because of differences in the relative importance of the consumption of nonmarket goods. The local market value of all consumption in kind (including own production, particularly important in underdeveloped rural economies) should be included in total consumption expenditure but may not be. Most survey data now include valuations for consumption or income from own production, but valuation methods vary.

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[16] United Nations Statistics Division, E-Handbook on SDG Indicators for Indicator 1.1.1, https://unstats.un.org/wiki/display/SDGeHandbook/Indicator+1.1.1

96.   Consumption comes closer to the notion of living standards, but consumption data are not always available. In such cases, income data are used if available. However, income is generally more difficult to measure accurately, and can also vary over time even if living standards do not.

97.   Internationally comparable poverty lines are useful for producing global aggregates of poverty. However, such a universal line is generally not suitable for the analysis of poverty within a country. For that purpose, a country-specific poverty line needs to be constructed that reflects the country's economic and social circumstances, and adjusted for different locations such as rural and urban areas.

98.   At the country level, comparisons over time may be affected by such factors as changes in survey types or data collection methods. The use of PPPs rather than market exchange rates ensures that differences in price levels across countries are taken into account. However, it cannot be categorically asserted that two people in two different countries, living below US$1.90 a day at PPP, face the same degree of deprivation or have the same degree of need.[17]

99.   This indicator measures poverty based on household per capita consumption (or income), ignoring intra-household inequality in the distribution of resources. It also does not take into account other dimensions of poverty such as vulnerability, people's feeling about relative deprivation and lack of voice and power of the poor.[18]

C. Rationale for disaggregating Indicator 1.1.1 by migratory status

100. Migrant populations are often perceived as being marginalized and more vulnerable than non-migrant population by reason of their lack of familiarity with the customs and means of advancement in their adopted country. Lack of work opportunity may hamper their economic advancement and keep them in poverty.

101. To verify this perception about migrant population and the extent of their deprivation, it is necessary to disaggregate indicator 1.1.1 by migratory status.

102. For this disaggregation to be possible, the survey must have collected information that will allow the determination of whether a household member is foreign-born or native-born, for all household members. The survey question may be household member's country of birth or, more simply, whether the household member was born in a foreign country. In the absence of the information on foreign-born/native born, country of citizenship may be substituted, distinguishing citizens from non-citizens.

103. The poverty indicator 1.1.1, while using a per capita measure, is based on the household as a unit to measure consumption expenditure (or income). To contrast migrant versus non-migrant households, it is recommended that the migratory status of the household head, or the primary breadwinner if no household head is identified, be used to represent the migratory status of the entire household. The

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[17] United Nations Statistics Division, SDG Indicators Metadata Repository for Indicator 1.1.1, https://unstats.un.org/sdgs/metadata/files/Metadata-01-01-01b.docx
[18] Ibid.

assumption is that the household head or primary breadwinner is the dominant mover, if not decision-maker, of the household.

104. It should be made clear here that a migrant household can and often does consist of migrant and non-migrant members. An example is a family consisting of a foreign-born father and foreign-born mother with both foreign-born and native-born children. It could also be a father who is foreign-born and a mother and children who are all native-born, if the father is the household head or primary earner of the family. However, if the mother is the household head or primary earner, the family would be considered a non-migrant household.

D. Indicator 1.1.1 disaggregated by migratory status: Methodology, sources of data and data issues

105. To calculate Indicator 1.1.1 disaggregated by migratory status, the households are separated into migrant households (those whose household head or primary breadwinner is foreign-born) and non-migrant households (those whose household head or primary breadwinner is native-born). The methods described in section B are then applied separately to each of these two groups of households.

106. The formula for migrant population follows:

$$\text{Proportion of migrant population living below poverty line} = \frac{FBp}{FB} \text{ x } 100$$

where
FBp is the estimated number of foreign-born (or migrant) population living in households with per capita consumption (or income) below the international poverty line, and FB is the total number of foreign-born (or migrant) population living in households.

107. The formula for non-migrant population follows:

$$\text{Proportion of nonmigrant population living below poverty line} = \frac{NBp}{NB} \text{ x } 100$$

where
NBp is the estimated number of native-born (or non-migrant) population living in households with per capita consumption (or income) below the international poverty line, and NB is the total number of native-born (or non-migrant) population living in households.

108. To disaggregate the sub-indicator "Proportion of employed population living below the international poverty line" by migrant status, the source data must contain detailed information not just on the employment status of each household member but on their migrant status as well.

109. If these information are available, disaggregation by migrant status of the sub-indicator "Proportion of employed persons living below the international poverty line" can be estimated. The same steps outlined for employed persons above apply but the population is limited to those who are employed. The final formula for migrant working poor population is:

$$\text{Proportion of employed migrant population living below poverty line} = \frac{\text{EFBp}}{\text{EFB}} \text{ x } 100$$

where
EFBp is the estimated number of employed foreign-born persons living in households with per capita consumption (or income) below the international poverty line, and EFB is the total number of employed foreign-born persons living in households.

110. This figure is compared with the working poor in the non-migrant population. Taking only non-migrant households, i.e. native-born population (or non-citizens if citizenship is the only information available), the formula is:

Proportion of employed nonmigrant population living below

$$\text{poverty line} = \frac{\text{ENBp}}{\text{ENB}} \text{ x } 100$$

where
ENBp is the estimated number of employed native-born persons living in households with per capita consumption (or income) below the international poverty line, and ENB is the total number of employed native-born persons living in households

111. Data issues relevant to Indicator 1.1.1 apply as well to the same indicator disaggregated by migratory status. In addition, the number of migrant households (i.e., households headed by a foreign-born person) obtainable from national sample surveys is likely to be very small, resulting in large sample errors.

1.3.1 Proportion of population covered by social protection floors/systems, by sex, distinguishing children, unemployed persons, older persons, persons with disabilities, pregnant women, newborns, work-injury victims and the poor and the vulnerable

[Custodian agency: ILO and World Bank]

A. Definition and concepts

112. Indicator 1.3.1 refers to the proportion of persons in the country effectively covered by a social protection system, including social protection floors. The main components of social protection distinguished in this indicator are: children, unemployed persons, older persons, persons with disabilities, pregnant women, newborns, work injury victims, and the poor and the vulnerable.

113. *Effective coverage* of social protection is measured by the extent to which people are either actively contributing to a social insurance scheme or actually receiving benefits from a social protection programme, whether contributory or non-contributory.

114. *Social protection systems* include contributory and non-contributory schemes for children, pregnant women and newborns, people in active employment, older persons, victims of work injuries and persons with disabilities.

115. *Social protection floors* refer to at least a basic social security guarantee in all the main contingencies along a person's life cycle, as defined in the Social Protection Floors Recommendation (No. 202).[19]

116. When assessing coverage and gaps in coverage, at least three different classes of coverage are distinguished: (a) coverage by contributory social insurance; (b) universal schemes covering all residents (or all residents in a given category); and (c) means-tested schemes potentially covering all who pass the required test of income and/or assets.

B. Methodology, sources of data and data issues

117. The proportion of population covered by social protection systems is calculated separately for each group in order to distinguish effective coverage for children, unemployed persons, older persons, persons with disabilities, women with newborns, workers protected in case of work injury, and the poor and the vulnerable. For each group, coverage is expressed as a percentage share of the corresponding population.

118. The proportion of population covered by social protection systems, expressed as a percentage, is calculated for each group using the following formula:

$$\text{Percentage covered} = \frac{\text{Number in group covered by social protection}}{\text{Total population of group}} \text{ x } 100$$

119. The 7 sub-indicators for the 7 groups are given below, with their corresponding numerator and denominator.

   i.   Proportion of children covered by social protection benefits: Numerator— Number of children (or households) receiving child or family cash benefits; Denominator— Total number of children (or total number of households with children)

   ii. Proportion of women giving birth who are covered by maternity benefits: Numerator— Number of women receiving cash maternity benefits in a given year; Denominator— Total number of women who gave birth in the same year (Note: this denominator may be estimated from age-specific fertility rates or from the number of live births corrected for the share of twin and other multiple births.)

   iii. Proportion of persons with disabilities receiving cash benefits: Numerator— Number of persons receiving disability cash benefits; Denominator— Number of persons with severe disabilities

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[19] International Labour Office, 2012. Social Protection Floors Recommendation (No. 202), http://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO:12100:P12100_INSTRUMENT_ID:3065524:NO

iv. Proportion of unemployed receiving benefits: Numerator— Number of recipients of unemployment cash benefits in a given period; Denominator— Number of unemployed persons during the same period

v. Proportion of employed workers covered in case of employment injury: Numerator— Number of workers protected by work injury insurance; Denominator— Total employment

vi. Proportion of older persons receiving a pension: Numerator— Persons above the statutory retirement age receiving an old-age pension; Denominator— Total number of persons above the statutory retirement age

vii. Proportion of vulnerable persons receiving benefits: Numerator— Number of social assistance recipients; Denominator— Total number of vulnerable persons (Note: Total number of vulnerable persons is calculated as total population minus all persons of working age who are either contributing to a social insurance scheme or receiving contributory benefits, minus all persons above retirement age who are receiving contributory benefits)

120.   If desired, an aggregate indicator may be calculated as the proportion of the total population who are either (a) receiving cash benefits under at least one of the contingencies, whether contributory or non-contributory benefits, or (b) actively contributing to at least one social security scheme.

121. Data for numerators of the sub-indicators come mainly from administrative sources collected by the national ministries of labour, social security, welfare, finance and others, as well as institutions that deal with social protection. Certain data may also be available from selected sample surveys such as the Labour Force Survey (for employment and related information), the Household Income and Expenditure Survey and the LSMS (for example, for pensions and other cash benefit incomes).

122. The denominators for the 7 indicators may be from national population estimates by age and sex. Others are population subgroups derived or estimated from population censuses, sample surveys or vital statistics.

123. Internationally, the collection of these administrative data from national sources is undertaken by the ILO through its Social Security Inquiry. The data collected form the basis of ILO's database and reports on social protection systems.

124. When social protection coverage statistics are derived from administrative records, and especially when they are derived from various sources put together, double-counting of persons receiving more than one social protection benefit can result. Care should be taken to avoid this from happening.

125. Information on social protection beneficiaries are collected by national authorities for the regular functioning of the social protection scheme or programme. Countries are usually able to provide complete information. However, completeness are sometimes a challenge due to fragmentation of sources, or inability to capture information about smaller or less visible schemes, especially

those not anchored in legislation. [20] Private schemes and programmes, such as pensions or maternity benefits provided by private companies, may be completely missed.

126. When using household survey data for social protection coverage, several issues are apparent. First, surveys in many countries are not conducted regularly or frequently enough, making it a limited source for monitoring purposes. Second, social protection recipients are generally not a big proportion of the population, and thus may not be adequately captured or represented by the small size of a survey sample. Finally, the reliability of the information gathered is greatly dependent on the accuracy of respondent report.

127. For the 7 sub-indicators, when the numerator comes from administrative records and the denominator is derived from a census, survey or vital statistics, the resulting proportion is really a ratio rather than a strict proportion. The definitions and boundaries in the sources may vary slightly or not so slightly. Therefore the proportions should be treated as estimates, with unknown degrees of error.

128. The aggregate indicator contains an assortment of beneficiaries and is prone to double-counting. It is difficult to interpret.

C. Rationale for disaggregating Indicator 1.3.1 by migratory status

129. Migrant populations may be disadvantaged when it comes to receiving social protection by virtue of their not having established a long enough residence in the country or state to be eligible for benefits. Some may be unaware of entitlements even if they are eligible to receive benefits. Working migrant population may be excluded from participating in a social security scheme due to the short duration or the non-continuous, casual or informal nature of their jobs.

130. To ascertain the disadvantage migrant population face with respect to social protection, it is essential to compare their coverage against that of non-migrant population.

D. Indicator 1.3.1 by migratory status: Methodology, sources of data and data issues

131. To obtain indicators disaggregated by migratory status, the data source must include information that allows the separation of migrant population and non-migrant population. This is possible if the administrative record (or the sample survey record) on each benefit recipient includes information on the person's country of birth, or at the minimum whether the person is foreign-born or native-born. If only country of citizenship is included, citizen/non-citizen may serve as proxy to migratory status.

132. The sources of data are the same as those mentioned in section B. If the data source does not include information on migratory status, this piece of information may be obtained from a population register. For this to be possible, two

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[20] United Nations Statistics Division, E-Handbook on SDG Indicators, Indicator 1.3.1, https://unstats.un.org/wiki/display/SDGeHandbook/Indicator+1.3.1

requirements must be satisfied: the country must have a well-functioning population register that covers both citizens and foreign citizens (or they could be two separate registers); and each individual in the data source can be linked to his or her record in the population register through a common matching identifier. In this manner, the country of birth of each individual in the data source is obtained.

133. Similarly, the denominator to be used in calculating the requisite proportions for the indicators must be disaggregated by migratory status. Most of the denominators use population census or household survey data, or are based on them. Censuses usually include information on country of birth or country of citizenship; some surveys also include them. Disaggregation of denominators by migratory status is, in most cases, obtainable.

134. If disaggregation is available for both the numerator and denominator, the formula for each specific sub-indicator is then applied to the foreign-born population and the native-born population separately.

135. The data issues mirror those described in section B. Two other issues are relevant with disaggregation. First, the addition of population registers as a supplementary data source could introduce errors in matching; there may also be a significant number of non-matches especially for the foreign-born, whose records in the registers may not be as complete. Second, when data source is a sample survey, the resulting indicator will be subject to sampling error, which could be high especially in the case of the foreign-born.

3.1.1 Maternal mortality ratio (MMR)

[Custodian agency: WHO]

A. MMR: Definition and concepts

136. Maternal mortality ratio is defined as the number of maternal deaths per 100,000 live births during a given time period, such as one year. It depicts the risk of maternal death relative to the number of live births, and essentially captures the risk of death in a single pregnancy or a single live birth.

137. *Maternal death* refers to the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management. It includes direct or indirect obstetric causes, but not accidental or incidental causes of death.

138. Maternal deaths are a specific subset of deaths which occur during pregnancy, childbirth and the puerperium. They can be divided into two groups, namely direct and indirect obstetric deaths. Direct obstetric deaths result from obstetric complications of the pregnant state (pregnancy, labour and the puerperium); from interventions, omissions or direct treatment; or from a chain of events resulting in any of these. Indirect maternal deaths result from previously existing disease or disease that developed during pregnancy and was not directly due to obstetric causes but was aggravated by the physiologic effects of pregnancy. Deaths that do not meet these criteria, such as those which occur as a result of accidents, are not maternal deaths even if they occur during pregnancy, childbirth or the puerperium.

139. A *live birth* is the complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of the pregnancy, which, after such separation, breathes or shows any other evidence of life—such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles—whether or not the umbilical cord has been cut or the placenta is attached. Each product of such a birth is considered a live birth.

B. MMR: Methodology, sources of data and data issues

140. As indicated by the Custodian Agency, MMR is calculated by dividing the recorded (or estimated) maternal deaths in a given time period by the total recorded (or estimated) live births in the same period and multiplying the result by 100,000.

> MMR = (total number of maternal deaths in a given year/ total number of live births in the same year)*100,000

141. Primary sources of data include vital statistics systems, household surveys, population censuses and specialized studies on maternal mortality such as reproductive age mortality studies (RAMOS). Vital statistics compiled from a complete civil registration system (or population registers) with accurate cause of death attributions are the most reliable data source for calculating MMR and monitoring change over time. However, in most developing countries vital statistics are inadequate.

142. Data quality issues arise in both variables used in calculating MMR, namely maternal deaths and live births. In countries where the civil registration system is underdeveloped, the number of live births recorded is incomplete to various degrees. Other data sources such as surveys or censuses may be used to get an estimate of the number of live births but this is also subject to underreporting and, in the case of surveys, to sampling error.

143. With maternal deaths, the data quality issues go deeper. In the registration of deaths, besides its general completeness and coverage, there is the difficult issue of correctly identifying and recording maternal deaths. Identification of maternal death requires information on cause of death, pregnancy status, timing of death (during pregnancy, childbirth or within 42 days of termination of pregnancy). If not accurately reported, misclassification results. This issue occurs not only in vital registration but in censuses and surveys as well. Respondents are not necessarily aware of the cause or circumstances of the deaths they are reporting.

144. Because maternal deaths are relatively rare events, capturing them in household surveys would require a large sample size, if estimates with acceptable reliability (not overly large confidence intervals) are to be obtained. To get around this problem, many specialized surveys (and some population censuses) employ sisterhood and other methods to arrive at an estimate of maternal mortality, although they are also prone to under- or over-reporting, and often require complex adjustments. In addition, estimates obtained by the sisterhood method cover 7-12 years before the survey, rendering them somewhat unsuitable for monitoring progress.

