Lesson 2: Indicator Framework to Measure Poverty

2.1 Welcome



Notes:

This Lesson introduces various indicators related to poverty.

First, the overall concept from domain to indicators is introduced. Next, metadata is highlighted. After, the non-monetary deprivations are explained, benefits, methodology and issues of aggregation and disaggregation are elaborated.

2.2 From Domains to Indicators



Notes:

For each individual domain, there has to be a process of moving from the broad field to a specific indicator or set of indicators. This involves a series of key steps in the slide.

In the respect of 1, weight should be attached to the principle that the indicator be transparent and identify the essence of the problem and the principle that it has a clear normative interpretation.

The exploration of 2 involves both multitopic household surveys with global or multiregional coverage and national sources.

The cutoff of 4 is the poverty cutoff, the proportion of weighted deprivations a person needs to experience in order to be considered multidimensionally poor.

2.3 Role of High Quality Poverty Statistics



Notes:

Disaggregation is necessary for identifying population groups that face higher risk of poverty, based inter alia on personal characteristics, family structure, place of residence, etc. It also requires dynamic measures that can monitor poverty over time and identify those trapped in poverty for longer periods. High quality poverty statistics are therefore needed to monitor and evaluate outcomes—especially the effectiveness of policy, programming and project interventions focusing on poor people.

2.4 Indicator Compilation



Notes:

This slide shows the fundamental flow of indicator compilation.

Firstly, data should be captured through census, sample surveys, administrative data, and so force.

Next, those data are cleaned and arranged. Aggregation is implemented for tables necessary for indicators.

Last, indicators are compiled along with setting poverty lines with those tables.

2.5 Conceptual Metadata

	Poverty Statistics for SDGs
Conceptual Metadata	
 Unit of observation Unit of analysis Population covered Definition of welfare measure, including informative deviation from the main international standards Equivalence scale used Type of poverty line: Absolute or relative Methodology for calculating poverty line Reference period: Period of time or point in time measured observation is intended to refer Unit of measure: Unit in which the data values in the main which the data values in the main which the data values in the measured observation is intended to refer 	tion on any e to which the s measured.
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Notes:

Metadata are important for helping users understand the extent to which figures are comparable across countries and over time.

In general, unit of observation is household while unit of analysis is individual. Population covered is, for example, private households. Equivalence scale used is like square-root scale.

Unit in which the data values are measured means headcount ratio, percentage of population, etc.

2.6 Methodological Metadata

Poverty Statistics for SDGs
Methodological Metadata
Data provide
Organization that produced the data
Source data
Characteristics and components of the raw data used for compiling statistical aggregates and any other relevant characteristics
Contact information
Individual or organizational focal points for the data, including information on how to reach them
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Notes:

Metadata is also important for methodology.

Characteristics and components of the raw data used for compiling statistical aggregates are type of primary source such as survey, census and registry. One of any other relevant characteristics is sample size for survey data. Specific contact information is website, mail address, phone, email, etc.

2.7 Quality Metadata



Notes:

Quality of indicator should be explained as metadata.

As for comparability, explanations should be provided where differences between statistics can be attributed to differences between the true values of statistical characteristics. Comparability issues can be broken down into geographical differences and temporal differences. Geographic differences are the degrees of comparability between statistics measuring the same phenomenon for different geographical areas. Temporal differences are the degrees of comparability between two or more instances of data on the same phenomenon in the same country measured at different points in time.

Periodicity is systematic release of statistics: annual release, release every five years, etc.

Timelines means number of months after income or expenditure reference period.

Accuracy is closeness of computations or estimates to the exact or true

values that the statistics are intended to measure. This includes bias and variance. This may be described in terms of major sources of error such as coverage, sampling, non-response or measure of accuracy.

2.8 Data Priority



Notes:

The slide shows data priority.

Most priorities are concerning improvement of surveys.

2.9 Evolution of Poverty Measurement



Notes:

Since the 19th century different approaches to the measurement of poverty have evolved as a basis for international and comparative work. They can be broadly distinguished by their focus on physical subsistence, basic needs, and relative deprivation. More recent developments try to extend dimensions of welfare including wealth or time or combine multiple aspects of poverty into one single measure.

