Measuring poverty indicators (SDG 1)

Experience of the National Bureau of Statistics of the Republic of Moldova

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CONTENT:

- Nationalized SDGs indicators
- Absolute poverty rate
- National Multidimensional Poverty Index (MPI)
- Poverty mapping in Moldova
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NATIONALIZED
SDGs indicators
Landing Goal 1 in Moldova context:

- All 5 targets are relevant for Moldova
- Only 2 targets (SDG 1.2 and 1.5) are partially aligned global agenda
- SDG target 1.4 significantly changed in nationalized version
- Currently there is no strategy and institution responsible for poverty reduction
- However, SDG 1.1 and SDG 1.2 on extreme and multidimensional poverty are considered to be of high priority and need to be integrated in the National Development Strategy of Moldova
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**Nationalized targets**

**TARGET 1.1**
- ERADICATE EXTREME POVERTY

- Differences:
  - is not part of national agenda
  - international threshold may require special approach

  **None Left Behind:**
  - people living on less than $1.9 a day

**TARGET 1.2**
- REDUCE POVERTY BY AT LEAST 50%

- Differences:
  - Partially integrated into sectoral policies (abs.pov. elderly, rural)
  - international threshold may require special approach

  **None Left Behind:**
  - men, women and children of all ages

**TARGET 1.3**
- IMPLEMENT SOCIAL PROTECTION SYSTEMS

- Differences:
  - target is not expressly stated in any policy
  - low coverage of poor households by social assistance, low benefit levels and unsustainability of the pension system

  **None Left Behind:**
  - poor and the vulnerable

**TARGET 1.4**
- EQUAL RIGHTS TO OWNERSHIP BASIC SERVICES, TECHNOLOGY AND ECONOMIC RESOURCES

- Differences:
  - mostly present in national documents, except Nat.Pr. Real Estate Cadastre

  **None Left Behind:**
  - men and women

**TARGET 1.5**
- BUILD RESILIENCE TO ENVIRONMENTAL, ECONOMIC AND SOCIAL DISASTERS

- Differences:
  - present in national documents
  - Limited to climate-related events

  **None Left Behind:**
  - poor and those in vulnerable situations

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**EU-RM AA correlation:** Chapters 4, 27 (soc. policy, equal opport.), 17 (climate action), 22 (Civil Protection) - except target 1.4
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Nationalized indicators - 2017