C. Rationale for disaggregating MMR by migratory status

145. Studies in Europe have shown that maternal mortality rates are higher for immigrant women than for native-born women, likely because of the former's lower levels of awareness and use of available services and entitlements such as pre- and post-natal care as well as delivery care.

146. Showing disparities in maternal mortality rates by migratory status is a first step towards achieving improvements in the outcome of maternity care among immigrant women. For this purpose, it is recommended that MMR be disaggregated by migratory status.

D. MMR disaggregated by migratory status: Methodology, sources of data and data issues

147. MMR should be disaggregated where possible to show its level for either of the following dichotomies: (a) foreign-born women versus native-born women, or (b) foreign citizens (i.e., non citizens, including stateless persons) versus citizens. The choice depends on the classification more commonly used (or of higher policy interest) in the country.

148. To enable disaggregation of MMR by migratory status as stated, the data source for maternal deaths will have to contain a question or item identifying the migratory status of each woman whose death is classified as a maternal death. Depending on the country the item to be added (unless already included) may be (a) country of birth or (b) country of citizenship of the woman whose maternal death is being reported. Alternatively the item or question can be simplified to just a dichotomy: (a) native-born or foreign-born, or (b) citizen or non-citizen. The requirement applies whether the data source is a civil registration system, a population census or a population-based survey.

149. The other data element required is the total number of live births by migratory status of the mother. If each live birth has been identified as to its mother's migratory status, live births to immigrant women can be summed up separately from those to non-immigrant women. The calculation of MMR is then done separately for each category of migratory status. For example, if migratory status is determined by whether a person is foreign-born or native-born, the MMR in 2018 for each category would be:

> For foreign-born women:
> MMR = (total number of maternal deaths among foreign-born women in 2018/ total number of live births to foreign-born women in 2018)*100,000

> For native-born women:
> MMR = (total number of maternal deaths among native-born women in 2018/ total number of live births to native-born women in 2018)*100,000

150. All data quality issues pertaining to total maternal deaths apply as well to maternal deaths by migratory status. In addition, the latter is subject to data quality issues related to classifying the deceased women's migratory status. If the death is reported by a relative, migratory status information may be fairly accurate since relatives (especially immediate family members) are generally familiar with the

country of origin (or at least whether or not born abroad) of the deceased. The relative may, however, not be as knowledgeable about the deceased woman's citizenship at the time of death.

151. In contemporary societies, more and more births and deaths are occurring in health institutions (hospitals, clinics and like institutions) or involve some kind of services from the health system. This places the health institutions in a unique position with respect to compiling relevant information regarding each death. As recorder of information on deaths, the health institution should seek the help of the relatives of the deceased when the patient information available to them does not include the items needed to classify migratory status. Otherwise the maternal death record would be unclassifiable by migratory status.

152. It will be noted that neither the place/country of birth nor the citizenship of a decedent has been recommended by the United Nations as a "core topic" among the list of vital statistics topics to be investigated through a civil registration system.[21] The absence of this information is an obstacle to classifying maternal deaths by migratory status.

153. Countries with a universal population register can link the register's individual record with a maternal death record, provided that there is a unique identifier common to both recording systems. The population register, which includes more complete personal information, can supply the data required to identify migratory status.

154. For live births, the denominator for this indicator, data issues related to disaggregation by migratory status replicate those of maternal death in cases where a woman (mother) died a maternal. For the majority of live births, however, the mothers survive. At the time of birth registration, the mother should be able to identify her own migratory status; if the informant is a relative, that person can with reasonable likelihood also provide the correct information.

155. If recording the live birth is done by a person affiliated with the health institution, he or she can ask the mother directly the information related to her migratory status if she is alive and available. A relative may also provide the information. Better results could be achieved if the mother's migratory status is obtained prior to the delivery as part of the patient information record.

156. The United Nations has recommended (as a "core topic") that the place or country of birth of the woman (the mother) be included in a live birth record in a vital statistics system.[22] A country compliant with the United Nations recommendations would therefore have this information in their vital statistics system. It is noted, however, that investigation of the citizenship of the mother has not been recommended by the United Nations.

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[21] United Nations (2014). *Principles and Recommendations for a Vital Statistics System*, Rev. 3.
[22] United Nations (2014). *Principles and Recommendations for a Vital Statistics System, Revision 3.*

157. Inquiry into the migratory status of maternal deaths or the mothers of live births could be a sensitive issue, making it difficult for the responsible data collecting agency to add such an item (if not yet present in the existing data collection system), not to mention the additional cost to introducing an additional item or question. Obtaining the full cooperation of all concerned agencies is crucial to the successful measurement and desired disaggregation of this indicator.

158. In countries where the total number of maternal deaths and live births are not available from the vital statistics system or are grossly deficient, direct or indirect estimates (including modelling) using data from specialized household surveys have been used to calculate the total MMR. With the typically small sample sizes of such surveys, sampling errors can be significant. If the proportion of immigrant women in the population is small, the sampling error for the calculated immigrant MMR could be so high as to be of questionable use. In such cases, caution should be exercised, and disaggregation refrained if any doubts exist as to the acceptability of the results.

3.2.1 Under-five mortality rate (U5MR)

[Custodian agency: UNICEF]

A. U5MR: Definitions and concepts

159. Under-five mortality rate (U5MR) is the probability of a child born in a specified year or period dying before reaching the age of five, if subject to age-specific mortality rates of that period. This probability is expressed as per 1,000 live births.

160. A person aged 5 is defined a person who has completed 5 full years of life; that is, having reached exactly the 5th birthday.

161. A *live birth* is the complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of the pregnancy, which, after such separation, breathes or shows any other evidence of life—such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles—whether or not the umbilical cord has been cut or the placenta is attached. Each product of such a birth is considered a live birth.

162. Under-five mortality rate as defined above is, strictly speaking, not a rate but the probability of dying before reaching age 5. In strict terms, a rate would refer to the number of children who died before reaching age 5 during a specified year or period, divided by the total number of children aged up to 5 years (i.e. the corresponding population who were at risk of death) during the same period of time. The term "under-five mortality rate" is actually a "misnomer" that has been used universally for a long period and has become accepted.

B. U5MR: Methodology, sources of data and data issues

163. Under-five mortality rate is an estimate derived from vital statistics systems, sample registration systems, censuses or surveys, and frequently involves a combination of two or more of these sources.

164.   The number of deaths by sex at ages 0-4 (i.e. before age 5) and the population of the same age and sex (the at-risk population) are used to calculate age and sex-specific death rates, which are then converted to probabilities of dying. The ideal data source of child deaths is a well-functioning and complete civil registration and vital statistics system with accurate and continuous data on deaths by age and sex. The data source for population at each age and sex would be a population-based data source, such as a population register, census or survey.

165.   However, many countries do not have well-functioning vital statistics systems. In such cases, household surveys such as the Multiple Indicator Cluster Survey (MICS) and the Demographic and Health Survey (DHS) and periodic population censuses have become the primary sources of data for U5MR.

166.   A direct method can be used to calculate U5MR when a survey (for example DHS and MICS) collects complete birth histories (including dates of birth and death of all children ever born) from each woman interviewed. An indirect method can be used for other surveys and population censuses ask a limited number to questions to each woman of reproductive age, namely children ever born and children surviving. From this information, the Brass method and model life tables are used to calculate U5MR. Details of the method are available in Manual X[23] and in *Tools for Demographic Estimation*.[24]

167.   Data quality from censuses and surveys suffers when interviewed women omit births and deaths, include stillbirths with live births or have a survivor selection bias. Direct estimates from complete birth histories may also suffer from mothers misreporting their children's birth dates, current age or age at death. Finally, all sample survey data are subject to sampling and non-sampling errors.

C. U5MR: Rationale for disaggregating MMR by migratory status

168.   In countries where health care costs are high, economic circumstances may deter migrant parents from seeking medical help for their sick children, or they may put off doing so in the hope that their child's condition will improve, potentially resulting in the child's death.

169.   So that this disparity can be shown and desired policy interventions made, it is important to disaggregate U5MR by the migratory status of the parents. Migratory status refers to either of the following dichotomies: (a) foreign-born mothers/fathers versus native-born mothers/fathers, or (b) foreign citizen mothers/fathers (i.e., non citizens, including stateless persons) versus citizen mothers/fathers. The choice between the two dichotomies should depend on the classification that is of higher policy interest, as well as the availability of data.

170.   Where data exists, additional disaggregation can be extended to show disparities between mortality of children of first generation migrants and that of children of second generation migrants. The hypothesis is that second generation

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[23] United Nations (1983). *Manual X: Indirect Techniques for Demographic Estimation*.
[24] Hill, K., 'Child Mortality', Chapter 15 in *Tools for Demographic Estimation*, edited by T. A. Moultrie, R. E. Dorrington, A. G. Hill, K. Hill, I. M. Timæus and B. Zaba, International Union for the Scientific Study of Population, Paris, 2013, <http://demographicestimation.iussp.org>.

migrants' children will have mortality rates approaching those of the children of the native-born population.

D. U5MR disaggregated by migratory status: Methodology, sources of data and data issues

171. If the data source (well-functioning civil registration and vital statistics system) includes an item identifying the migratory status of the dead child's mother (or father), it may be possible to disaggregate U5MR separately for migrant parent(s). However, this is not likely. Even if the death registration records information on the father or mother of the child, such information may be limited to names and place of residence. The migratory status of the parent is not an expected item in a death record.

172. The possibility of disaggregation by migratory status exists, however, in countries with complete population registers. Provided there is a unique personal identifier common to both registration systems, the civil registration system can be linked to the population register. The latter would typically contain detailed information on the parents, often including their migratory status. The same population register can also provide the corresponding data on population size by age and sex to serve as denominator for mortality rates to be calculated for children below 5 years old. In this way, U5MRs can be calculated for either of the two dichotomies of migratory status given above.

173. The disaggregation can be further extended to differentiate U5MRs of children of first and second generation immigrant population. This can be done by linking each parent's record to the records of his or her parents (the child's grandparents), and looking for country of birth (or country of citizenship) information.

174. This option is, however, limited to countries with well-functioning population registers and civil registration systems. It would require micro-level record linking and the commitment of the administrative offices concerned to perform this statistical undertaking.

3.3.1 Number of new HIV infections per 1000 uninfected population, by sex, age and key populations

[Custodian agency: UNAIDS]

175. Migratory status is important to look at when assessing population groups that may be at higher risk of transmission. For instance, people that are migrating because of conflict or disruption or because they are fleeing abusive conditions might very well be at higher risk of rape or be in situations where they cannot practice safe sex depending upon what the situation is in the new country they have settled in.

176. Migration can place people in situations of heightened vulnerability to HIV, and has been identified in certain regions as an independent risk factor for HIV. Migrant populations have a greater risk for poor health in general and HIV infection in particular. This is due to the impact of sociocultural patterns of the migrant population situation on health, their economic transitions, reduced availability and

accessibility of health services, and the difficulty of the host country health care systems to cope with the traditions and practices of immigrant populations.

3.4.1 Mortality rate attributed to cardiovascular disease, cancer, diabetes or chronic respiratory diseases (MR-NCD)

[Custodian agency: WHO]

A. MR-NCD: Definitions and concepts

177. Mortality rate attributed to cardiovascular disease, cancer, diabetes or chronic respiratory diseases (MR-NCD) is defined as the percentage of 30-year-old people who would die before their 70th birthday from cardiovascular disease, cancer, diabetes or chronic respiratory diseases, assuming that they would experience the current mortality rates for these diseases at every age and would not die from any other cause of death (such as communicable diseases and external causes like accidents and injuries). In other words, it is the probability of dying between the ages of 30 and 70 years of age from cardiovascular disease, cancer, diabetes or chronic respiratory diseases.

178. This indicator is calculated based on life table methods (see next section).

179. The *probability of dying* between two ages is the likelihood that an individual, having lived to the lower age, would die before reaching the higher age, if he or she were to go through life in those intervening ages experiencing the current age-specific mortality rates (usually shown by a life table).

180. *Cardiovascular disease, cancer, diabetes or chronic respiratory diseases* refer to the underlying causes of death identified as I00-I99, C00-C97, E10-E14 and J30-J98 in the 10th Revision of the International Classification of Diseases and Related Health Problems (ICD-10).

181. A *life table* is a table showing mortality rates at each age that a hypothetical group of infants will experience during their lifetime. These mortality rates are based on age-specific mortality rates, or an approximation thereof, effective in the population at the time the group of infants were born.

B. MR-NCD: Methodology, sources of data and data issues

182. For SDG monitoring at the international level, the indicator MR-NCD is calculated or estimated by WHO. The WHO estimation entails four steps:

viii.   Compiling population size by sex and five-year age group.

ix.   Compiling or estimating deaths by cause for each sex and five-year age group, with particular attention to deaths from the following disease categories: cardiovascular disease, cancer, diabetes and or chronic respiratory diseases.

x.   Calculating death rates attributed to the four non-communicable diseases combined, for each sex and five-year age group, based on data series (i) and (ii) above and constructing a life table therefrom.

xi.   Calculating the probability of dying from age 30 to age 70 using the life table method. (see Siegel, …)[25]

183.   Most countries have annual data on population by sex and age group, derived from their national census, surveys and/or registration and adjusted for under- or over-coverage. When population data are not readily available, WHO uses estimates of population by sex and five-year age group provided periodically by the United Nations Population Division.[26]

184.   Reliable national data on deaths by cause are harder to obtain. WHO's sources of data on deaths by cause include:

i.   Statistics on deaths by cause submitted by countries with high-quality civil registration systems to the WHO Mortality Database. The country or WHO makes adjustments where necessary, such as for under-reporting of deaths. The preferred source of data is death registration systems with complete coverage and medical certification of cause of death.

ii.   For countries without high quality statistics on deaths by cause, estimates are derived from other sources of data, such as household surveys with verbal autopsy, sample or sentinel registration systems, special studies and surveillance systems. In most of these cases, WHO utilizes a combination of the data sources using a modelling framework. Complete methodology may be found in "WHO methods and data sources for global causes of death, 2000-2015".[27]

185.   Deaths-by-cause estimates have large uncertainty ranges for some causes and some countries. Data gaps and limitations in high-mortality countries reinforce the need for caution when interpreting cause of death assessments, as well as the need for increased investment in population health measurement systems.

186.   The use of verbal autopsy methods in sample registration systems, demographic surveillance systems and household surveys provides some

[25] Siegel, Jacob S. and David S. Swanson, 2004. *The Methods and Materials of Demography* (Elsevier Academic Press).
[26] United Nations, *World Population Prospects*.
[27] http://www.who.int/healthinfo/global_burden_disease/GlobalCOD_method_ 2000_2015.pdf

information on causes of death in countries without well-established death registration systems, but there remain considerable challenges in the validation and interpretation of such data, and in the assessment of uncertainty associated with diagnoses of underlying cause of death. In addition, sampling error contributes a considerable degree of uncertainty as such data sources often involve small samples.

C. MR-NCD: Rationale for disaggregating by migratory status

187. Non-communicable diseases (NCDs) are the most common cause of death in developed countries and are rapidly increasing in developing countries. Disadvantaged populations often have lower access to regular or standard health services for the prevention and treatment of non-communicable diseases. Symptoms of non-communicable diseases are often not as obvious as for communicable diseases. Without pre-symptomatic regular health examinations, certain non-communicable diseases like cardiovascular disease and cancer may not be discovered until the disease is at a late stage and the prognosis poor. This results in slimmer chances of survival, or a higher mortality rate.

188. Migrant populations may have a higher mortality rate attributable to cardiovascular disease, cancer, diabetes and chronic respiratory diseases. To ascertain this supposition, it is necessary to compare NCD mortality rates of migrant population against those of non-migrant population.

D. MR-NCD disaggregated by migratory status: Methodology, sources of data and data issues

189. MR-NCD should be disaggregated where possible to show its level for either of the following dichotomies: (a) foreign-born women versus native-born women, or (b) foreign citizens (i.e., non citizens, including stateless persons) versus citizens. The choice depends on the classification more commonly used (or of higher policy interest) in the country.

190. To enable disaggregation of MR-NCD by migratory status, the data source for deaths by cause will have to contain a question or item identifying the migratory status of each person whose death is being reported. Depending on the country the item to be added (unless already included) may be (a) country of birth or (b) country of citizenship of the person whose death is being reported. Alternatively the item or question can be simplified to just a dichotomy: (a) native-born or foreign-born, or (b) citizen or non-citizen. The requirement applies whether the data source is a civil registration system, a population census or a population-based survey.

191. It is noted that neither the country of birth nor the country of citizenship of a decedent has been recommended by the United Nations as a "core topic" to be included in a death registration system. The absence of this information is an obstacle to classifying deaths by migratory status.

192. Countries with a complete population register can, however, link the register's individual record with a death record, provided that there is a unique identifier common to both recording systems. The population register typically contains complete personal information, including the data needed to identify migratory status.