2.10 Measurement Issues



Notes:

Poverty statistics should in theory cover all of the population of interest. However, when measuring poverty through poverty surveys it should be recognized that certain categories of people who may be likely to be poor are frequently omitted from the sampling frame since they do not live in households. This is of particular concern for the hard-to-reach groups such as homeless people and people in institutions including elderly care homes, children's homes, and mental health institutions.

Disaggregation is necessary to provide a detailed picture of certain population groups. This is a key aspect of Agenda 2030's aspirations "to leave no one behind". Most often, disaggregation entails survey design to allow for the collection and analysis of data concerning age, sex, education level, occupation, and place of residence. Disaggregation by employment and health status, and ethnicity can also be of key importance.

When monetary measures are used, the choice of equivalence scale can be decisive. Such a scale is commonly used to adjust household resources in

order to take into account shared consumption, housing and specific needs. Economies of scale arise, for example, by sharing expenditures on housing, utilities, car or newspapers. Apart from household size, the age or gender of household members may also influence the amount of income or consumption needed to attain a certain level of well-being. Measures of the incidence of poverty among children and the elderly are particularly affected by the choice of equivalence scale.

It is important to measure poverty from a longitudinal perspective. Knowing the length of time that a household has been poor is crucial for understanding the short- and long-term impact of poverty. Although short spells of poverty are always unwelcome, they may not threaten subsistence or significantly damage life prospects if individuals and households can reduce expenditure, run down savings or borrow. However, these tactics are unlikely to be sufficient in the long run. Only by using longitudinal data one can understand the processes behind cross-sectional statistics: the events leading individuals into and out of poverty, and the associated impact on their living standards. Longitudinal poverty analysis can also identify ways in and out of poverty, which can help policymakers adopt better safety nets or other inclusion policies.

Discrepancies between international and national databases often result from differences in the ways in which the associated indicators are defined and reported. Complications in measuring inequality result from the fact that the most common international databases that show income distribution data for the countries of the region often present data that differ from what can be found on the public websites of the national statistical offices in the region.

Multiple approaches have emerged in response to the need to measure nonmonetary poverty. Broadly speaking, these can be divided into two groups. The first consists of dashboards of carefully defined and validated social indicators, which present each indicator separately and unidimensionally. Taken together, these measures can offer empirical insights into the different aspects of poverty considered one by one; they can also draw on different datasets. The second group consists of Multidimensional Poverty Indices (MPIs), which combine individual deprivation indices that contain deprivation thresholds into aggregated, composite measures. In the case of multidimensional poverty, the identification of who is poor according to one or several poverty thresholds is usually based on the joint distribution of individual or household deprivations, and often uses a counting approach.

Poverty Statistics for SDGs Measuring Non-Monetary Deprivations Poverty Indicators housing health implieu between the services

2.11 Measuring Non-Monetary Deprivations

Notes:

Measuring non-monetary deprivations including housing, health, education are important as well as monetary deprivations.

This slide shows non-monetary aspects of poverty. Reducing such deprivations is essential to meeting the SDGs. Measuring non-monetary deprivations is part of poverty measurement because the SDGs clearly regard poverty as multidimensional. The SDGs focus on reducing poverty "in all its forms and dimensions". Some national and regional policies already address non-monetary deprivations in such areas as housing, health, education, and other services.

2.12 Comparable Dashboards



Notes:

A poverty dashboard shows levels of deprivation in different dimensions, presenting each of them using just one indicator. It is desirable for dashboards to have a clear hierarchy and set of priorities, and potentially to even name a small set of 5-10 indicators as tier 1 or key indicators. There are five criteria for internationally comparable indicators of deprivation in social inclusion.

2.13 Dimensions of Dashboard



Notes:

The slides shows typical dimensions of dashboard. Most factors influence on poverty are included.



2.14 Steps for Measuring a Multidimensional Poverty Index

Notes:

The slide shows steps for Measuring a Multidimensional Poverty Index.

Unit of identification in Step 0 is household or individual, etc. In Step 1 indicators are years of schooling, housing, decent work, health status, and so on. Deprivation cut-off in Step 2 means, for example, deprived if years of schooling less than national compulsory level for each age cohort. Step 3 is to find out whether or not each person or household in deprived in each indicator. As shown in Step 4, each indicator will have a relative weight, and these weights generally sum up to one (100%). Step 5 means adding up the weights of all of the indicators in which people are deprived. In Step 6, if x% is determined as poverty cut-off, an individual is identified as multidimensionally poor if the deprivation score is equal or larger than x%. Step 7 is the proportion of the population who are poor. Step 8 is calculated by adding up the deprivation scores of all poor persons and dividing by total number of people. Step 9 is the product of the headcount ratio of Step 7 and the intensity of poverty of Step 8.