2017

National SDG 1 indicators - 15

Availability of SDG 1 indicators

Availability of revised SDG 1 indicators

SDG 1 Moldova => 28 indicators
## Revised nationalized indicators - 2019

<table>
<thead>
<tr>
<th>Nationalized SDG Indicator</th>
<th>Availability</th>
<th>Indicator type</th>
<th>Data producer</th>
<th>M&amp;E</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1.1 Proportion of population below the international poverty line of $2.15 a day, by sex, age, employment status and geographical location (urban/rural)</td>
<td>yes</td>
<td>Global adjusted</td>
<td>NBS</td>
<td>MoEc</td>
</tr>
<tr>
<td>1.1.2 Proportion of population below the international poverty line of $4.3 a day, by sex, age, employment status and geographical location</td>
<td>yes</td>
<td>Global divided</td>
<td>NBS</td>
<td>MoEc</td>
</tr>
<tr>
<td>1.2.1 Absolute poverty rate, by sex and age</td>
<td>yes</td>
<td>Global</td>
<td>NBS</td>
<td>MoEc</td>
</tr>
<tr>
<td>1.2.2 Multidimensional poverty index, by sex</td>
<td>no</td>
<td>Global</td>
<td>NBS</td>
<td>MoEc</td>
</tr>
<tr>
<td>1.3.1 Proportion of population covered by social protection floors/systems, including quintile I</td>
<td>yes</td>
<td>Global divided =&gt; 8</td>
<td>NBS, CNAS</td>
<td>MLSPF</td>
</tr>
<tr>
<td>1.4.1 Proportion of population living in households with access to basic services (electricity, safe water sources, sewage), including quintile I</td>
<td>yes</td>
<td>Global divided</td>
<td>NBS</td>
<td>MoEc, MRDC</td>
</tr>
<tr>
<td>1.4.2 Proportion of total adult population with secure tenure rights to land, by sex and age</td>
<td>yes</td>
<td>Global divided =&gt;2</td>
<td>Public Service Agency</td>
<td>MLSPF</td>
</tr>
<tr>
<td>1.5.1 Number of persons affected by natural disasters per 100 000 per</td>
<td>yes</td>
<td>Global divided =&gt; 3</td>
<td>Emergency Service</td>
<td>MoI</td>
</tr>
<tr>
<td>1.5.2 Direct economic loss attributed to disasters in relation to GDP</td>
<td>yes</td>
<td>Global</td>
<td>Emergency Service</td>
<td>MoEc</td>
</tr>
<tr>
<td>1.5.3 Proportion of actions implemented from the national strategic framework for mitigation of disaster associated threats</td>
<td>no</td>
<td>Global divided =&gt;2</td>
<td>MADRM</td>
<td>MADRM</td>
</tr>
<tr>
<td>1.5.4 Proportion of local governments that adopt and implement local disaster risk reduction strategies</td>
<td>no</td>
<td>Global</td>
<td>MADRM</td>
<td>MADRM</td>
</tr>
<tr>
<td>1.a.1 Proportion of domestically generated resources allocated by the government directly to poverty reduction programs</td>
<td>no</td>
<td>Global</td>
<td>MoF</td>
<td>MLSPF</td>
</tr>
<tr>
<td>1.a.2 Proportion of total government spending on essential services (education, health and social protection)</td>
<td>no</td>
<td>Global divided =&gt; 3</td>
<td>MoF</td>
<td>MLSPF</td>
</tr>
<tr>
<td>1.a.3 Sum of total grants and non-debt-creating inflows directly allocated to poverty reduction programmes as a proportion of GDP</td>
<td>no</td>
<td>Proxy</td>
<td>MoF</td>
<td>MLSPF</td>
</tr>
<tr>
<td>1.b.1 Proportion of government recurrent and capital spending to sectors that disproportionately benefit women, the poor and vuln.</td>
<td>no</td>
<td>Proxy</td>
<td>MoF</td>
<td>MLSPF</td>
</tr>
</tbody>
</table>
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ABSOLUTE poverty rate
New methodology of absolute poverty line

In 2017, with the support of the World Bank has been revised methodology for calculating the absolute poverty line

<table>
<thead>
<tr>
<th></th>
<th>2006 methodology</th>
<th>Revised methodology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average monthly consumption</td>
<td>Consumption is expressed in monthly terms using diary information for certain items and recall expenditure for others</td>
<td>Diary and recall expenditures are combined and expressed in monthly terms</td>
</tr>
<tr>
<td>Minimum calories intake</td>
<td>2282 Kcal per day</td>
<td>2400 Kcal per day (in 2013 Academy of Science provided new standards)</td>
</tr>
<tr>
<td>Adjustment for price differences computed for each</td>
<td>Primary sampling unit and month of interview</td>
<td>Stratum and month of interview</td>
</tr>
<tr>
<td>Non-food poverty line</td>
<td>Non-food poverty line computed based on all those who have a total consumption approximately equal to the food poverty line (WB lower poverty line methodology)</td>
<td>Non-food poverty line computed based on all those who have a food consumption approximately equal to the food poverty line (WB upper poverty line methodology)</td>
</tr>
</tbody>
</table>
New poverty line and poverty measures

A new poverty line for 2016 was approved

<table>
<thead>
<tr>
<th></th>
<th>2006 methodology</th>
<th>Revised methodology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poverty line, MDL</td>
<td>1467.2</td>
<td>1852.4</td>
</tr>
<tr>
<td>% of poor population</td>
<td>9.5</td>
<td>25.6</td>
</tr>
</tbody>
</table>

Poverty rates for 2014-2018 were calculated using a new poverty line
In 2019, NBS revised the population number for 2014–2018, applying, first ever the international **definition of usual residence**, and using the data on state border crossings by individuals were provided by the Borser Police.