193. This option of record-matching at the micro-level has to be accompanied by the availability of high-quality deaths-by-cause data for disaggregation by migratory status to be possible. Countries that have the data sources required should take the opportunity to disaggregate MR-NCD by migratory status.

3.8.1 Coverage of essential health services (defined as the average coverage of essential services based on tracer interventions that include reproductive, maternal, newborn and child health, infectious diseases, non-communicable diseases and service capacity and access, among the general and the most disadvantaged population)

[Custodian agency: WHO]

194. This indicator is represented by an index that measures the extent of coverage of essential health services in a population. It is operationalized by combining into one index 16 health service coverage indicators in four broad areas, namely reproductive, maternal, newborn and child health; infectious diseases; non-communicable diseases; and service capacity and access, among the general and most disadvantaged population.

195. Currently, the 16 health coverage indicators proposed by WHO for monitoring progress on essential health service coverage are drawn respectively from each of the following 16 tracer areas:[28]

For Reproductive, maternal, newborn and child health – (1) Family planning (2) Pregnancy care (3) Full child immunization (4) Child treatment;

For Infectious diseases – (5) Tuberculosis treatment (6) HIV treatment (7) Malaria prevention (8) Improved water and sanitation;

For Non-communicable diseases – (9) Treatment of cardiovascular disease (10) Management of diabetes (11) Cervical cancer screening (12) Tobacco control;

For Service capacity and access – (13) Hospital access (14) Health worker density (15) Access to essential medicines (16) Health security.

196. Values for the 16 indicators that comprise the index are derived from various national data sources. To avoid additional reporting burden, most of the indicators that form the composite index are already widely collected by countries. For example, many population-based health surveys provide data on coverage of family planning and coverage of improved water and sanitation, while administrative sources provide data on child immunization coverage, HIV treatment coverage, tuberculosis treatment coverage and health worker density. However, WHO recognizes that at present some data gaps (for example, for cervical cancer screening and access to essential medicines) exist.

197. Among the most disadvantaged groups are the migrant population, a subgroup that may be subject to discriminatory treatment more than other groups. While it

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[28] Source:

would be ideal to have a health service coverage index separately for migrant population and non-migrant population, disaggregating by migratory status will be very difficult if not impossible at this time. Even for the entire population, data gaps are acknowledged to exist. Furthermore, the four indicators under the broad category "service capacity and access" are macro-level measures expressed in units like per capita, proportion, or even as an index, and often measurable only for the general population or geographical subdivisions thereof.

3.8.2 Proportion of population with large household expenditures on health as a share of total household expenditure or income

[Custodian agency: WHO]

A. Definition and concepts

198.   The indicator Proportion of population with large household expenditures on health as a share of total household expenditure or income is self-defined. It is the second of two indicators under target 3.8, Achieve universal health coverage, including financial risk protection, access to quality essential health care services and access to safe, effective, quality and affordable essential medicines and vaccines for all. The first indicator under this target, 3.8.1, is described in the previous paragraphs. The second indicator (this, 3.8.2) focuses on health expenditures to identify financial hardship caused by direct health care payments.

199.   Two thresholds are used to define "large household expenditures on health": (a) greater than 10% of total household expenditure or income, and (b) greater than 25% of total household expenditure or income.

200.   The two concepts related to this indicator are "household expenditures on health" (the numerator) and "total household expenditure or total household income" (the denominator).

201.   *Household expenditures on health* is defined as any expenditure incurred at the time of service use to get any type of care (promotive, preventive, curative, rehabilitative, palliative or long-term care) including all medicines, vaccines and other pharmaceutical preparations as well as all health products, from any type of provider and for all members of the household. These health expenditures are characterized by a direct payment that are financed by a household's income (including remittances), savings or loans but do not include any third-party payer reimbursement. Direct health care payments are labelled Out-Of-Pocket (OOP) payments in the classification of health care financing schemes (HF) of the international Classification for Health Accounts (ICHA).

202.   The components of a household's health care consumption expenditure so defined should be consistent with division 06 of the UN Classification of Individual Consumption According to Purpose (COICOP) and include expenditures on medicines and medical products (06.1), outpatient care services (06.2) and inpatient care services (06.3).

203.   *Expenditure on household consumption* is a monetary welfare measure and is the preferred denominator to use for indicator 3.8.2 because, compared to household income, it is less variable over time and easier to measure. *Expenditure on*

household consumption is a function of permanent income, which is a measure of a household's long-term economic resources that determine living standards. Consumption is generally defined as the sum of the monetary values of all items (goods and services) consumed by the household on domestic account during the reference period. It includes the imputed values of goods and services that are not purchased but procured otherwise for consumption.

204. *Total household income*, also a monetary welfare measure, may be used as denominator for the indicator if data on household consumption is not available. The most relevant measure of household income is disposable income as it is close to the maximum available to the household for consumption expenditure during the accounting period. Disposable income is defined as total income less direct taxes (net of refunds), compulsory fees and fines. Total household income is generally composed of income from employment, property income, income from household production of services for own consumption, transfers received in cash and goods, transfers received as services.

B. Methodology, sources of data and data issues

205. The proportion of population with large household expenditures on health as a share of total household expenditure or income is calculated using the formula

$$\frac{\sum_i w_i 1\left(\frac{health\ expenditure\ of\ household\ i}{total\ expenditure\ of\ household\ i} > \tau\right)}{\sum_i w_i}$$

where *i* denotes a household, 1( ) is the indicator function that takes on the value 1 if the bracketed expression is true, and 0 otherwise, m_i corresponds to household *i*'s sample weight multiplied by its household size, τ is a threshold identifying large household expenditure on health as a share of total household consumption or income. (The two recommended threshhold values are 10% and 25%.)

206. Compared to income, consumption is less variable over time and easier to measure. It is therefore recommended that whenever there is information on both household consumption and income the former is used. Only when the total expenditure of the household is not known,should the denominator in the indicator function may be replaced by household income.

207. The most important criterion for selecting a data source to measure this indicator is the availability of both household consumption expenditure on health and total household consumption expenditures. The recommended data sources for the monitoring of this indicator are, therefore, household surveys that can provide both pieces of information. Many such surveys are routinely conducted by national statistical offices (NSOs). Household budget surveys (HBS) and household income and expenditure surveys (HIES) typically collect these information in detail, as they are primarily conducted to provide inputs to the calculation of consumer price indices or the compilation of national accounts.

208. Another potential source of information is socio-economic or living standards surveys; however, it should be noted that some of these surveys may not collect information on total household consumption expenditures – for example, when a country measures poverty using income as the welfare measure.

209. Household budget surveys and household income and expenditure surveys as a source for indicator 3.8.2 are subject to a number of limitations. For monitoring purposes, such surveys suffer from the general challenge of timeliness, frequency, data quality and comparability across surveys, as well as sampling and non-sampling errors.

210. Apart from the general challenges mentioned above, specific challenges arise in identifying excessive health expenditures from surveys. Most household surveys fail to identify the source of funding used by a household reporting health expenditure. In countries where there is no retrospective reimbursement of household spending on health this is not a problem. But in those countries where there is retrospective reimbursement--for example, via a contributory health insurance scheme--the amount reported by a household on health expenditures might be totally or partially reimbursed at some later point, perhaps outside the recall period of the household survey.

211. The numerator for this indicator is based on measures of ex-post spending on health care. It is possible that no expenditure or a low level of spending is due to people not being able to spend anything (or anything much) on essential health services, and represents low levels of health coverage, and not the absence of financial hardship.

212. This indicator relies on two single cut-off points to identify what constitutes 'large health expenditure as a share of total household expenditure or income'. People just below or above such thresholds are not taken into account, which is always the problem with measures based on cut-offs.

C. Rationale for disaggregating by migratory status

213. Direct health care payments are clearly against the spirit of target 3.8, which calls for granting access based on a person's health needs, and not on a household's capacity to pull together all its financial resources to meet the health needs of its members. Some direct payments might be needed but indicator 3.8.2 is underpinned by the conviction that no one, at whatever income level, should have to choose between spending on health and spending on other basic goods and services such as education, tuition, food necessities, housing and utilities.

214. The above rationale can be extended to apply to all persons, regardless of their migratory status. Migrant population, by not having been born in their country of residence, are disadvantaged at the outset. They tend to have lower awareness of and access to the financial aspects of health care, even if they are entitled. Consequently, they may try to seek medical help only when grave health problems arise, as non-participant of any health care program, resulting in high direct health care costs. New migrants who have difficulty with their adopted country's language and undocumented migrant population are particularly vulnerable.

215. Disaggregating indicator 3.8.2 by migratory status of a household could show the extent to which the migrant population needs to devote a substantial share of their total household expenditure or income to health care. It would also indicate the extent to which health systems lead to financial hardship for migrant households.

D. Indicator 3.8.2 disaggregated by migratory status: Methodology, sources of data and data issues

216. The method will be to calculate the indicator separately for the population of migrant households on the one hand, and for the population of non-migrant households on the other. Migrant population would be defined as either foreign-born population or foreign citizens.

217. The sources of data would be the same as in Section B above. If the survey collects information on migratory status of the head of the household, it is possible to calculate the indicator separately by migratory status. However, unless there is an oversampling of migrant households, the sample size for the latter would usually be too small to obtain reliable statistics.

218. In calculating indicator 3.8.2 by migratory status, a household whose head is a migrant is assumed to be a household consisting of only migrants. Migrant populations tend to be younger (working age) and therefore generally healthier and less likely to seek health care, lowering their health expenditures. On the other hand, they may not be knowledgeable about available health benefits such as health insurance schemes and thus unable to take advantage of these benefits, which could result in disproportionate expenses on health care should the need arise.

219. Disaggregating this indicator by migratory status is not a very promising application.

3.c.1 Health worker density and distribution

[Custodian agency: WHO]

220. The indicator Health Worker Density (HWD) includes density of four classes of health workers: (a) physicians; (b) nursing and midwifery personnel; (c) dentistry personnel; and (d) pharmaceutical personnel.

221. As an indicator in Target 3.c, HWD serves to track "the recruitment, development, training and retention of the health workforce in developing countries, especially in least developed countries and small island developing States".

222. The active recruitment and hiring by developed countries of physicians, nurses and other health workers from developing countries is well-known. It has been the subject of many studies and reports on "brain drain" experienced by developing countries.

223. When a health worker trained in a developing country is recruited to work in a developed country, there is a loss to the developing country of a trained person and a corresponding gain to the developed country. This represents the inability of the developing country to retain their health workers to serve in their own country. On the other hand, it could represent a way to ease employment pressure in developing countries that lack employment opportunities for health workers and/or have an oversupply of trained health workers.

224. This indicator as defined does not appear to be relevant for international migration issues, since it is a macro-level measure concerning the density of health workers. A low density of health workers is the result of a combination of many factors, including inadequate recruitment, deficient training and poor retention of qualified workers.

225. If there is a distinct geographic area of immigrant-heavy populations in a country, it may be possible to calculate this indicator separately for immigrant-heavy areas as opposed to non-immigrant areas. However, immigrant-heavy populations tend to be small pockets in an urban district, and immigrants have access to health services available in the wider geographic area.

4.1.1 Proportion of children and young people (a) in grades 2/3; (b) at the end of primary education; and (c) at the end of lower secondary education achieving at least a minimum proficiency level in (i) reading and (ii) mathematics, by sex

[Custodian agency: UNESCO-UIS]

A. Definition and concepts

226. This indicator consists of three component indicators, each with the two subject areas reading and mathematics. The three indicators are:

i. The proportion of children in grades 2/3 achieving at least a minimum proficiency level in (i) reading and (ii) mathematics, by sex

ii. The proportion of children and young people at the end of primary education achieving at least a minimum proficiency level in (i) reading and (ii) mathematics, by sex

iii. The proportion of children and young people at the end of lower secondary education achieving at least a minimum proficiency level in (i) reading and (ii) mathematics, by sex

227. Minimum proficiency level is the benchmark of basic knowledge in a subject area (reading or mathematics) measured through learning assessments. At present, such benchmark or standard is set up by countries for each relevant stage of education according to globally-defined minimum competencies.

B. Methodology, sources of data and data issues

228. The formula for this set of indicators is, for each sex:

$$PL_{n,s} = \frac{P_{n,s}}{P_n}$$

where

$PL_{n,s}$ is the percentage of children and young people at stage of education n who have achieved a pre-defined level of proficiency that is equal or greater than a pre-defined minimum standard in, subject area s;

Pn,s is the population of children and young people at stage of education n who have achieved a national or cross-national minimum proficiency level in the subject area s;

Pn is the total population of children and young people at stage of education n; and

s denotes the subject area (either reading or mathematics)

229. The main data sources for this set of indicators are national or cross-national learning assessments using globally defined minimum competencies, which is currently in development.

230. Some cross-national learning assessments currently in use include Programme d'analyse des systèmes éducatifs de la CONFEMEN (PASEC), Progress in International Reading Literacy Study (PIRLS), Programme for International Student Assessment (PISA), Southern and Eastern Africa Consortium for Monitoring Educational Quality (SACMEQ), Tercer Estudio Regional Comparativo y Explicativo (TERCE) and Trends in International Mathematics and Science Study (TIMSS).[29]

231. Although data from many national assessments are available now, each country sets its own standards, with the result that performance levels may not be comparable. Due to differences in performance levels used across national as well as cross-national assessments, the performance levels will have to be mapped to globally defined proficiency levels. This mapping will allow for a better comparison of performance across countries.

232. A disadvantage of using learning assessments is that they are typically administered within school systems, with the result that calculated indicators cover only children and young adults in school. Assessing the competencies of out-of-school children and young adults would require household-based surveys, which may be very costly and difficult to administer. UNESCO-UIS is therefore taking a step-wise approach, with initial focus on assessing competencies of in-school children and young adults, to be followed by developing implementation plans to assess the competencies of out-of-school children and youths.

C. Rationale for disaggregating by migratory status

233. Target 4.1 aims to ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes. Disaggregation of indicator 4.1.1 by migrant status is suggested by the custodian agency.

234. Foreign-born children and youths, if they attend formal education in the receiving country, are often disadvantaged in learning. They may not have sufficient knowledge and comprehension of the receiving country's language. Studies have

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[29] Detailed description of these learning assessments can be found in UNESCO-UIS (2018). *Handbook on Measuring Equity in Education*, Annex A. Major international learning assessments. (http://on.unesco.org/equityguide2018)

found that children whose household language is different from their language of instruction learn less in a range of countries in Africa, Asia and Latin America.[30]

235. The disadvantage of language for foreign-born children and youths could be exacerbated by still other disadvantages such as poverty, mother's lack of education and region of the country.[31]

D. Indicator 4.1.1 disaggregated by migratory status: Methodology, sources of data and data issues

236. Applying the formula given in Section B above, the indicator should be calculated with further disaggregation by migratory status (foreign-born vs. native-born; subject to availability of quality data and policy interest, by country of birth).

237. Calculating this indicator by migratory status requires information on the migratory status of each person assessed. When national or cross-national learning assessments are conducted within the school system, demographic information including country of birth (or at least whether native- or foreign-born) should be collected for each person at the time their learning level is being assessed. If such is the case, disaggregation by migratory status is straightforward.

238. Otherwise, each student's learning assessment can be linked to his or her information record in the school system, if there is a common identifier between the learning assessment and the student's school record (for example full name or unique student identification number). A student record may or may not include the student's country of birth. If this piece of information is not available from the school records, another possible source of information on the student could be population register, as well as the register of foreign citizens if the country maintains one. Again, a requirement for successful linking is that the same unique personal identifiers are used in both the register and the school records.

239. Learning assessments conducted outside the school system, such as through household or other sample surveys, will require information on country of birth (or, at the minimum, whether native- or foreign-born) to be collected at the time of the assessment if the indicator is to be disaggregated by migratory status.

240. When deciding on the level of disaggregation, it is important to look at the total size of migrant population in the country. If the number is small, statistically it may be possible to present only a dichotomy: foreign-born vs. native-born. If there are sufficiently large numbers of migrant populations from one or more foreign countries, separate indicators may be calculated for those countries, if there is policy interest.

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[30] UNESCO-UIS (2018). *Handbook on Measuring Equity in Education*, pp. 97-98.
[31] Ibid., p. 100.

4.3.1 Participation rate of youth and adults in formal and non-formal education and training in the previous 12 months, by sex

[Custodian agency: UNESCO-UIS]

A. Definition and concepts

241. This indicator consists of two or more component indicators representing various age groups. Two main age groups are of specific interest:

    i.   The participation rate of youths (persons aged 15-24) in formal and non-formal education and training in the last 12 months, by sex

    ii. The participation rate of adults (persons aged 25-64) in formal and non-formal education and training in the last 12 months, by sex

242. *Formal education and training* is defined as education provided by the system of schools, colleges, universities and other formal educational institutions that normally constitutes a continuous 'ladder' of full-time education for children and young people, generally beginning at the age of 5 to 7 and continuing to up to 20 or 25 years old. In some countries, the upper parts of this 'ladder' are organized programmes of joint part-time employment and part-time participation in the regular school and university system.

