Regional Training Workshop on Human Settlement Indicators for Arab States

Indicator 11.1.1 Adequate housing and slum upgrading

3-5 July 2018
Cairo, Egypt
By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums.

Proportion of urban population living in slums, informal settlements or inadequate housing.
Tier Classification

• Tier I

• Integrates the elements of MDG 7 Target 7D with the SDGs broader spectrum of housing informality and inadequacy.

Many countries ready to report on the progress
Some Points/Facts on Slums and Inadequate Housing

• Slums represent one of the most extreme forms of deprivation and exclusion
  • Critical factor for the persistence of poverty and exclusion in the world

• Not all people who live in inadequate housing live in slums but are nonetheless living in very substandard conditions in the urban contexts in which they are situated.
Some Facts on Slums and Inadequate Housing

- 39% (2000) - 30% (2014) decrease of urban population living in slums
- 2.4B people worldwide live without improved sanitation.
- 2B are affected by water stress
- Female headed and children headed households are often most vulnerable to inadequate housing conditions
- 1/4 of world’s urban population is estimated to live in slums or slum-like conditions
- 100M people worldwide are homeless
Concepts for Indicator 11.1.1

- NO improved drinking water
- NO improved sanitation facilities
- NO sufficient living area
- NO housing durability
- NO security of tenure

- Lack, or cut off from, formal basic services
- Inhabitants have no security of tenure
- Housing may not comply with current planning and building regulations.

- Legal security of tenure
- Availability of services, materials, facilities and infrastructure
- Affordability
- Habitability
- Accessibility
- Location
- Cultural adequacy
## Criteria for Defining Slums and Informal Settlements

### Criteria defining slums, informal settlements and Inadequate Housing

<table>
<thead>
<tr>
<th></th>
<th>Slums</th>
<th>Informal Settlements</th>
<th>Inadequate Housing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access to water</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Access to sanitation</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Sufficient living area, overcrowding</td>
<td>X</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Structural quality, durability and location</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Security of tenure</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Affordability</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Accessibility</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Cultural adequacy</td>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>
Slums and Informal Settlements

• Most of the criteria for defining slums, informal settlements and inadequate housing overlap.
• The 3 criteria of informal settlements are essentially captured in the definition of slums, which sustains the combination of both (slums/informal settlements).
• Both aspects of slums and informal settlements are therefore combined into one component of the indicator
  • Continuity with what was captured under MDG 7.
• Composite index to incorporate all measures into one estimate
Inadequate Housing

• From the 7 criteria of adequate housing, 3 are not covered by slums / informal settlements: housing affordability, accessibility and cultural adequacy.
• However, affordability is the most relevant and easier to measure.
• Housing affordability is not only a key housing adequacy criterion, but is a suitable means of measuring inadequate housing in a more encompassing manner.
Slum/Informal Settlements Components for 11.1.1

Lack of:

1. Security of tenure
2. Access to improved water
3. Access to improved sanitation
4. Sufficient living area
5. Quality/durability of structure

UN-Habitat
| **Security of Tenure:** | Formal title deeds to both land and residence.  
Formal title deeds to either one of land or residence.  
Agreements or any document as a proof of a tenure arrangement. |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Improved water:</strong></td>
<td>Protected from outside contamination (faecal matters): piped water into dwelling, public tap/stand pipe serving no more than 5 households, protected spring, rainwater collection, bottled water, bore hole, protected dug well.</td>
</tr>
</tbody>
</table>
| **Improved sanitation:**| The excreta disposal system is considered adequate if it is private or shared by a maximum of two households.  
- public sewer;  
- septic tank or pit;  
- pour-flush latrine;  
- Ventilated improved pit latrine.  
- Pit latrine with slab/covers the pit entirely, composting toilets/latrines |
| **Structural quality/durability of Housing and location:** | NOT BUILT or RESIDING on or near a hazardous site. The following locations should be considered:  
- housing in geologically hazardous zones (landslide/earthquake and flood areas);  
- housing on or under garbage mountains;  
- housing around high-industrial pollution areas;  
- housing around other unprotected high-risk zones (e.g. railroads, airports, energy transmission lines).  
NOT in temporary and/or dilapidated structures. The following factors should be considered when placing a housing unit in these categories:  
- quality of construction (e.g. materials used for wall, floor and roof);  
- compliance with local building codes, standards and bylaws. |
| **Sufficient living area / Overcrowding:** | Not more than three persons per habitable room (minimum of 4 m² in area). |
Slum Households/Informal settlements
Component for Inadequate Housing for 11.1.1

► **Affordability**: A house is considered affordable if the household’s expenditure on housing alone does not exceed 30% of the total net monthly income of the household.
Methodology: Data Sources & Software

Demographic and Health Surveys (DHS) & Multiple Indicator Cluster Survey (MICS)  
National Population & Housing Census

Software
► SPSS Version 12 onwards
► Stata Version 10 onwards
► R+
Step 1: Collect all Primary Data

- Collect all primary data sources for the country. Household survey data are preferred whenever they are available and on condition that they have the relevant variables for computing this component.
- DHS, MICS or other national household based surveys or census are preferred.
- Example:

```
Name          Date modified     Type                  Size
_census_13022013  2/12/2013 11:38 PM  SPSS Statistics Data Document  398,642 KB
_01_census_households  2/12/2013 1:23 AM  SPSS Statistics Data Document  96,300 KB
```
Step 2 : Review and assess available data

• Review and assess the complete sets of available data at the national level with all relevant variables.
  • Vary over years which would allow you to compute trends in your analysis.