Aggregation and Disaggregation

2.15 Aggregation and Disaggregation

Notes:

In order to compile indicators for SDGs individual data from data sources are aggregated. As explained earlier, disaggregation is necessary to provide a detailed picture of certain population groups. Given the importance of disaggregation, it is recommended to disaggregate poverty indicators whenever possible. As a minimum, the poverty indicators should be disaggregated by age , sex, employment status, household type, disability status and urban or rural population.

2.16 Aggregation

	Poverty Statistics for SDGs
Aggregation	
individual data:	p_i : number of people e_i : number of people below the line
indicator:	$I = \frac{e_1}{p_1} + \frac{e_2}{p_2} + \dots + \frac{e_n}{p_n}$
indicator:	$I = \frac{e_1 + e_2 + \dots + e_n}{p_1 + p_2 + \dots + p_n}$
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Notes:

This is the arithmetic formula for indicators from individual data. Ratio of the people below the line is the number of people below the line divided by the number of people. The indicator is not summing ratios but calculating ratio of summed numerator and summed denominator.

2.17 Overarching Principle of Data Disaggregation

	Poverty Statistics for SDGs
Overarching Principle of Data Disaggregation	
 Sustainable Development Goal indicators sh disaggregated, where relevant, by income, so race, ethnicity, migratory status, disability an geographic location, or other characteristics accordance with the Fundamental Principles Statistics. (General Assembly resolution 68/261) 	nould be sex, age, nd , in s of Official
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Notes:

Disaggregation is important for SDG indicators in the General Assembly resolution.

2.18 Reasons of Disaggregation



Notes:

There are some reasons for disaggregation from the view of poverty.

Since the overall indicator came from consolidation of various factors, it may cover substantial variations by different factors.

2.19 Reasons of Disaggregation (Continued)



Notes:

As an example of targeting policy interventions effectively, high levels of poverty among retired people will likely require different policies than those targeted at reducing poverty among children.

2.20 Reasons of Disaggregation (Continued)

	Poverty Statistics for SDGs
Reasons of Disaggregation (Continued)	
Monitoring disaggregated indicators can help ensure that no-one is left behind as countries make progress towards reducing poverty.	
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Notes:

"Leaving no one behind" will be attained by focusing on variations by small groups.

2.21 Reasons of Disaggregation (Continued)

	Poverty Statistics for SD	Gs
Reason	s of Disaggregation (Continued)	
	Some research on MDG achievement found that most progress in poverty reduction was made amongst those easiest to reach, or in situations easiest to address—leaving many of the poorest and most vulnerable behind.	
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Notes:

A lot of those who can reach their goals may cover the others who find difficulties and will be left behind.

2.22 Cautions of Disaggregation



Notes:

Producing disaggregated data requires larger survey samples, and may also require more complex sample designs especially where certain subgroups make up a small proportion of the overall population.

As an example that some disaggregation need to be interpreted with caution, the material needs of people with disabilities are often greater, due to both additional costs as a result of goods and services needed due their disability as well as higher costs for some other items compared with individuals without disabilities.

Further disaggregation from policy relevance is the followings. The child population could be disaggregated into smaller age groups as there are often significant differences in poverty rates between these age groups. Different rationale can be applied to this, for example related to policy objectives such as pre-school; school age; secondary school; or age groups.

2.23 Dimensions of Disaggregation

	Poverty Statistics for SDG	
Dimensions of Disa	aggregation	
income	sex	age
race	ethnicity	migration status
disability	geographical location	other characteristics relevant in national context
	additional dimensions mentioned in targets and indicator	

Notes:

Disaggregation is implemented based on a dimension. The slide shows some examples of dimensions. Please note that dimensions of disaggregation are different from dimensions of dashboard.



2.24 Disaggregation Dimension and Category

Notes:

Category is the different characteristics such as male or female for the dimension sex.

Another example of dimension is employment status whose categories are employed, unemployed, retired, other outside the labour force. Urban/rural is also a significant dimension and composed of the categories: predominantly urban region, intermediate region and predominantly rural region.

2.25 Scope of Data Disaggregation



Notes:

Data disaggregation need sufficient data. In case dimensions are 84, 25000 time series data should be arranged.