243. *Non-formal education and training* is defined as any organized and sustained learning activities that do not correspond exactly to the above definition of formal education. Non-formal education may therefore take place both within and outside educational institutions and cater to people of all ages. Depending on national contexts, it may cover educational programmes to impart adult literacy, life-skills, work-skills, and general culture.

B. Methodology, sources of data and data issues[32]

244. Indicator 4.3.1 is calculated by dividing the total number of people in a given age group who participated in formal or non-formal education or training in the last 12 months, by the population of the same age group in the same period, and multiplying the result by 100 to get a percentage. The indicator is calculated separately for each sex. Thus, each sex, the following formula applies:

$$PR_a = \frac{P_a}{POP_a} \times 100$$

where

PR_a is the participation rate in formal and non-formal education and training of
    the population in age group a
P_a is the number of people in age group *a* who participated in formal or non-
    formal education or training

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[32] Adapted from United Nations (2018). *E-Handbook on the Sustainable Development Goals Indicators.* Indicator 4.3.1.

P_a is the population in age group a

245. At present, participation rates should be obtained for at least two major age groups: youths (persons aged 15-24) and adults (persons aged 25-64). The calculation of participation rates for other age groups can be done in the same manner and will depend on policy interest and the availability and quality of data.

246. Although the preferred reference period for this indicator is education and training undertaken in a 12-month period, many surveys are available which capture data for a shorter reference period. Such sources, suitably footnoted, may be used where the preferred indicator is not available.

247. Formal and non-formal education and training are offered in a variety of settings: schools and universities, workplace environments and other settings, and can have a wide variety of durations. Administrative data often capture only the provision of education and training in formal settings like schools and universities.

248. For participation in education and training in schools and universities, administrative sources can provide the numerator in the above formula. Ministries of Education or National Statistical Offices are the most common data sources. The denominator can be obtained from national population estimates by age and sex, typically based on censuses and surveys, and produced for each year.

249. Data for other types of education and training such as those provided in workplace and other settings often have to rely on household or other sample surveys. Some such surveys have been developed by Eurostat and OECD.

250. Eurostat's Adult Education Survey (AES) and OECD's Survey of Adult Skills in its Programme for the International Assessment of Adult Competencies (PIAAC), both of which are household surveys, are good sources of data for this indicator. Eurostat's Continuing Vocational Training Survey (CVTS) collects data on participation in work-related education and training from enterprises.

251. Labour Force Surveys (LFS) can also serve as a source of data for participation in education and training though often the reference period in which participation should be reported is four weeks rather than 12 months.[33]

252. A problem with the numerator is that it encompasses all formal and non-formal types of training and education. In other words, it is a mixed bag of education and training that may have very different levels of intensity, quality, profundity, duration and objectives. The very nature of its assortment renders the comparability of this indicator across countries or across population groups difficult.

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[33] More work is being undertaken to review existing national household surveys to see if they can be suitable sources for this indicator. A possible module for inclusion in national sample surveys is being developed by the Working Group on Indicator Development of UNESCO's Technical Cooperation Group on SDG-Education 2030 Indicators.

C. Rationale for disaggregating indicator 4.3.1 by migratory status

253. Migrant populations may be economically and socially disadvantaged because of their lack of familiarity with services and customs in their host country. Where education is concerned, it may take time before they learn about or become eligible for certain education and training opportunities. Furthermore, lack of proficiency in the language of the host country could also be a hindrance to migrant population's attaining a certain education level,[34] often a precondition to affordable and quality technical, vocational or tertiary education. In other cases, the urgency to earn a living may delay or preclude migrant population's pursuit of either formal or non-formal education.

254. To ascertain whether migrant populations are disadvantaged when it comes to access to affordable and quality technical, vocational and tertiary education, it is necessary to calculate the indicator separately for migrant population and non-migrant population. A dichotomy comparing foreign-born and native-born to represent migratory status is the first step. If there is policy interest on a specific foreign country of birth, this may be produced if quality data for both numerator and denominator are available by country of birth.

255. In the absence of migratory status data, country of citizenship may be used as a proxy variable. Although citizenship (citizen versus non-citizen) cannot be equated to migratory status, there is a strong correlation between the two variables. This use of a proxy variable in place of actual migratory status should be kept in mind when interpreting the results.

D. Indicator 4.3.1 disaggregated by migratory status: Methodology, sources of data and data issues

256. The formula would be as given in section B. The indicator is calculated for each of the two migratory statuses (foreign-born, native-born) for age groups 15-24 and 25-64, and separately for each sex.

257. In addition to data requirements mentioned in section B, data by country of birth have to be available in all administrative sources such as schools and universities. This means that information on the country of birth (or at the minimum whether native- or foreign-born) must have been collected for each participant in formal and non-formal education and training, in addition to age and sex. To calculate the participation rate, population data by age group and sex typically produced by the National Statistics Office should also be disaggregated by country of birth (or at the minimum by whether native- or foreign-born).

258. If data for this indicator is to be provided by a household or other survey, information on the country of birth would also have to be obtained for each respondent or household member, whether or not they participated in any formal or non-formal education or training.

259. The data issues parallel those mentioned in section B.

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[34] UNESCO-UIS (2018). *Handbook on Measuring Equity in Education*, pp. 97-98.

4.6.1 Proportion of population in a given age group achieving at least a fixed level of proficiency in functional (a) literacy and (b) numeracy skills, by sex

[Custodian agency: UNESCO-UIS]

A. Definitions and concepts

260. This indicator is defined as the proportion of youth (aged 15-24 years) and of adults (aged 15 years and above) who have achieved or exceeded a given level of proficiency in (a) literacy and (b) numeracy. The *fixed or minimum level of proficiency* is measured relative to literacy and numeracy scales defined according to national, regional and international learning assessments.

261. The concepts of *functional literacy* and *numeracy* are based on the UNESCO definition which covers a continuum of proficiency levels rather than a dichotomy. A person is *functionally literate* who can engage in all those activities in which literacy is required for effective functioning of their group and community and also for enabling them to continue to use reading, writing and calculation for their own and the community's development. The assessment of functional literacy and numeracy should cover various proficiency levels ranging from a low level to the mastery of the requisite domain.

262. This *fixed or minimum level of proficiency* is the benchmark of basic knowledge in a domain (literacy or numeracy) measured through learning assessments. Currently, there are no common standards to determine the fixed level of proficiency that have been validated by the international community or countries.

B. Methodology, sources of data and data issues

263. The indicator is calculated for youths (persons aged 15-24) and adults (persons aged 15 and over) separately, disaggregated by sex, for a given reference year, as follows:

$$PMINa, s = \frac{Pa,s}{POPa,s}$$

where

PMINa,s is the proportion of persons in age group a who have achieved or exceeded the minimum level of proficiency in domain s (s being either literacy or numeracy),

Pa,s is the number of number of persons in age group a who have achieved or exceeded the minimum level of proficiency in domain s (s being either literacy or numeracy), and

POPa,s is the total number of persons in age group a who participated in the proficiency assessment in domain s (s being either literacy or numeracy).

264. The measurement of youth and adult proficiencies in literacy and numeracy requires some form of direct assessment. At present, this indicator is collected via

skills assessment surveys of the youth and adult populations. OECD's Survey of Adult Skills in its Programme for the International Assessment of Adult Competencies (PIAAC), the World Bank's Skills Towards Employment and Productivity (STEP) measurement programme, and the UIS's Literacy Assessment and Monitoring Programme (LAMP), all of which are household surveys, are good sources of data for this indicator. Only PIAAC measures both literacy and numeracy skills. STEP and the newly developed SLS only measure literacy. Both PIAAC and STEP can be put on a common scale as they are linked psychometrically by design.

265. A new Short Literacy Survey (SLS) based on LAMP has recently been developed to offer a less costly and technically demanding option for countries. National surveys of adult literacy and numeracy skills may be additional sources of data for this indicator. Independent national surveys measuring functional literacy and numeracy is, however, open to the problem of international comparability. Where possible, the results would need to be mapped against regional and international standards.

266. Using household surveys to measure learning can be costly and difficult to administer. It may underestimate learning in areas that are critical to daily life but are harder to assess in standardised approaches. The result may be inaccurate representations of what youth and adults know and can do, especially in relation to applying skills that may vary across contexts.

C. **Rationale for disaggregating by migratory status**

267. Compared to non-migrant population, migrant population could be at a disadvantage in educational and learning opportunities and performance from the moment they enter the host country. For many migrants, limited economic resources and the pressure to earn a living the moment they set foot in their host country may cause them and their dependents to forego or postpone any education. Migrant population's lack of familiarity with the host country's language and customs could also lead to their low participation and poor performance in education and learning compared to non-migrant population. These conditions naturally affect the level of functional literacy and numeracy migrant populations eventually attain.

268. To ascertain and quantify this difference, the indicator "proportion of youth (aged 15-24 years) and of adults (aged 15 years and above) who have achieved or exceeded a given level of proficiency in (a) literacy and (b) numeracy" will have to be calculated separately for the foreign-born population and the native-born population.

D. **Indicator 4.6.1 disaggregated by migratory status: Methodology, sources of data and data issues**

269. The formula given in section B for PMINa,s is used to calculate the indicator for each migratory status (native-born persons; foreign-born persons).

270. Potential data sources are skills assessment surveys of adults and youths, collected through programmes supported by OECD, the World Bank or UNESCO-UIS (see section B). However, only surveys that collect information on the assessee's

"country of birth", or at the minimum information that can differentiate between native-born and foreign-born, would be useful here.

271.   While the internationally-supported surveys are not widely conducted at present, they provide a good example of how assessments might be administered. Where available, national surveys of adult literacy and numeracy skills may serve as additional sources of data for this indicator – again subject to the condition that information is collected during the survey that would differentiate assessees according to their migratory status.

272.   Data issues pertaining to the indicator in general, as mentioned in section B, apply to the indicator disaggregated by migratory status.

273.   In addition, sample size may be a deterrent when comparison is desired between the two migratory statuses. With the small sample size of a survey in general and of skills assessment surveys in particular, the number of foreign-born persons whose learning is being assessed may be so small as to result in big sampling errors that make any comparison with native-born persons untenable.

4.b.1 Volume of official development assistance flows for scholarships by sector and type of study

[Custodian agency: OECD]

274.   This indicator refers to the volume of official development assistance (ODA) flows for scholarships to developing countries. The statistics provided are the monetary amounts (in US$) of total ODA as reported by donor countries for said purpose. If desired, statistics might be computed to show the total volume of ODA going to each recipient country; however, they will not translate to the number of students or trainees in each country that are eventually awarded the scholarship and proceed to go abroad to study or be trained.

275.   It appears that this indicator is not an appropriate indicator for improving migration data in the context of the 2030 agenda.

5.5.2 Proportion of women in managerial positions

[Custodian agency: ILO]

A. Definitions and concepts

276.   The proportion of women in managerial positions refers to the proportion of females among the total number of persons employed in senior and middle management.

277.   For the purposes of this indicator, senior and middle management positions correspond to occupations included in major group 1 in the International Standard Classification of Occupations (ISCO) minus certain categories. In ISCO-08 category 14 (hospitality, retail and other services managers) is excluded, while in ISCO-88 category 13 (general managers) is excluded. These categories are excluded because they comprise mainly managers of small enterprises.

278. *ISCO* organizes jobs into a clearly defined set of groups according to the tasks and duties undertaken in the job. The revisions of 1988 (ISCO-88) and 2008 (ISCO-08) are the versions most widely used at present.

279. *Employed persons* are all persons of working age who, during a specified brief period (e.g. a day or a week), were engaged in any activity to produce goods or provide services for pay or profit. For more detail, see "Resolution concerning statistics of work, employment and labour underutilization, adopted by the Nineteenth International Conference of Labour Statisticians (October 2013).[35]

B. Methodology, sources of data and data issues

280. The indicator "Proportion of women in managerial positions" (PWmgmt) is calculated as follows:

$$PWmgmt = \frac{Wmgmt}{Tmgmt} \times 100$$

where Wmgmt is the number of women employed in ISCO-08 major category 1 minus women employed in sub-category 14 (if using ISCO-08); or the number of women employed in ISCO-88 major category 1 minus women employed in sub-category 13 (if using ISCO-88),

and Tmgmt is the total number of persons employed in ISCO-08 major category 1 minus all persons employed in sub-category 14 (if using ISCO-08); or the total number of persons employed in ISCO-88 major category 1 minus all persons employed in sub-category 13 (if using ISCO-88).

281.   The data for this indicator is collected mainly through labour force surveys or other types of household surveys with a module on employment. Surveys are conducted by national statistical offices or ministries of labour in countries. Before disaggregation by migrant status is calculated, it is important to check the number of migrants in the survey sample. Because migrant population are a minority in any national population, their numbers in the survey could end up too small. This would result in sampling error that is too high to provide an indicator of meaningful comparative value. In such cases, extreme caution should be made regarding disaggregation by migratory status.

282. Establishment surveys or administrative records can also provide useful data on female share of management positions. In these cases, the coverage is likely to be limited to formal enterprises or enterprises of a certain size. Information on the type of enterprises covered should be provided with the statistics.

283. The main limitation of this indicator is that it fails to capture the differences in the levels of responsibility of women and men in their respective managerial positions, or the importance of the enterprises and organizations in which they are employed.

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[35] http://ilo.org/global/statistics-and-databases/standards-and-guidelines/resolutions-adopted-by-international-conferences-of-labour-statisticians/WCMS_230304/lang--en/index.htm

284.   The quality of the indicator is also heavily dependent on the reliability of the employment statistics by occupation at the two-digit level of the ISCO.

285.   When data at the two-digit level of the ISCO are not available, data for major group 1 of ISCO-08 or ISCO-88 can be used as proxy. It should be noted that in such cases, the calculated indicator refers to the female share in all management positions, rather than to the female share of senior and middle management positions only. Junior management positions are included, and women tend to be more widely represented in these positions than in senior or middle management positions. Thus, using the one-digit major occupation group 1 probably over-estimates women's role in high-level decision-making.

C.   Rationale for disaggregating by migratory status

286.   SDG Target 5.5 aims to ensure women's "full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life". This target being under the goal of gender equality, the comparison sought is between women and men.

287.   Migrant women are doubly disadvantaged when it comes to participation in the higher rungs of decision-making. They have to hurdle the dual obstacles of being a woman and being foreign-born. To obtain a better understanding of their position, both factors have to be looked into.

D.   Indicator 5.5.2 disaggregated by migratory status: Methodology, sources of data and data issues

288.   Two proportions are suggested for indicator 5.5.2. The first is the proportion of women among all employed foreign-born persons in managerial positions; and the second, the proportion of women among employed native-born persons in managerial positions. The first proportion indicates the degree of gender equality in high levels of management among the employed foreign-born population only. The second proportion, showing the corresponding statistic for the native-born, offers a comparison of how migrant women fare against native-born women in terms of gender equality. This latter gives a glimpse of the "migrant factor".

289.   The main sources of data for this indicator are national labour force surveys. In their absence, other household surveys that collect detailed information on employment, including occupation, can be used. To allow the required disaggregation of this indicator, the inclusion of a question on country of birth or at the minimum the nativity (native-born or foreign-born) of each survey respondent is crucial. Unfortunately, this requisite information for identifying migrant population is not commonly collected in a labour force or other general household survey.

290.   It is, however, possible to disaggregate the indicator by migrant status if there is a unique identifier for each person in the survey that can be linked to the same identifier in a well-functioning population register. This linking of information from the labour force survey with the population register will provide data on the respondent's country of birth, information that is typically recorded in population registers. In countries that keep a separate register for foreign citizens or foreign-born persons, those registers would have to be tapped for data linking as well.

291. A major drawback to the use of surveys for the present indicator is their sample size. While the sample size of the labour force or other household survey may be large enough to create indicators for the general population, the small proportion of foreign-born persons in a country limits the survey's utility for studying migrant population. Furthermore, the proportion of persons employed in managerial positions (major group 1 in ISCO-08 and ISCO-88) is often low.

292. In countries that do not have a labour force survey or where the foreign-born population is small, an alternative source of data is the population census. The majority of countries collect data on occupation and country of birth on the "long form" in a population census, which makes disaggregation of this indicator by migrant status possible. The large sample for which these detailed data are collected in a census eliminates the problem of small sample size encountered in surveys. The disadvantage of using population censuses is their low periodicity, typically once every 10 years.