• Examine each dataset for existence of all relevant variables for computing this indicator such as access to sanitation, water, security of tenure, housing durability, etc.
Step 3: Select Appropriate Region

- Examine and select the correct household population that you need to analyse.
- This can be broken down by regions, urban-rural or even by cities using the respective variable of interest.
- These can be either at
  - City
  - Urban
  - Rural
- National Urban or Rural Aggregates
Step 4: Apply Relevant Analysis Program to generate tables with relevant disaggregation.

Example of Floor Materials

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Width</th>
<th>Decimals</th>
<th>Label</th>
</tr>
</thead>
<tbody>
<tr>
<td>20  kitchen</td>
<td>Numeric</td>
<td>2</td>
<td>0</td>
<td>Kitchen or cooking facilities</td>
</tr>
<tr>
<td>21  toilet</td>
<td>Numeric</td>
<td>2</td>
<td>0</td>
<td>Toilet</td>
</tr>
<tr>
<td>22  floor</td>
<td>Numeric</td>
<td>3</td>
<td>0</td>
<td>Floor material</td>
</tr>
<tr>
<td>23  ncouplss</td>
<td>Numeric</td>
<td>1</td>
<td>0</td>
<td>Number of married couples in household</td>
</tr>
<tr>
<td>24  ec01a_dwnum</td>
<td>Numeric</td>
<td>7</td>
<td>0</td>
<td>Dwelling number</td>
</tr>
<tr>
<td>25  ec01a_hhnum</td>
<td>Numeric</td>
<td>1</td>
<td>0</td>
<td>Household number</td>
</tr>
<tr>
<td>26  ec01a_pern</td>
<td>Numeric</td>
<td>2</td>
<td>0</td>
<td>Person number</td>
</tr>
<tr>
<td>27  ec01a_hhn</td>
<td>Numeric</td>
<td>1</td>
<td>0</td>
<td>Number of households</td>
</tr>
<tr>
<td>28  ec01a_pern</td>
<td>Numeric</td>
<td>2</td>
<td>0</td>
<td>Number of persons in dwelling</td>
</tr>
<tr>
<td>29  ec01a_pern</td>
<td>Numeric</td>
<td>2</td>
<td>0</td>
<td>Number of persons in household</td>
</tr>
<tr>
<td>30  ec01a_fbign</td>
<td>Numeric</td>
<td>1</td>
<td>0</td>
<td>Household created by splitting apart a large dwelling</td>
</tr>
<tr>
<td>31  ec01a_mign</td>
<td>Numeric</td>
<td>1</td>
<td>0</td>
<td>Number of migrant records in the input data file (for entire)</td>
</tr>
<tr>
<td>32  ec01a_prov</td>
<td>Numeric</td>
<td>2</td>
<td>0</td>
<td>Province</td>
</tr>
<tr>
<td>33  ec01a_dwtype</td>
<td>Numeric</td>
<td>2</td>
<td>0</td>
<td>Type of dwelling</td>
</tr>
<tr>
<td>34  ec01a_vacc</td>
<td>Numeric</td>
<td>1</td>
<td>0</td>
<td>Occupation status of the dwelling</td>
</tr>
</tbody>
</table>
Review the response categories for the questions on housing durability

Where possible the various responses categories are grouped and interpreted according to the definitions for slums (Not all surveys or census data use the same categories to define durable housing using floor material).
Various responses on adequate floor materials
Applying syntax to generate frequency tables

To create the new indicator, we have to group the question responses into two categories using the following syntax

```plaintext
/******************************/
fre EC10A_FLOOR.

recode EC10A_FLOOR (1,3,4=1)(else=0) into floor1.
var lab floor1 "durable house".
val lab floor1 1 "Improved Housing" 0 "Unimproved Housing".
```

This should be done for the response categories for the questions on access to improved water, improved sanitation, sufficient living area, improved housing and lack of security of tenure for slums.
The syntax will also tabulate the frequencies into tables as shown below.