**Weights** for the Household Budget Survey have been **recalculated** for the population with **usual residence** instead of the stable population.

All poverty **indicators**, including the **poverty line**, were recalculated using **new weights**.
Poverty line and poverty measures

For 2016, poverty lines estimates using population with usual residence are the following:

<table>
<thead>
<tr>
<th>Poverty line, lei</th>
<th>Revised methodology using resident population</th>
<th>Revised methodology using population with usual residence</th>
</tr>
</thead>
<tbody>
<tr>
<td>1852.4</td>
<td>1852.4</td>
<td>1819.2</td>
</tr>
<tr>
<td>25.6</td>
<td>25.6</td>
<td>26.4</td>
</tr>
</tbody>
</table>

Poverty rates for 2014-2018 were calculated using population with usual residence

![Graph showing poverty rates from 2014 to 2018]
Follow-up actions and challenges

- Dissemination of poverty indicators/statistics – StatBank
- Dissemination of time-series for poverty related SDGs indicators, as part of Statistical Annex to the first VNR
- Estimation of poverty indicators for the time-series prior 2014 (back-cast old time-series) as soon as the retro-projections of usual residence population completed

**CHALLENGES:**

- Explanation to data users for occurrence of multiple methodological changes
- Time-series interruptions
- Political instability – sensitivity of poverty statistics
- Insufficient staff resources
- Staff capacity building required
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NATIONAL
Multidimensional Poverty Index (MPI)
Defining the National MPI (by users & “poor”)}
# Defining the National MPI (by population)

## Prioritization of dimensions

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Votes</th>
<th>Weights</th>
<th>Redistribution of votes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1  Education</td>
<td>61</td>
<td>5%</td>
<td>6%</td>
</tr>
<tr>
<td>2  Health</td>
<td>127</td>
<td>10%</td>
<td>13%</td>
</tr>
<tr>
<td>3  Labor force</td>
<td>170</td>
<td>14%</td>
<td>17%</td>
</tr>
<tr>
<td>4  Living conditions</td>
<td>175</td>
<td>14%</td>
<td>17%</td>
</tr>
<tr>
<td>5  Migration</td>
<td>38</td>
<td>3%</td>
<td>4%</td>
</tr>
<tr>
<td>6  Incomes, expenditures</td>
<td>301</td>
<td>25%</td>
<td>9%</td>
</tr>
<tr>
<td>7  Social protection</td>
<td>74</td>
<td>6%</td>
<td>7%</td>
</tr>
<tr>
<td>8  Fairness and respect</td>
<td>199</td>
<td>16%</td>
<td>20%</td>
</tr>
<tr>
<td>9  Behavior</td>
<td>24</td>
<td>2%</td>
<td>2%</td>
</tr>
<tr>
<td>10 Infrastructure</td>
<td>52</td>
<td>4%</td>
<td>5%</td>
</tr>
<tr>
<td></td>
<td>1221</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>
Defining the National MPI (by statisticians)

Final list of **AREAS (6)** to be subject of poverty measurement in all its dimensions relevant for the context of the Republic of Moldova

List of statistical **INDICATORS (25)** to capture the non-monetary deprivation and poverty dimensions

OPHI & UNDP approach applied & good international practices and experience

Field **data COLLECTION** of the missing indicators for the MPI 4th quarter of 2019 (ongoing)

Out of 25 questions:
- 15 are already **collected** in HBS
- 10 indicators are **missing**

=> additional **Module** (toolkit Q + I)
I. deprivation faced by respondent
II. deprivations faced by household