293. It should be noted that a result depicting an equitable proportion of women among foreign-born managerial workers may in certain instances be because there are also few male foreign-born managerial workers. In short, there might be ostensible "gender equality" among foreign-born workers in terms of participation in decision-making in political and economic life. Because this indicator concentrates on gender equality, however, it cannot show lack of parity between foreign-born and native-born workers.

8.3.1 Proportion of informal employment in non-agricultural employment, by sex

[Custodian agency: ILO]

A. Definitions and concepts

294. This indicator is defined as the percentage of non-agricultural employment that is classified as informal employment.

295. *Non-agricultural employment* is defined as persons aged 15 and above who, during a short reference period such as a day or a week, (i) did some work (even for just one hour) for pay, profit or family gain, in cash or in kind; or (ii) were attached to a job or had an enterprise from which they were 'temporarily' absent during this period (for such reasons as illness, maternity, parental leave, holiday, training, industrial dispute); and whose work or enterprise falls outside of major group A, Agriculture, forestry and fishing (i.e. within Major groups B through U of the International Standard Industrial Classification of All Economic Activities, Rev. 4[36]).

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[36] United Nations, 2008. *International Standard Industrial Classification of All Economic Activities (ISIC)*, Rev. 4
(https://unstats.un.org/unsd/publication/SeriesM/seriesm_4rev4e.pdf)

296. *Informal employment* comprises persons who in their main or secondary jobs were in one of the following employment categories:

    i.   Own-account workers, employers and members of producers' cooperatives employed in their own informal sector enterprises (the characteristics of the enterprise determine the informal nature of their jobs);

    ii.   Own-account workers engaged in the production of goods exclusively for own final use by their household (e.g. subsistence farming);

    iii.   Contributing family workers, regardless of whether they work in formal or informal sector enterprises (they usually do not have explicit, written contracts of employment, and are not subject to labour legislation, social security regulations, collective agreements, etc., which determines the informal nature of their jobs);

    iv.   Employees holding informal jobs, whether employed by formal sector enterprises, informal sector enterprises, or as paid domestic workers by households (employees are considered to have informal jobs if their employment relationship is, in law or in practice, not subject to national labour legislation, income taxation, social protection or entitlement to certain employment benefits).

297. *Informal sector* enterprises are enterprises that fulfil the following three conditions:

    i.   It is an unincorporated enterprise (it is not constituted as a legal entity separate from its owners, and it is owned and controlled by one or more members of one or more households, and it is not a quasi-corporation: it does not have a complete set of accounts, including balance sheets);

    ii.   It sells at least some of the goods or services it produces; and

    iii.   The enterprise is not registered, or the employees of the enterprise are not registered, or the number of persons engaged on a continuous basis is below a threshold determined by the country.

B. Methodology, sources of data and data issues

298. The percentage of non-agricultural employment that is classified as informal employment is calculated as follows:

$$\frac{\text{Informal employment in non} - \text{agricultural activities}}{\text{Total employment in non} - \text{agricultural activities}} \times 100$$

This indicator is calculated separately for each sex.

299. The data for this indicator are obtained from large-scale national labour force surveys conducted by the national statistical office or ministry of labour. Other nationally representative household surveys with a module on employment may also be able to provide the data. To allow the calculation of this indicator, the survey

must include sufficient information to determine whether the respondent's job (or enterprise) is of a formal or informal nature; and whether the employing establishment is formal or informal in nature.

300. The most significant data issue is the varying definitions used by countries in determining informal employment and the informal sector. While detailed definitions have been provided by the ILO, in practice the measurement of informal employment and the identification of the informal sector enterprises remain difficult for countries. As a consequence, the international comparability of this indicator is hindered.

C. Rationale for disaggregating by migratory status

301. Migrant population, especially recent migrants, often work in the periphery of the host country's mainstream economy. Often, they have not been fully integrated into the social and economic structures of the host country, and some possibly also face discrimination based on nationality. Pressured to earn a living, many of them could end up in informal employment.

302. Comparing this indicator for migrant population (foreign-born) versus non-migrant population (native-born) can help determine the veracity of the above supposition.

D. Indicator 8.3.1 disaggregated by migratory status: Methodology, sources of data and data issues

303. The same formula as in section B is applied to data compiled separately for foreign-born and native-born persons.

For foreign-born persons:

$$\frac{\text{Informal employment of foreign−born persons in non−agricultural activities}}{\text{TotaI employment of foreign−born persons in non−agricultural activities}} \times 100$$

For native-born persons:

$$\frac{\text{Informal employment of native−born persons in non−agricultural activities}}{\text{TotaI employment of native−born persons in non−agricultural activities}} \times 100$$

304. Sources of data are national labour force surveys or other nationally representative household surveys with a comprehensive employment module that allows the identification of informal employment and informal enterprises. In addition, these surveys must also contain information on the country of birth (or, at the minimum, whether native-born or foreign-born) of each surveyed person.

305. Before disaggregation by migrant status is calculated, it is important to check thesize of migrant population in the survey sample. Because migrant population are a minority in any national population, their numbers in the survey could end up too small. This would result in sampling error that is too high to provide an indicator of meaningful comparative value. In such cases, extreme caution should be made regarding disaggregation by migratory status.

8.5.1 Average hourly earnings of female and male employees, by occupation, age and persons with disabilities

[Custodian agency: ILO]

A. Definitions and concepts

306.   The average hourly earnings of employees is defined as the arithmetic average of the hourly earnings of all employees.

307.   *Earnings* refer to the gross remuneration in cash or in kind paid to employees, as a rule at regular intervals, for time worked or work done together with remuneration for time not worked, such as annual vacation, other type of paid leave or holidays. For international comparability purposes, statistics on earnings relate to employees' gross remuneration, i.e. the total before any deductions are made by the employer in respect of taxes, contributions of employees to social security and pension schemes, life and health insurance premiums, union dues and other obligations of employees.

308.   Earnings exclude employers' contributions paid in respect of their employees to social security and pension schemes or any benefits received by employees under these schemes. Earnings also exclude severance and termination pay.

309.   *Employees* are all those workers who hold the type of jobs defined as "paid employment jobs". They are typically remunerated by wages and salaries, but may be paid by commission from sales, by piece rates, bonuses or in-kind payments such as food, housing or training.[37]

310.   *Paid employment jobs* are those jobs where the incumbents hold explicit (written or oral) or implicit employment contracts which give them a basic remuneration which is not directly dependent upon the revenue of the unit for which they work. This unit can be a corporation, a non-profit institution, a government unit or a household. Some or all of the tools, capital equipment, information and/or premises used by the incumbents may be owned by others. The incumbents may work under direct supervision of, or according to strict guidelines set by, the owner(s) or persons in the owners' employment.[38]

B. Methodology, sources of data and data issues

311.   For each group of employees x, the average hourly earnings is calculated using the following formula:

$$\sum \text{Total earnings of all employees in group } x$$
_____

[37] International Labour Office, 1993. Resolution concerning the International Classification of Status of Employment (ICSE), adopted by the 15th International Conference of Labour Statisticians. Available at: http://www.ilo.org/global/statistics-and-databases/standards-and-guidelines/resolutions-adopted-by-international-conferences-of-labour-statisticians/WCMS_087562/lang--en/index.htm
[38] Ibid.

$$\sum \text{Total hours worked by all employees in group } x$$

where x refers employee group x. Each employee group x is a combination of 4 dimensions: sex (male or female), occupation group (any of the Major groups 1 through 0 in ISCO-08 or ISCO-88), age group (for example 15-24) and disability status (disabled or not disabled).

312. There are a variety of possible sources of data for earnings of employees. To be able to calculate indicator 8.5.1, however, the source should also have information on each employee's sex, age, occupation, earnings and hours worked. Two national sources usually have the required data: establishment surveys and labour force surveys.

313. Establishment surveys are usually the most reliable source, given the high accuracy of earnings figures derived therefrom (since information typically comes from the payroll). The main disadvantage of this source is that it is limited in coverage, as it usually excludes small establishments, agricultural establishments and/or informal sector establishments.

314. Labour force surveys (or household surveys with an employment module) are a good source of data for the above indicator. It can provide earnings statistics covering all economic activities and all types and sizes of establishments. However, the quality of data from surveys may be poorer; errors or non-response on reports of earnings, hours worked and occupation would affect the overall accuracy of the resulting statistics and indicators.

315. While earnings data can be derived from other administrative records, the information therein may not be sufficient to allow the calculation of the required indicators. For example, tax returns do not have information on the number of hours worked by the taxpayer.

C. Rationale for disaggregating by migratory status

316. Migrant population, if employed, tend to be relegated to less desirable jobs with lower remuneration. To ascertain if foreign-born employees are disadvantaged in terms of earnings, it is useful to compare their earnings with those of native-born employees.

D. Indicator 8.5.1 disaggregated by migratory status: Methodology, sources of data and data issues

317. The same formula as in section B is applied to data disaggregated by migrant status (foreign-born employees, native-born employees). Thus,

For foreign-born employees:

$$\frac{\sum \text{Total earnings of all foreign-born employees in group } x}{\sum \text{Total hours worked by all foreign-born employees in group}}$$

For native-born employees:

$\sum$ Total earnings of all native-born employees in group x

_____

$\sum$ Total hours worked by all native-born employees in group x

where x refers employee group x. Each employee group x is a combination of 4 variables: sex (female or male), occupation group (any of the Major groups 1 through 0 in ISCO-08 or ISCO-88), age group (for example 15-24) and disability status (disabled or not disabled).

318.   As indicated in section B, possible sources of data for this indicator must have earnings of employees, as well as information on each employee's sex, age, occupation, earnings and hours worked. To allow disaggregation by migrant status, the data should also have information on each employee's country of birth or information on whether the employee is native born or foreign-born.

319.   The best source of data would be labour force surveys or household surveys with a comprehensive employment module. Most of these surveys would collect information listed in the previous paragraph, enabling a disaggregation of indicator 8.5.1 by migrant status.

320.   Establishment surveys may also provide the data for indicator 8.5.1, although as indicated in section B the one of its limitations is in its coverage, as it usually excludes small establishments. It is also uncommon for survey of establishments to collect so information on each employee's country of birth.

321.   When available information from an establishment survey, labour force survey or some other household survey allows the calculation of average hourly earnings of female and male employees but contains no information on employees' country of birth, a possible supplementary source is a well-functioning population register and register of foreigncitizens, if they exist in the country. These registers would typically include each person's country of birth. However, the possibility of using the two sources together rests on the existence of a unique person identifier that is common to both the survey and the register(s). This identifier can be used to link records from the survey to those in the register.

322.   It should be noted that labour force and other household surveys include a limited number of sample households. Where disaggregation by multiple dimensions is called for, the resulting sample size for each category could be so small as to render the comparisons unreliable. For indicator 8.5.1, respondents are to be filtered to include only employees. From them, disaggregation is required by sex, occupation, age and disability status, and furthermore by migrant status. Unless the country has a large proportion of migrant population (or foreign-born persons), the resulting number of persons ending up in each foreign-born category will be small. For example, the category employees aged 15-24, female, disabled, major occupation group 1 and foreign-born might yield less than five persons. In such cases, comparisons by migratory status have to be treated with extreme caution, or even forfeited.

8.5.2 Unemployment rate, by sex, age and persons with disabilities

[Custodian agency: ILO]

A. Definitions and concepts[39]

323. Unemployment rate is defined as the percentage of the labour force that is unemployed.

324. The *labour force* refers to the sum of *persons in unemployment* and *persons in employment*.

325. *Persons in unemployment*, or the *unemployed*, are defined as all persons of working age who satisfy the following three conditions:

   i. Were not in paid employment or self-employment during the short reference period (e.g., last 4 weeks) for the measurement of employment;

   ii. Were available during the short reference period to take up employment given a job opportunity; and

   iii. Were seeking work during a specified recent period (e.g., last four weeks), i.e. had carried out any activity for the purpose of finding a job or setting up a business or agricultural undertaking.

326. Included as *persons in unemployment* are:

   i. future starters, defined as persons "not in employment" and "currently available" who did not "seek employment" because they had already made arrangements to start a job within a short subsequent period, set according to the general length of waiting time for starting a new job in the national context but generally not greater than three months;

   ii. participants in skills training or retraining schemes within employment promotion programmes who, on that basis, were "not in employment", not "currently available" and did not "seek employment" because they had a job offer to start within a short subsequent period generally not greater than three months; and

   iii. persons "not in employment" who carried out activities to migrate abroad in order to work for pay or profit but who were still waiting for the opportunity to leave.

327. *Persons in employment*, or the *employed*, are defined as all those of working age who, during a short reference period, were engaged in any activity to produce goods or provide services for pay or profit. They comprise:

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[39] For more detail, see ILO (2013). *Resolution concerning statistics of work, employment and labour underutilization*, adopted by the 19th International Conference of Labour Statisticians.

i. Employed persons "at work", i.e. who worked in a job for at least one hour;

ii. Employed persons "not at work" due to temporary absence from a job (such as sick leave, public holidays, vacation or annual leave, and periods of maternity or paternity leave as specified by legislation), or to working-time arrangements (such as shift work, flex-time and compensatory leave for overtime).

B. Methodology, sources of data and data issues

328. Unemployment rate is calculated as:

$$\frac{\text{Unemployed persons}}{\text{Persons in the labour force}} \times 100$$

where unemployed persons and persons in the labour force are as defined in section A.

329. The preferred source of data for this indicator is the national labour force survey, or other household survey with a module on employment, usually conducted by the national statistical office or the labour ministry. To allow the calculation of this indicator, the surveys should, at the minimum, provide data on both the labour force and unemployment by sex and age. Disaggregation by disability status may or may not be possible, depending on whether the national labour force survey has incorporated the necessary questions on disability to determine each person's disability status. At present, disaggregation by disability is not widely available yet.

330. Where labour force surveys are not carried out, the population census may provide data to enable the calculation of the indicators. Unemployment registers, under social insurance administrative systems, can also serve as instruments to collect data on unemployment levels, and sometimes used to supplement the information obtained by household surveys.

331. The comprehensiveness, and consequently the reliability and comparability, of unemployment statistics depends in part on the frequency of the surveys. Labour force surveys may be conducted monthly, quarterly, biannually or annually. Among other things, a considerable degree of seasonability can influence the results when the full year is not covered.

332. The geographic coverage of the survey used as a source of unemployment data also has an impact on the comparability of results. A less than national coverage – urban areas, city, regional – has obvious limitations to comparability to the extent that coverage is not representative of the country. Unemployment in urban areas may tend to be higher than total unemployment because of the exclusion of the rural areas where workers are likely to work, although they may be underemployed or unpaid family workers, rather than seek work in a non-existent or small formal sector.

333. An important weakness of the unemployment rate as a measure of labour underutilization in developing countries should be pointed out here. While the unemployment rate continues to prove useful as an indicator of labour market

performance and, specifically as a key measure of labour underutilization in most developed countries, its significance and meaning in developing countries is often questioned.

334. In developing countries where unemployment insurance systems or social safety nets are absent, persons of working age must avoid unemployment, resorting to engaging in some form of economic activity, however insignificant or inadequate. Thus, in this context, other measures should supplement the unemployment rate to comprehensively assess labour underutilization.

C. Rationale for disaggregating by migratory status

335. Migrant population, especially new migrants, may face the prospect of unemployment more than non-migrant population. To establish this, the unemployment rate should be calculated separately and compared for foreign-born persons and native-born persons.

D. Indicator 8.5.2 disaggregated by migratory status: Methodology, sources of data and data issues

336. The formula is as given in section B. Unemployment rate is calculated separately for foreign-born (FB) persons and native-born (NB) persons, as follows:

For foreign-born persons:

$$\text{FB unemployment rate } = \frac{\text{Unemployed persons among the foreign} - \text{born}}{\text{Foreign} - \text{born persons in the labour force}} \text{ x } 100$$

For native-born persons:

$$\text{NB unemployment rate } = \frac{\text{Unemployed persons among the native} - \text{born}}{\text{Native} - \text{born persons in the labour force}} \text{ x } 100$$

337. The sources of data are as stated in section B, provided that the survey also collected information on each surveyed person's country of birth (or at least whether foreign-born or native-born). However, for the desired additional disaggregation by migrant status, the sample size of the labour force survey may not be big enough to allow a reliable estimate of unemployment rate by sex and age for foreign-born persons in the labour force. The sample sizes of the foreign-born by sex and age in particular should be examined to ascertain that they are sufficiently large, and the sampling errors investigated, before any comparisons are made between the unemployment rates of the foreign-born and native-born.

338. The population census has an advantage over the labour force survey and other household surveys in terms of sample size and the collection of information country of birth. This advantage is, however, offset by the usually lower quality of employment and unemployment data collected in a census. Encompassing a big number of questions, a population census cannot gather as detailed, accurate or complete data on employment and unemployment as in a survey dedicated to measure labour. However, the census may be the only available data source in some countries.