### DURABLE HOUSING

#### Original Indicator

<table>
<thead>
<tr>
<th>EC10A_FLOOR Predominant materials of the floor</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 Fitted-groove wood, parquet, boards, or finished wood</td>
<td>738630</td>
<td>16.1</td>
<td>16.1</td>
<td>16.1</td>
</tr>
<tr>
<td>2 Unfinished boards</td>
<td>356370</td>
<td>7.8</td>
<td>7.8</td>
<td>23.9</td>
</tr>
<tr>
<td>3 Ceramic, tile, vinyl, or marble</td>
<td>1692950</td>
<td>36.9</td>
<td>36.9</td>
<td>60.8</td>
</tr>
<tr>
<td>4 Brick or cement</td>
<td>1596820</td>
<td>34.8</td>
<td>34.8</td>
<td>95.5</td>
</tr>
<tr>
<td>5 Cane</td>
<td>10580</td>
<td>.2</td>
<td>.2</td>
<td>95.8</td>
</tr>
<tr>
<td>6 Dirt</td>
<td>137370</td>
<td>3.0</td>
<td>3.0</td>
<td>98.8</td>
</tr>
<tr>
<td>7 Other materials</td>
<td>40010</td>
<td>.9</td>
<td>.9</td>
<td>99.6</td>
</tr>
<tr>
<td>9 NIU (not in universe)</td>
<td>16460</td>
<td>.4</td>
<td>.4</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>4589190</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

#### New Indicator

<table>
<thead>
<tr>
<th>floor1 durable house</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valid</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>.00 Unimproved Housing</td>
<td>560790</td>
<td>12.2</td>
<td>12.2</td>
<td>12.2</td>
</tr>
<tr>
<td>1.00 Improved Housing</td>
<td>4028400</td>
<td>87.8</td>
<td>87.8</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>4589190</td>
<td>100.0</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>
Step 5: Repeat ‘step four’ for all the elements of slums and obtain the respective new tables.

- The new indicators should be coded as follows.

<table>
<thead>
<tr>
<th>New variable</th>
<th>Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water1 =</td>
<td>1: Improved water</td>
</tr>
<tr>
<td></td>
<td>2: Unimproved water</td>
</tr>
<tr>
<td>Toilet1 =</td>
<td>1: Improved sanitation</td>
</tr>
<tr>
<td></td>
<td>2: Unimproved sanitation</td>
</tr>
<tr>
<td>Living1 =</td>
<td>1: Sufficient Living Area</td>
</tr>
<tr>
<td></td>
<td>2: Overcrowding</td>
</tr>
<tr>
<td>Floor1=</td>
<td>1: Durable Housing</td>
</tr>
<tr>
<td></td>
<td>2: Non-Durable Housing</td>
</tr>
<tr>
<td>Secure1=</td>
<td>1: Secure Tenure</td>
</tr>
<tr>
<td></td>
<td>2: Unsecure Tenure</td>
</tr>
</tbody>
</table>
Step 6: Using the new variables with focus only on urban households, identified in ‘Step 4’, we compute the slum household by the respective deprivation

- **Shelter Deprivation** measures the number of components a household does not have i.e.:
  - **1: One Shelter Deprivation** - household has 4 components and is only missing 1 other component.
  - **2: Two Shelter Deprivation** - household has 3 components and is missing 2 other components.
  - **3: Three Shelter Deprivation** - household has 2 components and is missing 3 other components.
  - **4: Four Shelter Deprivation** - household has 1 component and is missing 4 other components.
  - **5: Five Shelter Deprivation** - household has NONE of the required components
Shelter Deprivation

• Slum =
One Shelter Deprivation + Two Shelter Deprivation +
Three Shelter Deprivation + Four Shelter Deprivation
+ Five Shelter Deprivation

recode class (0=0) (1 thru 4=1) (5 thru 10=2) (11 thru 14=3) (15=4) into classgrp.
var lab classgrp "Slum stratification grouped".
val lab classgrp
  0 "Non-slum household"
  1 "One shelter deprivation"
  2 "Two shelter deprivations"
  3 "Three shelter deprivations"
  4 "Four shelter deprivations".

recode classgrp (0=0)(1,2,3,4=1) into slumthre.
var lab slumthre "Slum".
val lab slumthre 0"Non-slum" 1"Slum".
Shelter Deprivation

• Steps help determine the proportion of slum/informal settlements households in urban areas or cities in a given country.

• Proportion of **urban population** living in slums/informal settlements
  
  • Computed using the total urban/city population and the number of people living in these SISH households.
Part B: Computation of Inadequate Housing Households

However, housing adequacy is measured by the affordability criterion only.

► Affordability: A house is considered affordable if the household’s expenditure on housing alone does not exceed 30% of the total monthly income of the household.

\[
\text{Inadequate housing households (IHH)} = 100 \left[ \frac{\text{Number of people living in IHH}}{\text{City population}} \right]
\]

\[
\text{Inadequate housing households (IHH)} = 100 \left[ \frac{X}{Y} \right]
\]

\[
\text{Inadequate housing households (IHH)} = Z \%
\]
Monitoring and reporting Process

- **Data Collection**
- **National Statistical Agencies**
- **Capacity Development**
- **Data Release**

Regular intervals of 3-5 years, allowing for three-five year reporting points until 2030.
Challenges

• Lack of appropriate tools
  • Many global data collection exercises, including censuses, do not track populations living in places identified as slums
  • Most surveys, that use sampling frames taken from censuses are unable to distinguish between slum and non-slum clusters in urban areas.

• Data management capacities

• Lack of routine data on security of tenure
Thank You

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