

Multidimensional Poverty: Measurement and Relevance

Bilal Malaeb

OPHI, University of Oxford

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Tabita, Kenya

Rabiya, India

Stephanie, Madagascar

Agatha, Madagascar

Dalma, Kenya

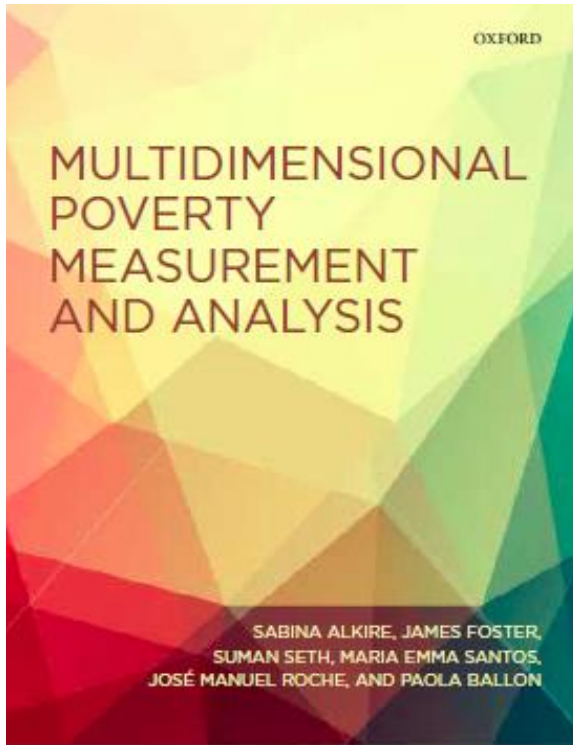
Ann-Sophie, Kenya

Valérie, Madagascar



Background and Resources

OXFORD
UNIVERSITY PRESS



multidimensionalpoverty.org

UNECE Guidebook

Chapter 4: Multidimensional Poverty and its Measurement

Sabina Alkire

Multidimensional Poverty Index (MPI)

- *measuring acute poverty around the world-*

1. Normative Motivation
2. MPI Methodology
3. Dimensions and Recommendations

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Normative Motivation

Why multidimensional poverty?

- Improve the fit between the measure and the phenomenon it is supposed to approximate
- Poverty measures must reflect the multifaceted nature of poverty itself
- Builds on Sen's *Capability Approach*: well-being should be defined and assessed in terms of:
 - ✓ **functionings** (beings and doings)
 - ✓ **capabilities** (various combinations of functionings)
 - ✓ i.e. valuable freedoms

Why multidimensional poverty?

- While monetary measures have an underlying definition of well-being in the space of utility or resources, the capability perspective defines it in the intrinsic and instrumental values of capabilities
- Multidimensional approach departs from concentrating on the means of living to the actual opportunities of living
- Relevant to the UNECE countries, especially those with the post-soviet legacy; there is a good infrastructure and public provisions that go unrecognized with income/consumption measures of poverty.
- Monetary and Multidimensional poverty are strong **complements**.

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Methodology

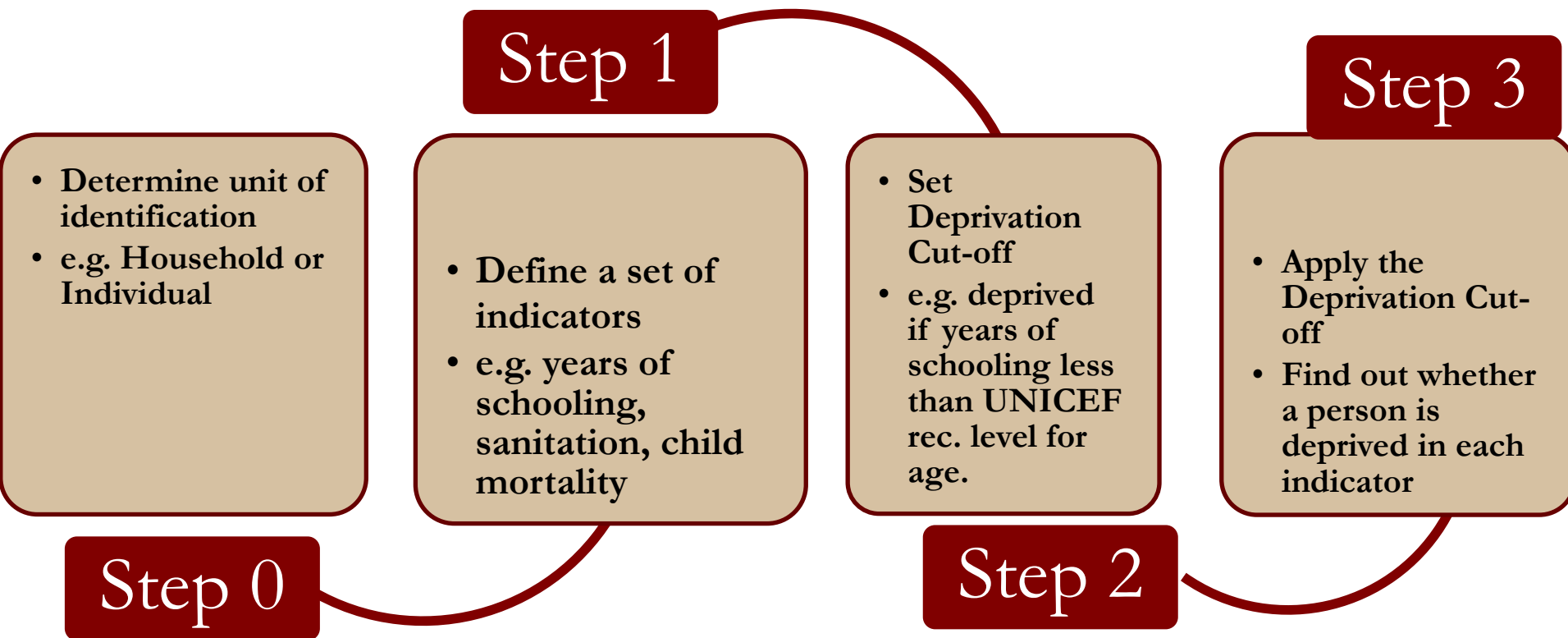
What is the MPI?