8.6.1 Proportion of youth (aged 15-24 years) not in education, employment or training

[Custodian agency: ILO]

A. Definitions and concepts

339. This indicator is defined as the percentage of young persons (aged 15-24 years) not in education, employment or training, out of the total youth population. It is also called the "NEET rate".

340. For the purposes of this indicator, *youth* is defined as all persons between the ages of 15 and 24 (inclusive).

341. *Education,* according to the International Standard Classification of Education (ISCED), is defined as organized and sustained communication designed to bring about learning. It comprises the following:

   i. Formal education - education that is institutionalized, intentional, and planned through public organizations and recognized private bodies and, in their totality, make up the formal education system of a country;

   ii. Non-formal education - education that is institutionalized, intentional and planned by an education provider but is considered an addition, alternative and/or a complement to formal education. It may be short in duration and/or low in intensity and it is typically provided in the form of short courses, workshops or seminars.

342. For the purposes of this indicator, persons will be considered in education if they are in formal or non-formal education, as described above. Informal training is excluded.

343. *Persons in employment*, or the *employed*, are defined as all those of working age who, during a short reference period, were engaged in any activity to produce goods or provide services for pay or profit. They comprise:

   i. Employed persons "at work", i.e. who worked in a job for at least one hour;

   ii. Employed persons "not at work" due to temporary absence from a job (such as sick leave, public holidays, vacation or annual leave, and periods of maternity or paternity leave as specified by legislation), or to working-time arrangements (such as shift work, flex-time and compensatory leave for overtime).

344. *Training* is defined as a non-academic learning activity through which persons acquire specific skills intended for vocational or technical jobs. Vocational training prepares trainees for jobs that are based on manual or practical activities, and for skilled operative jobs, both blue and white collar related to a specific trade, occupation or vocation. The coverage of vocational and technical training includes only programmes that are solely school-based vocational and technical training. Employer-based training is, by definition, excluded from the scope of this indicator.

B. Methodology, sources of data and data issues

345. The "NEET" rate is calculated as follows:

$$NEET\ rate = \frac{Y - Y_{Emp} - Y_{NoEmpET}}{Y} \times 100$$

where Y is the total number of youth (persons aged 15-24);
Y_{Emp} is the number of youth in employment; and
$Y_{NoEmpET}$ is the number of youth not in employment but in education or training

346. Alternatively, the numerator in the formula just given can be expressed in terms of unemployed youth and youth not in the labour force. In this case, the NEET rate is calculated as follows:

$$NEET\ rate = \frac{Y_{Unemp} + Y_{NILF} - Y_{Unemp,inET} - Y_{NILF,in\ ET}}{Y} \times 100$$

where Y is the total number of youth;
Y_{Unemp} is the number of unemployed youth;
Y_{NILF} is the number of youth outside the labour force (i.e., not in the labour force);
$Y_{Unemp,inET}$ is the number of unemployed youth who are in education or training; and
$Y_{NILF,inET}$ is the number of youth outside the labour force who are in education and training

347. Here, the NEET rate is represented as the sum of (a) unemployed youth not in education or training and (b) youth outside the labour force not in education or training. For the definition and concepts relating to unemployed persons and persons in the labour force, see section A of indicator 8.5.2 (Unemployment rate). Persons outside the labour force would be the total number of persons in the population minus the number of persons in the labour force.

348. For this indicator, reliable data is needed on both the labour market status and participation in education or training of individual young persons between the ages of 15 and 24. It is important to note here that youth who are both in employment and education or training simultaneously should not be double –counted when subtracted from the total number of youth.

349. The preferred data source for this indicator is a national household-based labour force survey. The population census and/or other household surveys with an appropriate employment module may also provide the data. Censuses and household surveys are generally conducted by the national statistical office (NSO). The labour force survey may be conducted by the NSO or the ministry of labour.

350. The survey or census has to include appropriate questions to determine the labour force status and employment status, as well as the participation in education or training, of each young person in the surveyed household. The quality of data obtained is heavily dependent on the questionnaire design, the sample size and design, and the accuracy of respondents' answers.

351. NEET provides a measure of the current universe of potential youth labour market entrants. In terms of the analysis of the indicator, it is important to bear in mind that it is composed of two different sub-groups: unemployed youth not in education or training, and youth outside the labour force not in education or training. The prevalence and composition of each sub-group would have policy implications, and thus, should also be considered when analysing the NEET rate.

C. Rationale for disaggregating NEET rate by migratory status

352. In some settings, young migrant population may not have as easy an opportunity as their native-born counterparts when it comes to finding employment. Their legal status in the country may prohibit or hinder them from employment. If they are permitted to work, their skills and experience may not be suitable to the kinds of work available to them in the host country. A lack of minimum proficiency in the host country's language could also be an impediment to their finding employment. Finally, there is the possibility of discrimination simply on the basis of nationality.

353. Participating in education or training may also not be as straightforward or simple for them as for native-born youths, especially if they enter the host country past the age for which education is free. They may not meet the pre-requisites to secondary or tertiary education, or have the minimum level of proficiency with the host country's language. These young migrants may forego further education or training to seek employment, whether by choice or economic necessity.

354. To ascertain if migratory status affects NEET rate, it is necessary to compare the rate for foreign-born youths and that for native-born youths.

D. Indicator 8.6.1 disaggregated by migratory status: Methodology, sources of data and data issues

355. Following the formulas in section B, NEET rate should be calculated for youth aged 15-24, separately for the foreign-born and native-born populations.

356. The preferred data source for this indicator disaggregated by migratory status is still the national household-based labour force survey. The population census and/or other household surveys with an appropriate employment module may also provide the data.

357. The data issues are as pointed out in section B. Additionally, because of disaggregation by migratory status, the sample sizes must be examined, especially that for foreign-born youth in sample surveys. Since foreign-born populations are a minority in almost any country, the number of foreign-born youths covered by the household survey may be too few to enable a reliable estimate of their NEET rate (sampling error will be very large due to a small sample size).

358. For disaggregation of this indicator, the population census could provide an ample sample size, even for foreign-born youth. The disadvantage of censuses is that it is conducted at long intervals; moreover, they cannot cover a given topic comprehensively. For this particular indicator, while employment and formal education data from the census may to some extent be satisfactory, non-formal

education and training may be left out. Such a situation could result in an inflated NEET rate, not just for foreign-born youth but also for native-born youth.

8.8.1 Frequency rates of fatal and non-fatal occupational injuries, by sex and migrant status

[Custodian agency: ILO]

A. Definitions and concepts[40]

359. The indicator is defined as the number of cases of fatal and non-fatal injury per hour worked by workers in the reference group during the reference period. It is a measure of the risk of having a fatal or non-fatal occupational injury based on the duration of exposure to adverse work-related factors. The indicator is calculated separately for fatal and non-fatal injuries.

360. *Occupational injury* is defined as any personal injury, disease or death resulting from an occupational accident. An occupational injury is different from an occupational disease, which comes as a result of an exposure over a period of time to risk factors linked to the work activity. Diseases are included only in cases where the disease arose as a direct result of an accident.

361. *Fatal occupational injury* is an occupational injury leading to death within one year of the day of the occupational accident. A *case of fatal occupational injury* is thus a case of a worker fatally injured as a result of one occupational accident, and where death occurred within one year of the day of the accident.

362. *Occupational accident* is defined as an unexpected and unplanned occurrence, including acts of violence, arising out of or in connection with work which results in one or more workers incurring a personal injury, disease or death. Occupational accidents includes travel, transport or road traffic accidents in which workers are injured and which arise out of or in the course of work; that is, while engaged in an economic activity, or at work, or carrying out the business of the employer.

363. *Workers in the reference group* refer to the average number of workers in the particular group under consideration and who are covered by the source of the statistics on occupational injuries. Examples are those of a specific sex or in a specific economic activity, occupation region, age group, or any combination of these; or those covered by a particular insurance scheme, accident notification systems, or household and establishment survey.

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[40] The definitions of the main concepts presented are derived from ILO (1998), Resolution concerning statistics of occupational injuries (resulting from occupational accidents), adopted by the 16th ICLS and available at http://www.ilo.org/global/statistics-and-databases/standards-and-guidelines/resolutions-adopted-by-international-conferences-of-labour-statisticians/WCMS_087528/lang--en/index.htm

B. Methodology, sources of data and data issues

364. The frequency rates of fatal and non-fatal occupational injuries are calculated separately, since statistics on fatal injuries tend to come from a different source than those on non-fatal injuries.

365. The fatal occupational injury frequency rate is calculated as the number of new cases of fatal occupational injury during the reference year divided by the total number of hours worked by workers in the reference group during the reference year, multiplied by 1,000,000.

366. In a similar way, the non-fatal occupational injury frequency rate is calculated as the number of new cases of non-fatal occupational injury during the reference year divided by the total number of hours worked by workers in the reference group during the reference year, multiplied by 1,000,000.

367. Ideally the denominator should be the total number of hours actually worked by workers in the reference group. When this is not possible, the denominator can be estimated on the basis of workers' normal hours of work taking into account entitlements to periods of paid absence from work such as paid vacation, paid sick leave and public holidays.

368. ILO suggests that where the number of hours worked cannot be calculated or estimated, incidence rates be calculated (instead of frequency rates) to represent this indicator. For either fatal or non-fatal injury incidence rate, the numerator is the same as for the frequency rate, but the denominator is the average number of workers in the reference group during the reference year. When calculating the average number of workers, the number of part-time workers is converted to full-time equivalents. For both fatal and non-fatal occupational injury incidence rates, the quotient is multiplied by 100,000.

369. The recommended data sources are different types of administrative records, such as records of national systems for the notification of occupational injuries. Administrative records include labour inspection records and annual reports; insurance and compensation records; and death registers. Administrative sources may be supplemented by household surveys (especially in order to cover informal sector enterprises and the self-employed) and/or establishment surveys, if they collect injury data.

370. With sources of administrative records coming from various types of recording systems and kept by different agencies, statistics for this indicator tend to have weak comparability and consistency. No single administrative recording system or registry is comprehensive; typically only a particular subset of all injury cases fall within a system's domain. For example, insurance records would miss persons who are not insured, and compensation records would miss those who are not compensated or who did not apply for compensation.

371. Occupational injuries may also be under reported in labour inspection records, and require proper systems to be put in place to ensure the best reporting and data quality. Under reporting is thought to be present in countries at all levels of development but may be particularly problematic in some developing countries.

372. The possibility exists of combining data from various sources. Needless to say, great caution should be exercised when pooling data, as double counting of cases of occupational injury can occur when diverse registries or sources are consolidated in the attempt to obtain more comprehensive statistics.

373. Because of data quality issues, ILO points out that it may be more relevant to analyse trends rather than levels for this indicator. When measured over a period of time, the data can reveal progress or deterioration in occupational safety and health, and thus point to the effectiveness of accident prevention measures.

374. Indicator 8.8.1 is volatile. Strong annual fluctuations may occur due to unexpected but significant accidents or national calamities. The underlying trend should therefore be analysed.

C. Rationale for disaggregating by migratory status

375. As listed in target 8.8 of the 2030 Agenda for Sustainable Development, the indicator 8.8.1, Frequency rates of fatal and non-fatal occupational injuries, are to be disaggregated by sex and migrant status. There is apparent wide recognition that migrant workers, in particular women migrant workers, need special attention with respect to safe and secure working environments. Migrant workers perhaps also tend to be in precarious employment more than their native counterparts.

D. Indicator 8.8.1 disaggregated by migratory status: Methodology, sources of data and data issues

376. The indicator 8.8.1 is "Frequency rates of fatal and non-fatal occupational injuries by sex and migrant status". The calculation of the indicator, specified in section B above, should therefore be made separately for foreign-born workers and native-born workers, and separately by sex. This means that frequency rates of injury should be calculated for four reference groups: foreign-born male workers, foreign-born female workers, native-born male workers and native-born female workers.

377. Data sources and data issues are as laid out in section B. It should be pointed out that if the data source does not contain information on the worker's sex and whether a worker is foreign-born or native-born, it is not possible to calculate the frequency rates with the desired disaggregation. It would also not be possible to calculate disaggregated incidence rates.

378. Even if all workers' sex and migrant status are available, there is still the possibility that disaggregated frequency rates cannot be calculated. This would be the case if the total number of working hours (the denominator for the frequency rate) is not available separately by sex and migrant status of workers. The incidence rates may be derivable for the four reference groups.

379. Caution should be made when comparing frequency rates of fatal and non-fatal injuries of foreign-born workers with native-born workers. Fatal and non-fatal injuries to foreign-born workers may more likely be missed compared to native-born workers. This would be true if the foreign-born workers (compared to their native-born counterparts) are more likely to be in the informal sector, be uninsured,

uncompensated or missed in labour inspection reports and other relevant administrative records.

8.8.2 Level of national compliance with labour rights (freedom of association and collective bargaining) based on International Labour Organization (ILO) textual sources and national legislation, by sex and migrant status

[Custodian agency: ILO]

380. The indicator is defined according to the ILO Conventions 82 on Freedom of Association and Protection of the Right to Organize and 98 on Right to Organize and Collective Bargaining and related ILO jurisprudence. Its goal is to provide reliable and concise data on the status of freedom of association and collective bargaining rights in law and practice.

381. At present, the computation of this indicator is done jointly by the ILO and Penn State University. It is based on textual ILO sources containing reliable information on violations of freedom of association and collective bargaining. The main textual sources used are reports of the ILO Committee of Experts on the Application of Conventions and Recommendations, reports of the ILO Conference Committee on the Application of Standards, country baselines under the ILO Declaration Annual Review and others, as well as national legislation. These sources are all ILO sources coming from the ILO supervisory mechanisms and their databases.

382. The indicator as established requires disaggregation by sex and migrant status. However, the coding is not as yet complying with this. Further work will have to be done by the Custodian Agency to make the disaggregation by migrant status possible.

8.10.1 Proportion of adults (aged 15 years and older) with an account at a bank or other financial institution or with a mobile-money-service provider

[Custodian agency: World Bank]

383. This indicator is defined as the percentage of adults (aged 15 and above) who report having an account (by themselves or together with someone else) at a bank or another type of financial institution, or personally using a mobile money service in the past 12 months.

384. *Financial institutions* refer to banks or *other types of financial institutions* such as credit unions, microfinance institutions, cooperatives, or the post office (if applicable).

385. *Mobile money service* refers to GSM association (GSMA) Mobile Money for the Unbanked (MMU) services.

386. The source of data is the World Bank's Global Financial Inclusion (Global Findex) database drawn from survey data in more than 100 countries. The survey

was carried out by Gallup, Inc. in 2011, 2014 and 2017 and covered 150,000 persons in more than 140 countries or areas. The survey is an individual level survey and uses randomly selected, nationally representative samples of approximately 1,000 persons in each country or area. The target population of these surveys is the entire civilian non-institutionalized population aged 15 and above.[41]

387. It may be desirable to compare access to banking and financial services of migrant and non-migrant populations. On the one hand, new migrants may encounter obstacles getting access to banking and financial services if they have not established a long-enough residence or job history in the host country. On the other hand, they may have a very strong motivation and resolve to establish banking services in order to facilitate remittances to family members left behind in their home countries.

388. The main source of data, however, does not allow disaggregation of this indicator by migratory status. The data source, Global Findex Survey, does not have any individual information relating to migratory status.

10.2.1 Proportion of people living below 50 per cent of median income, disaggregated by age group, sex and persons with disabilities

[Custodian agency: World Bank]

389. The methodology for this indicator is currently in development. The Custodian Agency will use the same Global Monitoring Database used in Indicator 1.1.1, and reports that it already produces median income statistics using this database.

390. Disaggregation by disability status is still not possible. There is no information as yet to do so.

391. Disaggregation by migratory status is only possible if the underlying survey includes a question on country of birth or, at the minimum, whether person is foreign-born or native-born. This, however, is currently not the case.

392. If this information were available, the proportion of foreign-born population living below 50 per cent of median income may be calculated by computing 50% of the total population's median income (the "threshold"), then counting the numbers of foreign-born persons living below this threshold, expressed as a proportion of all foreign-born persons. Similarly, the proportion can be calculated for native-born persons and the result compared with that for the foreign-born.

393. Other particulars on disaggregation of this indicator by migratory status await a more definitive description of the methodology and sources of data from the Custodian Agency.

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[41] Methodology, including interview procedures, data preparation, margin of error and notes by country are all available at:
http://www.worldbank.org/content/dam/Worldbank/Research/GlobalFindex/PDF/Metho dology.pdf

10.3.1 Proportion of population reporting having personally felt discriminated against or harassed in the previous 12 months on the basis of a ground of discrimination prohibited under international human rights law

[Custodian agency: OHCHR]

394. The methodology for this indicator is currently in development. Measuring experience and perception of discrimination or harassment is not an easy task, and asking them in a survey requires careful testing and consultations among stakeholders.