2.26 Recommendations and Findings



Notes:

As for the time series necessity, if no global aggregate is required, categories do not necessarily be harmonized across countries.

Do not change categories if an internationally established breakdown already exists to harmonize across SDG indicators.

2.27 Areas of Conflict



Notes:

Categories are required based on policy or public needs. Although needs exist for disaggregation of data, data may not be available or standards may not be specified. Although standards are arranged, data might not be captured in practice. In these ways, there are trade-offs among categories, data availability and standards.



2.28 Recommended Disaggregation by UNECE

Notes:

This is an example of recommended disaggregation by UNECE. Dimensions of age, employment status, household type and urban or rural are recommended.

2.29 Example

				Poverty Stat	istics for SD
Exampl	e				
	Age	0-14	15-64	65+	
0000	Population	100	300	100	
2000	Population below poverty line	20	30	20	
2010	Population	80	310	120	
2010	Population below poverty line	30	30	10	
			50	10	

Notes:

This is a model example of disaggregation by age group. Both population and population below the poverty line are divided into three categories: younger than 15 years old, 15-64 and 65 years or over in the year 2000 and 2010.

2.30 Total Indicator



Notes:

The indicators on poverty for total population were almost the same: 0.14 in 2000 and 0.14 in 2010.

2.31 Disaggregated Indicator



Notes:

This slide shows the change of the indicators in the three categories from 2000 to 2010. For 0-14 the indicators rose from 0.20 in 2000 to 0.38 in 2010. For 15-64 they were almost the same: 0.10 in 2000 and 2010. For 65 or over they fell from 0.20 in 2000 to 0.08 in 2010. Trends are different among the age categories. In these ways, disaggregation informs one new trend or situation.

2.32 Equivalence Scale



Notes:

Unit of most of the surveys is household while the target of the poverty information is individual. The most common methodology to capture individual information is dividing the result for a household by number of members of the household. The slide showed an example. As explained before, the methodology is called equivalence scale but includes some issues. If, in a two-person household, one person consumes \$1.80 and the other consumes \$2.20, then the household as a whole has consumption per person above \$1.90, thus missing the person who is actually below.

2.33 Inequality within Households



Notes:

In practice, it is not easy to observe individual consumption within the household. Pursuit of this research is indeed promising as a route to learn more about inequality within the household, but it is likely to be some time before the results can be applied to poverty measurement on a regular basis, and the presentation of the method would need to be transparent.

2.34 Absence of Relevant Disaggregation



Notes:

Lack of data sources often circumvent disaggregation. The slide shows main those four factors.

2.35 Comparable Welfare Aggregates



Notes:

Material well-being is estimated with the way, cost and function for a person.

In economic theory, any welfare measure should include all of the factors including health, leisure, social capital, and other desiderate that contribute to welfare.

2.36 Use of Administrative Data: Example in Canada



Notes:

Some specific issues related to data will be introduced from this slide.

Using administrative data has not been prevailed in the world.

This is an example in Canada where tax credit for some people are used.

2.37 Income Aggregation



Notes:

The components of income can be aggregated in a hierarchy to produce selected measures of income for particular analytical purposes. Total and disposable income are the main income aggregates produced.

The sum of income from employment and income from household production of services for own consumption is referred to as income from production. Income from employment is useful for analysis of the relationship between employment status and income, while income from production reflects all income from productive activities.

The sum of income from production and property income is called primary income. This is consistent with the 2008 SNA definition.

The balance of primary incomes of the household sector, as defined by the SNA, is the total value of production and property income receivable less property income payable i.e. spending on interest charges, rents and other property income. It also includes income from housing services of owner-

occupiers. It is used for analysis of the income available for secondary distribution.

Total income is the sum of primary income and transfer income. The inclusion of both employer and private contributions to social security schemes and benefits from these schemes will lead to double counting when this measure is aggregated across groups. The inclusion of inter-household transfers such as family support payments will also have this effect.



2.38 Food Prepared Away from Home

Notes:

Food prepared away from home should be taken care if they are consumed outside or received in-kind. They should be estimated in financial values and considered for indicator compilation.

2.39 Theoretical Framework



Notes:

Some expenses for services such as housing cannot gained easily. They have to be measured through theoretical framework including acquisition approach, rental equivalence or user cost.

2.40 Summary of Lesson 2



2.41 No Poverty