**September 2019**

**December 2019**
Dimensions, Indicators, Weights

1. Corruption in social sphere
2. Life in Dignity
3. Remittance-Dependent
4. Discrimination
5. Self-declared health status
6. Limited resources for health care
7. Limited access to medical services
8. Termination of work or usual activity
9. Completion of schooling
10. School attendance
11. Access to pre-school education services
12. Housing facility condition
13. Natural disaster
14. Household environment
15. Housing neighborhood condition and safety
16. Overcrowding
17. Heating
18. Water supply
19. Drinking Water
20. Indebtedness
21. Labour market participation
22. Underemployment
23. Dependence on public social aid/help
24. Non-public forms of social help
25. Access to social net (public and non-public)
National MPI = who are poor * how much

Available ‘universe of indicators’
- Data inputting & processing
- Final set of indicators compiled

MPI estimation
- Cutoff and weight for each indicator
- Final poverty cutoff
- Multidimensional Poverty Headcount (Incidence) + Intensity

MPI institutionalization
- Instructions on data collection
- Definitions & methodology
- Estimation syntax

Dissemination & communication
- User-friendly Interpretation
- Tailored communication
- Dissemination

Inform planning & policy design
- MPI use in policy-making by sectors
- Anti-poverty measures
- Pro-poor interventions

January-March 2020 — April 2020
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Poverty MAPPING in Moldova
Mapping poverty – methodology

WHAT are Small Area Methods:
- traditional “PovMap” methodology is a model-based unit level method where the indicator of interest for the Census population is simulated multiple times
- methodology we use comes from Elbers, Lanjouw, and Lanjouw (ELL 2002, and 2003)

HOW to produce:
- use official data sources (population censuses and household surveys) to estimate risk of poverty at lowest possible sub-national level.

WHAT is required:
- Household survey and Census must have variables in common between them
- location (cluster) variable in order to link the census and survey at that level
- using a random subsample of observations from the larger data (this subsample would be the HBS) to simulate poverty onto the Census

ISSUE faced:
- Population shares by region do not match between the Census and the HBS

SOLUTION:
- re-weighting the HBS with the purpose of making demographic characteristics more aligned across data sources

national poverty rate will differ: 29.5 (HBS official) vs 31.5 (Census proportions)

Share of total population by region

- Nord
- Centru
- Sud
- Chisinau

Population Census
Population HBS
Mapping poverty – main steps

1. Prepare the data in the household survey and the census
   » Check definitions, harmonize variables, Reweight if needed
   » Ensure that data is comparable (compare distributions, remove outliers)

<table>
<thead>
<tr>
<th>HBS questionnaire</th>
<th>Population census questionnaire</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level of education:</td>
<td>Highest level of education completed:</td>
</tr>
<tr>
<td>1. Preschool or no primary</td>
<td>1. No studies</td>
</tr>
<tr>
<td>2. Primary</td>
<td>2. Primary</td>
</tr>
<tr>
<td>3. Incomplete secondary / gymnasium</td>
<td>3. Incomplete secondary / gymnasium</td>
</tr>
<tr>
<td>5. Secondary professional</td>
<td>5. Secondary professional</td>
</tr>
<tr>
<td>8. Master’s, including 2nd cycle and integral higher education</td>
<td>8. Master’s, including 2nd cycle and integral higher education</td>
</tr>
</tbody>
</table>

During the last week, did you work for income in cash or in kind for at least 1 hour?
1. Yes
2. No →

Did the person work for at least 1 hour during the week of May 5-11, 2014 for pay / salary, profit or financial gain (in cash or in kind)?
1. Yes, worked for pay / salary, in cash or in kind
2. Yes, self-employed or family business, free professional or other self-employed activities
3. Yes, worked in the auxiliary agricultural activities for sale or self-consumption
4. No, but has a place of work from which was absent because of leave (including maternity), or because of short-term production stoppages (lack of inputs, clients etc.)
5. No, did not work

2. Prepare our welfare model using the household survey

3. Monte Carlo Simulation using the Census data
   \[ y^* = X_{census} \beta^* + \eta^* + e^* \]
Mapping poverty – results

**Raion level poverty**

**Comuna level poverty**

ELL-HS ES estimates of poverty obtained at the comuna level, aggregated to the raion level.
MULȚUMESC!
СПАСИБО ЗА ВНИМАНИЕ!
THANK YOU!