395. Migrant populations are one of the specific groups that are recognized as being likely objects of discrimination and harassment. If the plan is to collect data for this indicator in existing nationally representative household surveys, the sample size factor should be taken into account. In most countries, migrant population are a small proportion of the general population, so that appropriate methods may have to be developed to oversample the migrant population.

396. Other particulars on disaggregation of this indicator by migratory status await a more definitive description of the concepts, methodology and sources of data from the Custodian Agency.

10.7.1 Recruitment cost borne by employee as a proportion of yearly income earned in country of destination

[Custodian agency: ILO and World Bank]

397. This indicator relates directly to migrant population and is currently in development. A clear definition of what constitutes "recruitment cost borne by the employee" and "yearly income earned" is required, as well as a detailed method for calculating the indicator.

398. A draft methodology and guidelines document on the indicator has been developed following the experience obtained from a national labour force survey with a customized module on migration conducted in LAO PDR, migration cost surveys conducted in 4 countries of origin and 7 countries of destination, and various expert country and international consultations. The Custodian Agencies, in cooperation with countries, international organizations and experts, continue to refine the methodology.

10.7.2 Number of countries that have implemented well-managed migration policies

[Custodian agency: UN-DESA and IOM]

399. This indicator relates directly to migration policies. The indicator aims to describe the state of global migration policies and track the evolution of such policies over time.

400.   There is a need to develop a clear and simple methodology based on existing data sources and instruments to produce meaningful and actionable information on key gaps and good practices in countries with respect to "well-managed migration policies". At present, methodology for this indicator has not been finalized.

401.   The Migration Governance Framework categorized countries' national migration policies into six domains of what can be considered a first international definition of "well-managed migration policies":

- Adherence to international standards and fulfilment of migrants' rights
- Formulation of policy using evidence and a whole-of-government approach
- Engagement with partners to address migration and related issues
- Advances in the socioeconomic well-being of migrant population and society
- Effectively addressing the mobility dimension of crises
- Ensuring that migration takes place in a safe, orderly and dignified manner

402.   The development of a "migration module", a preliminary set of questions corresponding to the above six policy domains, is underway. This migration module will be incorporated into future rounds of the United Nations Inquiry Among Governments on Population and Development to provide the data required for indicator 10.7.2.

10.c.1 Remittance costs as a proportion of the amount remitted

[Custodian agency: World Bank]

A. Definitions and concepts

403.   This indicator is defined as the total cost of an international remittance transfer, expressed as a percentage of the amount transferred.

404.   *International remittance transfer* (or *remittance transfer* for short) is a cross-border person-to-person payment of relatively low value. The transfers are typically recurrent payments by migrant workers who send money to their families in their home country every month.

405.   *Remittance service* is a service that enables end users to send and/or receive remittance transfers.

406.   *Remittance service provider (RSP)* is an entity, operating as a business, that provides a remittance service for a price to end users, either directly or through agents. These include banks and money transfer operators.

407.   *Remittance cost* is the total cost to the end users of sending a remittance transfer. It includes the fees charged to the sender and the margin by which the exchange rate charged to the end user is above the current interbank exchange rate.

B. Methodology, sources of data and data issues

408.   The target 10.c includes two components, and requires two separate calculations:

i. Global average of transaction costs for migrant remittances (the target is to reduce it to 3% or less), calculated as the simple average of the total cost for all services included in the World Bank's Remittance Prices Worldwide (RPW) database.

ii. Remittance cost in all corridors (the target is to enable remittance senders in all corridors to send money to their receivers at a cost of 5% or less), calculated as the average cost of the three cheapest available remittance services in each corridor for sending the equivalent of US$200, expressed as a percentage of the amount sent. These services must meet a defined set of minimum requirements as described in the World Bank SmaRT methodology.[42]

409. Data for these indicators have been collected by the World Bank through the Remittance Prices Worldwide database since 2008. Data sources are the remittance service providers (RSPs) themselves. The World Bank collects data through a mystery shopping exercise of RSPs. A sample of RSPs covering at least 80% of the market share in each corridor is included in the mystery shopping exercise. The average cost is the simple average of total costs quoted by each RSP operating in a corridor.

410. The indicators calculated represent the supply side, i.e. the average remittance costs as reported by the included RSPs. As such, the indicators represent what a savvy consumer with access to information about various RSPs would pay to transfer remittances in each corridor. They are not measures of what all consumers actually pay on average. Not all migrants are savvy enough to use the best RSPs for their purpose, and not all channels of remittance used by migrant population are covered by RPW. Migrant population might use personal contact methods or other informal channels that are more costly, take a longer time to reach the recipient or be not available at all times.

11.1.1 Proportion of urban population living in slums, informal settlements or inadequate housing

[Custodian agency: UN-Habitat]

A. Definition and concepts

411. The indicator considers two components:

(a) proportion of the urban population living in slums or informal settlements; and
(b) proportion of the urban population living in inadequate housing.

Slums

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[42] In addition to transparency, the remittance services must meet additional criteria such as transaction speed and accessibility. For information on the methodology of SmaRT, see https://remittanceprices.worldbank.org/sites/default/files/smart_methodology.pdf

412.   The agreed operational definition of "*slums*" for measuring the MDG target 7.D is adopted for the SDG. A "*slum household*" is defined as one in which the inhabitants suffer from one or more of the following household deprivations:[43]

    i.   Lack of access to improved water source

    ii.   Lack of access to improved sanitation facilities

    iii.   Lack of sufficient living area

    iv.   Lack of housing durability

    v.   Lack of security of tenure

413.   By extension, the term "*slum dweller*" refers to a person living in a household that lacks any of the basic housing services listed above. Definitions of the services that slum households may be deprived of follow. [44]

414.   *Access to improved water*: A household is considered to have access to improved drinking water if the household members use a facility that is protected from outside contamination, in particular from faecal matters' contamination. Improved drinking water sources include: piped water into dwelling, plot or yard; public tap/stand pipe serving no more than 5 households; protected spring; rainwater collection; bottled water (if secondary source is also improved); bore hole/tube well; and, protected dug well[45]. .

415.   *Access to improved sanitation*: A household is considered to have access to improved sanitation if household members have access to a facility with an excreta disposal system that hygienically separates human waste from human contact. Improved facilities include: flush/pour-flush toilets or latrines connected to a sewer, septic tank or pit; ventilated improved pit latrine; pit latrine with a slabor platform, which covers the pit entirely; and, composting toilets/latrines[46].

416.   *Sufficient living area*: A dwelling unit provides *sufficient living area* for the household members if not more than three people share the same habitable room. Additional indicators of overcrowding have been proposed, including area-level indicators such as average in-house living area per person or the number of households per area. Additionally, housing-unit level indicators such as the number of persons per bed or the number of children under five per room may also be viable. UN-Habitat has also proposed another alternative.[47]

417.   *Housing durability*: A house is considered *durable* if it is built on a non-hazardous location and has a permanent and adequate structure able to protect its

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[43] United Nations (2007), Indicators of Sustainable Development: Guidelines and Methodologies. Third Edition <https://sustainabledevelopment.un.org/index.php?page=view&type=400&nr=107&>; and UN-Habitat (2003), Slums of the World: The face of urban poverty in the new millennium <mirror.unhabitat.org/pmss/getElectronicVersion.aspx?nr=1124&alt=1>
[44] Extracted from https://unstats.un.org/sdgs/metadata/files/Metadata-11-01-01.pdf
[45] https://unstats.un.org/sdgs/metadata/files/Metadata-11-01-01.pdf
[46] https://unstats.un.org/sdgs/metadata/files/Metadata-11-01-01.pdf
[47] For more detail, see https://unstats.un.org/sdgs/metadata/files/Metadata-11-01-01.pdf

inhabitants from the extremes of climatic conditions such as rain, heat, cold, and humidity. The following criteria are used to determine the structural quality/durability of dwellings: (i) permanency of structure (permanent building material for the walls, roof and floor; compliance with building codes; the dwelling is not in a dilapidated state; the dwelling is not in need of major repair) and (ii) location of house (dwelling is not in a hazardous location; the dwelling is not located on or near toxic waste; the dwelling is not located in a flood plain; the dwelling is not located on a steep slope; the dwelling is not located in a dangerous right of way such as rail, highway, airport, power lines).

418. *Security of tenure*: *Secure tenure* is the right of all individuals and groups to effective protection by the State against forced evictions. Security of tenure is understood as a set of relationships with respect to housing and land, established through statutory or customary law or informal or hybrid arrangements, that enables one to live in one's home with security, peace and dignity (A/HRC/25/54). Regardless of the type of tenure, all persons with security of tenure have a legal status against arbitrary unlawful eviction, harassment and other threats. People have secure tenure when there is evidence of documentation that can be used as proof of secure tenure status, and there is either de facto or perceived protection from forced evictions.

Informal Settlements

419. *Informal settlements* are defined by three main criteria[48], which are already covered in the definition of slums. These are:

  i. Inhabitants have no security of tenure vis-à-vis the land or dwellings they inhabit, with modalities ranging from squatting to informal rental housing

  ii. The neighborhoods usually lack, or are cut off from, formal basic services and city infrastructure

  iii. The housing may not comply with current planning and building regulations, is often situated in geographically and environmentally hazardous areas, and may lack a municipal permit

420. Informal settlements are usually seen as synonymous to slums, with a particular focus on the formal status of land, structure and services. Informal settlements can be occupied by urban residents of all income levels, from affluent to poor.

Inadequate housing

421. For housing to be adequate, it must provide more than four walls and a roof and, at a minimum, meet the following criteria:

  i. Legal security of tenure, which guarantees legal protection against forced evictions, harassments and other threats

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[48] United Nations (2015), Conference on Housing and Sustainable Urban Development – Habitat III, Issue Paper No. 22 on Informal Settlements; UN-Habitat (2015), Slum Almanac 2015-2016

ii. <u>Availability of services, materials, facilities and infrastructure</u>, including safe drinking water, adequate sanitation, energy for cooking, heating, lighting, food storage and refuse disposal

iii. <u>Affordability</u>, as housing is not adequate if its cost threatens or compromises the occupants' enjoyment of other human rights

iv. <u>Habitability</u>, as housing is not adequate if it does not guarantee physical safety or provide adequate space, as well as protection against the cold, damp, heat, rain, wind, other threats to health and structural hazards

v. <u>Accessibility</u>, as housing is not adequate if the specific needs of disadvantaged and marginalized groups are not taken into account (such as the poor, people facing discrimination; persons with disabilities, victims of natural disasters)

vi. <u>Location</u>, as housing is not adequate if it is cut off from employment opportunities, health care services, schools, childcare centres and other social facilities, or if it is located in dangerous or polluted sites or in immediate proximity to pollution sources

vii. <u>Cultural adequacy</u>, as housing is not adequate if it does not respect and take into account the expression of cultural identity and ways of life.

B. Methodology, sources of data and data issues

422. The three criteria of informal settlements are essentially captured in the definition of slums, which sustains the combination of both (slums/informal settlements) in a single indicator. As for inadequate housing, most of the criteria for defining it also overlap with those of slums and informal settlements. The three that are not covered by slums/informal settlements are affordability, accessibility and cultural adequacy. For the purpose of composing an indicator, affordability is the most relevant and is also easier to measure.

423. Thus, for SDG indicator 11.1.1, two components (sub-indicators) have been proposed. The first combines slums and informal settlements, thereby allowing comparison with related MDG indicators. The second uses, at present, the sole criterion of affordability from the definition of adequate housing given in section A.

424. The two components of indicator 11.1.1 are calculated for a city as follows:

(a) Percentage of city population living in slums/informal settlements households (% SISH):

$$\% \text{ SISH } = \frac{\text{Number of city population living in SISH households}}{\text{City population}} \times 100$$

(b) Percentage of city population living in inadequate housing households (% IHH)

$$\% \text{ IHH } = \frac{\text{Number of city population living in IHH households}}{\text{City population}} \times 100$$

425. As already mentioned, for indicator 11.1.1 (b), affordability is the criterion currently used in determining whether or not a person lives in an inadequate housing household. A person is considered as "living in an inadequate housing household" if the net monthly expenditure on housing of his or her household exceeds 30% of the total monthly income of the household.

Data sources and data issues for 11.1.1 (a) - slums/informal settlements

426. Data for the slum/informal settlements components of indicator 11.1.1 (a) can be obtained from the national population and housing census, as well as national household surveys such as the Demographic and Health Survey (DHS) and the Multiple Indicator Cluster Survey (MICS). According to UN-Habitat, the indicator on people living in slums is currently measured in more than 320 cities across the world as part of the UN-Habitat City Prosperity Initiative.[49]

427. A limitation of indicator 11.1.1 (a) is the difficulty to agree universally on some definitions and characteristics when referring to deteriorated housing conditions, often due to political or economic considerations.

428. The definitions given above are nonetheless useful in distinctly identifying slums and informal settlements in given countries and cities. However, those identified as slum households and informal settlements based on their satisfying the definitions may vary widely in degree of deprivation. A slum household or informal settlement may lack all basic services and live precariously, whereas another might lack only one of the basic services, such as adequate space. It should be recognized that the indicator gives no differentiation among degrees of deprivation.

429.   In many censuses and surveys, not all housing characteristics and services required for this indicator are measured. This could lead to an underestimate of deteriorated housing units.

430. Security of tenure is particularly difficult to measure and data may not be collected in censuses or surveys. Furthermore, the complicated relation between security of tenure, on the one hand, and land and property, on the other, necessitates more methodological attention on the issue.

431.   Population and housing censuses and household surveys that collect the requisite data for measuring indicator 11.1.1 (a) are not conducted at frequent intervals, making updates of this indicator infrequent.

432. Sample sizes of surveys may be an issue when making sub-national assessments.

433. This indicator does not capture homelessness.

Data sources and data issues for 11.1.1 (b) - Inadequate housing

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[49] United Nations Statistics Division, Metadata for SDG 11.1.1 as at November 2018 (https://unstats.un.org/sdgs/metadata/files/Metadata-11-01-01.pdf).

434. Data for the inadequate housing indicator (11.1.1 (b)), measured through housing affordability, can be obtained and calculated from national income and expenditure surveys that capture monthly housing expenditures and total monthly income of the household. According to UN-Habitat, data is currently available for all OECD countries as well as for 200 cities covered in the UN Global Sample of Cities.[50]

435. Accurate capture of monthly housing expenditures and total monthly income is crucial to obtaining high-quality indicators. Where income or housing expenditure includes both monetary and in-kind sources (such as in-kind goods or services), the total may be understated if the in-kind sources are not adequately captured.

436. Income and expenditure surveys, the major data source for this indicator, are not conducted frequently. Sample size of the surveys may also be an issue when making sub-national assessments.

437. This indicator does not capture homelessness.

C. Rationale for disaggregating by migratory status

438. There is ample documentation that migrant populations do not fare as well as non-migrant populations in their housing conditions. Access to adequate housing can be challenging for many migrants, especially irregular migrants. Migrant populations often face challenges in accessibility and the security of tenure, owing to their vulnerable status as migrants.[51]

439. Migrant population may experience marginalization in the labour market and have difficulties in securing stable jobs with reasonable pay, often resulting in their being in a lower socio-economic status and subject to differential treatment by housing providers.[52] Some migrants without access to quality housing have reported being forced to live in informal dwellings, on construction sites or in overcrowded houses, or to rent beds by the hour.[53]

440. In the private housing market, discrimination often inhibits migrant population's access to adequate housing. Housing advertisements may explicitly indicate that certain groups of individuals are not desired as tenants; others may state preferences for nationals with permanent jobs.[54]

441. To ascertain that migrant populations are disproportionately housed in slums and informal settlements compared to non-migrant population, or tend to be in inadequate housing more than non-migrant population, it is necessary to disaggregate the two components of indicator 11.1.1 by migratory status. Two

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[50] Ibid.

[51] Report of the Special Rapporteur on the human rights of migrants, Jorge Bustamante. (HRC/14/30).

[52] Ontario Human Rights Commission, Policy on Human Rights and Rental Housing (2009), p. 19.

[53] Report of the Special Rapporteur on adequate housing, Mission to Spain (A/HRC/7/16/Add.2), para. 74; see also Mission to the United States of America (A/HRC/13/2/Add.4).

[54] Ibid. For details, see Committee on the Elimination of Racial Discrimination. Commission No. 18/2000, F.A. v. Norway, Decision on Admissibility adopted on 21 March 2001.

dichotomous proxy variables may be used to represent migratory status: (a) whether foreign-born or native-born, and (b) whether citizen or non-citizen. The choice of which proxy to use is usually dictated by what is available in the data source(s).

D. Indicator 11.1.1 disaggregated by migratory status: Methodology, sources of data and data issues

442. The two components of indicator 11.1.1 are calculated by migratory status following what is given in Section B. Each component is calculated separately for the city population that are foreign-born and the city population that are native-born.

(a1) Percentage of foreign-born (FB) city population living in slums/informal settlements households (% SISH(FB)):

$$\% \text{ SISH(FB)} = \frac{\text{Number of FB city population living in SISH households}}{\text{Total FB city population}} \times 100$$

(a2) Percentage of native-born (NB) city population living in slums/informal settlements households (% SISH(NB)):

$$\% \text{ SISH(NB)} = \frac{\text{Number of NB city population living in SISH households}}{\text{Total NB city population}} \times 100$$

(b1) Percentage of foreign-born (FB) city population living in inadequate housing households (% IHH(FB))

$$\% \text{ IHH(FB)} = \frac{\text{Number of FB city population living in IHH households}}{\text{Total FB city population}} \times 100$$

(b2) Percentage of foreign-born (NB) city population living in inadequate housing households (% IHH(NB))

$$\% \text{ IHH(NB)} = \frac{\text{Number of NB city population living in IHH households}}{\text{Total NB city population}} \times 100$$

443. If the data source collected data only on whether citizen or non-citizen, the above formulas can be altered to refer the city population that are citizens and city population that are non-citizens.

444. The data sources for indicators 11.1.1 (a1) and 11.1.1 (a2) are the national population and housing census and the household surveys already mentioned in Section B. For disaggregation by migratory status to be possible, the data sources must have information on the migrant status (as either foreign-born/native-born dichotomy or citizen/non-citizen dichotomy) of each individual or at least the head of household. Absent this information, disaggregation is not possible.

445. The data sources for indicators 11.1.1 (b1) and 11.1.1 (b2) national income and expenditure surveys that capture housing expenditures and total household expenditure. Disaggregation by migrant status (or its proxy) is possible only if information in migrant status (as either foreign-born/native-born dichotomy or citizen/non-citizen dichotomy) of the head of household can be obtained from the survey.

446. All data issues mentioned in Section B apply in this section as well. In addition, identification of migrant status may not be correct or honest, or may be missing. Where migrant populations constitute a small proportion in a city, the resulting indicators on migrant population could be subject to large sampling errors.

16.1.3 Proportion of population subjected to physical, psychological or sexual violence in the previous 12 months

[Custodian agency: UNODC]

A. Definition and concepts

447. This indicator is defined as the total number of persons who have been a victim of physical, psychological or sexual violence in the past 12 months, expressed as a percentage of the total population.

448. Each person who has been a victim of any one or more of the three types of violence during the past 12 months is counted once, regardless of the frequency of victimization over the reference period.

449. Definitions of physical violence, psychological violence and sexual violence[55] are given in the paragraphs that follow.

450. *Physical violence* is defined as the intentional or reckless application of physical force inflicted upon the body of a person. This includes serious and minor bodily injuries and serious and minor physical force.

451. Serious body injury, at minimum, includes gunshot or bullet wounds; knife or stab wounds; severed limbs; broken bones or teeth knocked out; internal injuries; being knocked unconscious; and other severe or critical injuries.

452. Serious physical force, at minimum, includes being shot; stabbed or cut; hit by an object; hit by a thrown object; poisoning; and other applications of force with the potential to cause serious bodily injury.

453. Minor bodily injury, at minimum, includes bruises, cuts, scratches, chipped teeth, swelling, black eye and other minor injuries.

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[55] Definitions according to the International Classification of Crime for Statistical Purposes (ICCS). http://www.unodc.org/documents/data-and-analysis/statistics/crime/ICCS/ICCS_English_2016_web.pdf

454. Minor physical force, at minimum, includes hitting, slapping, pushing, tripping, knocking down and other applications of force with the potential to cause minor bodily injury.

455. *Sexual violence* refers to unwanted sexual act, attempts to obtain sexual act, or contact or communication with unwanted sexual attention without valid consent or with consent as a result of intimidation, force, fraud, coercion, threat, deception, use of drugs or alcohol, or abuse of power or of a position of vulnerability. Sexual violence includes rape and other forma of sexual assault.

456. *Psychological violence.* There is as yet no consensus at the international level of the precise definition of psychological violence and there is as yet no generally well-established methodology to measure psychological violence.

B. Methodology, sources of data and data issues

457. The proportion of population subjected to physical, psychological or sexual violence (PPSV) in the previous 12 months, expressed as a percentage, is calculated using the following formula:

$$\text{Proportion} = \frac{\text{Total number of persons subjected to PPSV in past 12 months}}{\text{Total population}} \text{ x } 100$$

458. More specifically, when the data source is a survey, the formula is:

$$\text{Proportion} = \frac{\text{Number of survey respondents subjected to PPSV in past 12 months}}{\text{Total number of survey respondents}} \text{ x } 100$$

459. The main data source for this indicator is a nationally representative survey on crime victimization, which may be conducted by the national statistical office, the ministry of justice or another relevant ministry or office. In a crime victimization survey, typically one individual is randomly selected from among the members of the sample household. The selected individual is asked about any and all experience of physical, psychological and sexual violence in the last 12 months. This is done through a series of questions on concrete acts of violence suffered by the respondent.

460. Since psychological violence does not have an agreed definition, a practical option is to limit psychological violence to threatening behaviour, which does have an established methodology of measurement in victimization surveys.

461. Crime victimization surveys are useful means to capture experience of violence suffered by the adult population of both sexes. Countries that have not conducted a victimization survey may collect data from other household surveys by including a module on victimization. Both types of surveys, however, are usually restricted to populations living in households and above a certain age (for example 15 or 18 years old) and sometimes having an upper age limit (typically 65, 70 or 75 years of age).

462. Due to the complexity of collecting information on experience of violence, it is likely that not all experiences are duly covered by these surveys. There is also the

possibility of inaccurate or incomplete reporting of experiences of violence by the respondent. This could result in an underestimate of actual violence in the population.

463. In many countries, there are dedicated surveys on violence that focus on specific types of violence (domestic violence, sexual violence), selected population groups (typically women, children or the elderly) or in specific contexts (in the home, schools, prisons). Dedicated surveys like these are not able to portray levels and trends of violence in the entire population. However, they may be potentially useful as a supplementary data source so long as the limitations of their scope are taken into account and care is taken to prevent double-counting.

464. Many countries calculate separately the proportion of the population subjected to physical violence and the proportion subjected to sexual violence. When this is the case, obtaining the composite indicator 16.1.3 is not a simple addition of the two proportions. Where both types of violence occur to an individual and he or she is included in both of the calculated proportions, summing the resulting proportions would double-count that individual.

465. To prevent double-counting, persons subjected to physical, psychological or sexual violence should be identified from the survey and counted only once, even if he or she experienced more than one types of violence and more than one instance of violence in the past 12 months.

466. For countries that report physical violence and sexual violence separately, it is assumed that they have no report on psychological violence. Therefore the indicator is a composite of only two, not three, types of violence. Given the lack of agreement on the definition of psychological violence and the tentativeness of its suggested measurement, it is not clear to what extent this dimension is measured by countries.

C. Rationale for disaggregating by migratory status

467. Migrant population, especially new arrivals and irregular migrant population, may have marginalized status in their host country, given their limited command of the language and lack of knowledge of the laws and systems of the country. It is known that some migrants have been subjected to exploitation in the labour market and to discrimination in housing, health and other social services. They may also be disproportionately subject to physical, psychological and sexual violence in the host country compared to non-migrant population. Violence may come from co-migrants, earlier migrants or host country nationals.

468. To ascertain this, it is necessary to examine whether a disparity exists between migrant population and non-migrant population in the proportions of their population subjected to physical, psychological and sexual violence.

469. One particular group that has received worldwide attention is migrant women domestic workers. Migrant women domestic workers are vulnerable to various forms of violence, including domestic violence, sexual abuse and harassment, physical violence and psychological violence. However, indicator 16.1.3 as it currently stands does not include studying this group separately, which would require additional data sources.

D. Indicator 16.1.3 disaggregated by migratory status: Methodology, sources of data and data issues

470.   Disaggregation by migratory status is possible if survey respondents are asked their country of birth (or at the minimum, whether they were born abroad or in the country). If information on country of citizenship (or whether citizen or non-citizen) is included in the survey, this variable can also be used as a proxy for separating migrant population from non-migrant population.

471.   The formulas shown in Section B would be applied separately for the foreign-born population and the native-born population (or alternatively, for non-citizens and citizens).

472.   The sources of data and data issues are as detailed in Section B.

473.   In addition, the data sources being household surveys, sample size is always an issue when disaggregating, especially when the number of foreign-born population or foreign citizens in the sample is small.

16.2.2 Number of victims of human trafficking per 100,000 population, by sex, age and form of exploitation

[Custodian agency: UNODC]

474.   This indicator concerns a very specific group of migrants, namely victims of human trafficking. The indicator attempts to determine the extent of human trafficking in a country. Human trafficking is often difficult to detect and therefore challenging to measure[56].

475.   The disaggregation as recommended is helpful in examining the specific forms of exploitation that take place, as well as the specific subgroups of the population that are victims. No further disaggregation is suggested, although countries may choose to disaggregate by, for example, citizenship of victims (local or foreign) or geographic location of the exploitation.

476.   The most important work on this indicator is to improve on the methodology to allow better measurement of the levels and forms of human trafficking in each country where this activity takes place, be it as origin, destination or transit. For countries with sufficient capacity to detect, record and store data on victims of trafficking in persons, the Multiple Systems Estimation (MSE) methodology is a cost-effective way of measuring victimization. MSE is a variant of capture-recapture tailored for application on at least three lists of trafficking victims from different sources. For countries where the available data is insufficient for the application of MSE, specialized survey tools are being developed.

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[56] See metadata on this SDG indicator at
https://unstats.un.org/sdgs/metadata/files/Metadata-16-02-02.pdf

16.9.1 Proportion of children under 5 years of age whose births have been registered with a civil authority, by age

[Custodian agency: UNICEF]

A. Definition and concepts

477. Indicator 16.9.1 is defined as the proportion of children under 5 years of age whose births have been registered with a civil authority, by age.

478. *Registration of a birth with a civil authority* refers to the recording of a birth with the national civil authority tasked with the responsibility of civil registration. With birth registration, a certificate of birth is issued that may be required to prove and establish a person's legal identity and to realize his or her rights and entitlements at various stages of life.[57]

B. Methodology, data sources and data issues

479. The indicator "proportion of children under 5 years of age whose births have been registered with a civil authority" is relevant for countries with no reliable administrative data on births. For countries where the civil registration and vital statistics systems are ineffective or non-existent, this indicator, denoted as P and expressed as a percentage, is calculated as follows:

$$P = \frac{\text{No. of children} < 5 \text{ years old whose births are reported as having been registered with a civil authority}}{\text{Total no. of children} < 5 \text{ years old}} \text{ x } 100$$

480. In countries where the systematic recording of births remains a challenge, the above indicator is calculated from a population census if the census collects information on whether the birth of each enumerated child below 5 years of age has been registered with a civil authority.

481. Another source of data is a nationally representative household survey that collects data on birth registration. The Multiple Indicator Cluster Survey (MICS) and the Demographic and Health Survey (DHS) are examples of surveys that collect information on birth registration.

482. When calculating the indicator from a census, the numerator in the formula given above refers to the number of children under age 5 enumerated in the census whose births are reported as having been registered with a civil authority. The denominator refers to the total number of children under age 5 enumerated in the census.

483. If the indicator is calculated from survey data, the numerator refers to the number of children under age 5 in the sample survey whose births are reported as

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[57] United Nations (2014). *Principle and Recommendations for a Vital Statistics System*, Rev. 3. Statistical Papers, Series M no. 19/Rev.3

having been registered with a civil authority. The denominator refers to the total number of children under age 5 in the sample survey.

484. A shortcoming of the household survey as a source of data for this indicator is that the sample covers only households. Thus children who are part of non-household populations are not represented in the indicator. Furthermore, the sample size may not be large enough to allow reliable estimates of the indicator, especially when disaggregated by single years of age.

485. In the case of the population census as a data source, sample size is usually not a significant issue. In addition, some census attempt to include non-household populations to a certain extent. The disadvantage of the census as a source is the long interval between censuses, typically 10 years in low- and middle-income countries.

C. Rationale for disaggregating indicator 16.9.1 by migratory status

486. Migrant populations are more likely than non-migrant population to pay no attention to registering their children's births. This is particularly so in the case of irregular migrant population, who live with the fear of being detected and therefore avoid contact with any civil authority. However, even regular migrants can fail to register their child's birth, possibly from not comprehending the importance of birth registration or simply from being unaware or suspicious of the registration process.

487. In addition, marginalized migrant populations may be less likely to give birth in a hospital or maternity clinic, wherein the reporting of births to the local registrar is done by the institution, thereby relieving the mother of this task.

488. To ascertain whether migrant population are less likely to have the births of their children registered, it is necessary to calculate indicator 16.9.1 separately for migrant population and non-migrant population.

D. Indicator 16.9.1 disaggregated by migratory status: Methodology, data sources and data issues

489. Using as proxy foreign-born population and native-born population (or non-citizens and citizens), the indicator is calculated separately for following two subpopulations of children:

490. For foreign-born children (FB), the percentage whose births have been registered with a civil authority is:

$$P(FB) = \frac{\text{No. of FB children} < 5 \text{ years old whose births are reported as having been registered with a civil authority}}{\text{Total no. of FB children} < 5 \text{ years old}} \text{ x } 100$$

491. For native-born children (NB), it is:

$$P(NB) = \frac{\text{No. of NB children} < 5 \text{ years old whose births are reported as having been registered with a civil authority}}{\text{Total no. of NB children} < 5 \text{ years old}} \text{ x } 100$$

492. Data sources are the same as stated in section B. An important caveat regarding disaggregation of indicator 16.9.1 by migratory status should be noted. For the calculation of P(FB) and P(NB) to be possible, the survey must have information on each respondent's (in this case, the mother's) country of birth; at the minimum, it should be possible to determine whether she is foreign-born or native-born. Population censuses often include this information.

493. If there is information on the country of citizenship of the mother but not of the country of birth, the indicator can be calculated for citizens and non-citizens separately.

494. If both parents' migratory status is available in the data source, an option would be to obtain both parents' migratory status and consider a "mixed status" as non-migratory for the purpose of this indicator. That is, if a child has one foreign-born parent and one native-born parent, he or she may be considered as having been born to a native-born person. This reasoning stems from the assumption that decisions or actions like birth registration more likely falls on the native-born parent by virtue of his or her better familiarity with the necessities related to the welfare of the child.

Chapter V

Summary

A. Additional information to be included in current data collection systems

495. To monitor migration-relevant SDG indicators, it is essential to have migration information in the various data sources. The most basic and widely used piece of information to distinguish migrant population from non-migrant population is country of birth. While not corresponding to the definition of international migrant, being foreign born is a simple and easy proxy. In most countries, this information is already collected in population and housing censuses. It will be beneficial to also include information on country of birth in national household surveys and administrative sources that provide data for SDGs.

496. Countries are interested in the living conditions and progress of international migrant population living in their territory, be it in employment, education, health, housing or other social aspects. These are all areas covered by the SDGs. Furthermore, there is often strong interest in comparing new migrants to longstanding ones, first generation migrants to second generation migrants, etc. In order to study these more detailed subgroups, information on duration of stay in the country and country of birth of parents will need to be collected as well. Some population censuses already include these questions. Depending on the policy interest in a country, these questions may be added to the census.

497. However, asking these detailed questions in a nationally representative household survey may not be practical, especially if neither the sample size nor the foreign-born population is particularly large. There may not be a sufficient number of persons in each migrant category to yield statistically reliable results.

498. Introducing the same detailed items into an administrative source would be a big advantage for studying migrant/non-migrant differential. However, administrative records serve their own specific need and function. National statistical offices are typically not in a position to influence its modes of operation.

499. A useful item to add to current data collection systems is a unique identifier for each person that is common to all. Using this identifier, all information about a person collected in different systems can potentially be linked together. When this is done, ensuring confidentiality and protecting the privacy of individuals must be strictly followed.

B. Good practices on the use of multiple sources

500. When combining data from multiple sources, it is important to ascertain that the concepts and definitions used by the various sources are consistent. The universe of each source, as well as the time reference of the data, should also be ascertained. Data should be adjusted or aligned to one common period when possible before they are combined.

501. When a common identifier unique to each person is available across sources, those sources can be linked or matched to create a consolidated set of variables for each person. If one of the sources contains data on migratory status, the consolidated data set may then allow the disaggregation of migrant and socio-economic characteristics by migratory status.

502. A problem with using multiple sources is the risk of multiple counting. It is important to find out clearly the inclusion criteria of each source and to carefully filter the data in order to minimize multiple counting.