- Alkire & Foster (2011) methodology.
- The MPI (like FGT-1) is the product of two components:

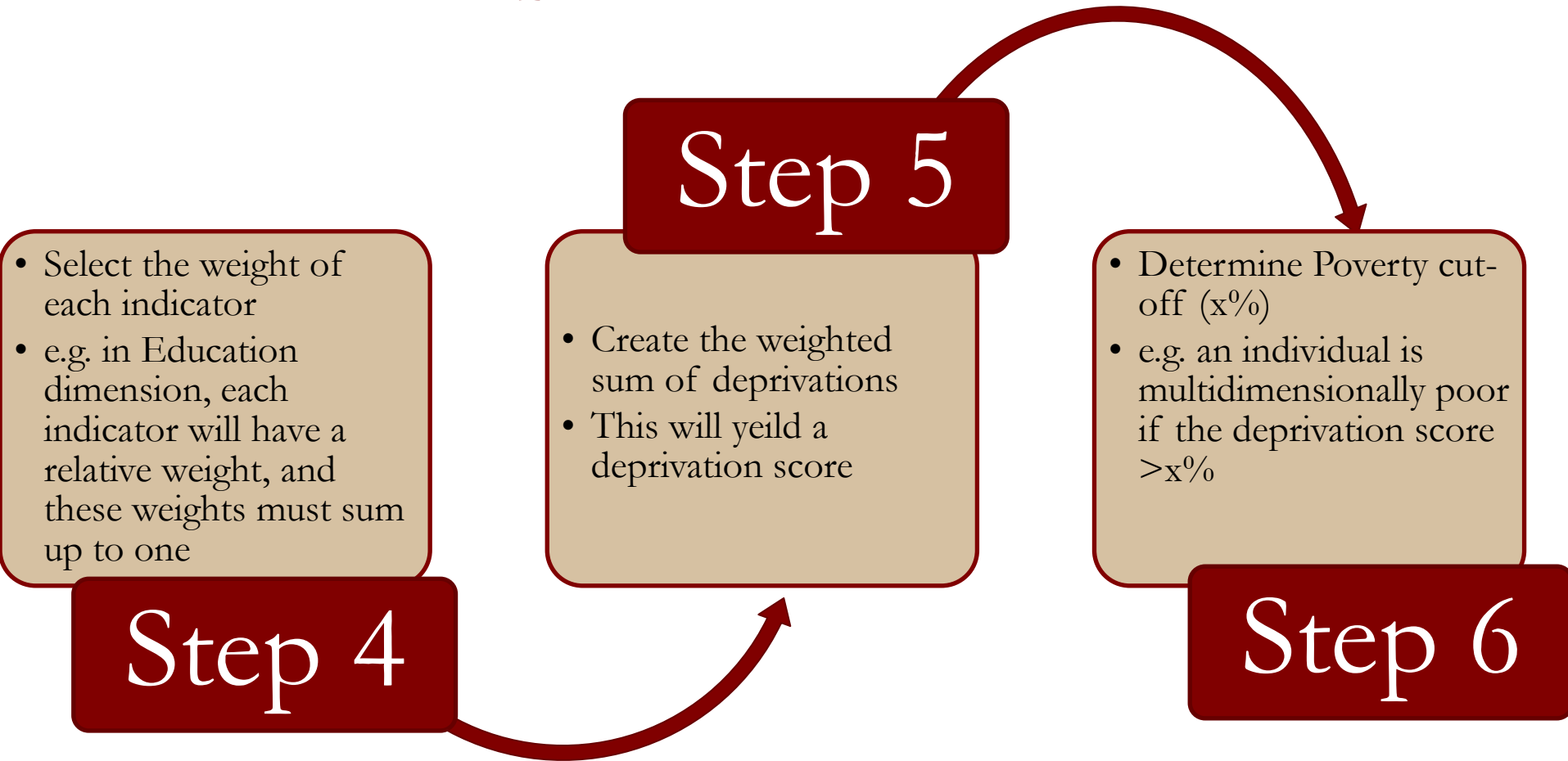
$$\text{MPI} = H \times A$$

- 1) **Incidence** ~ the percentage of people who are poor, or the headcount ratio **H**.
- 2) **Intensity** of people's deprivation ~ the average share of dimensions in which disadvantaged people are deprived **A**.

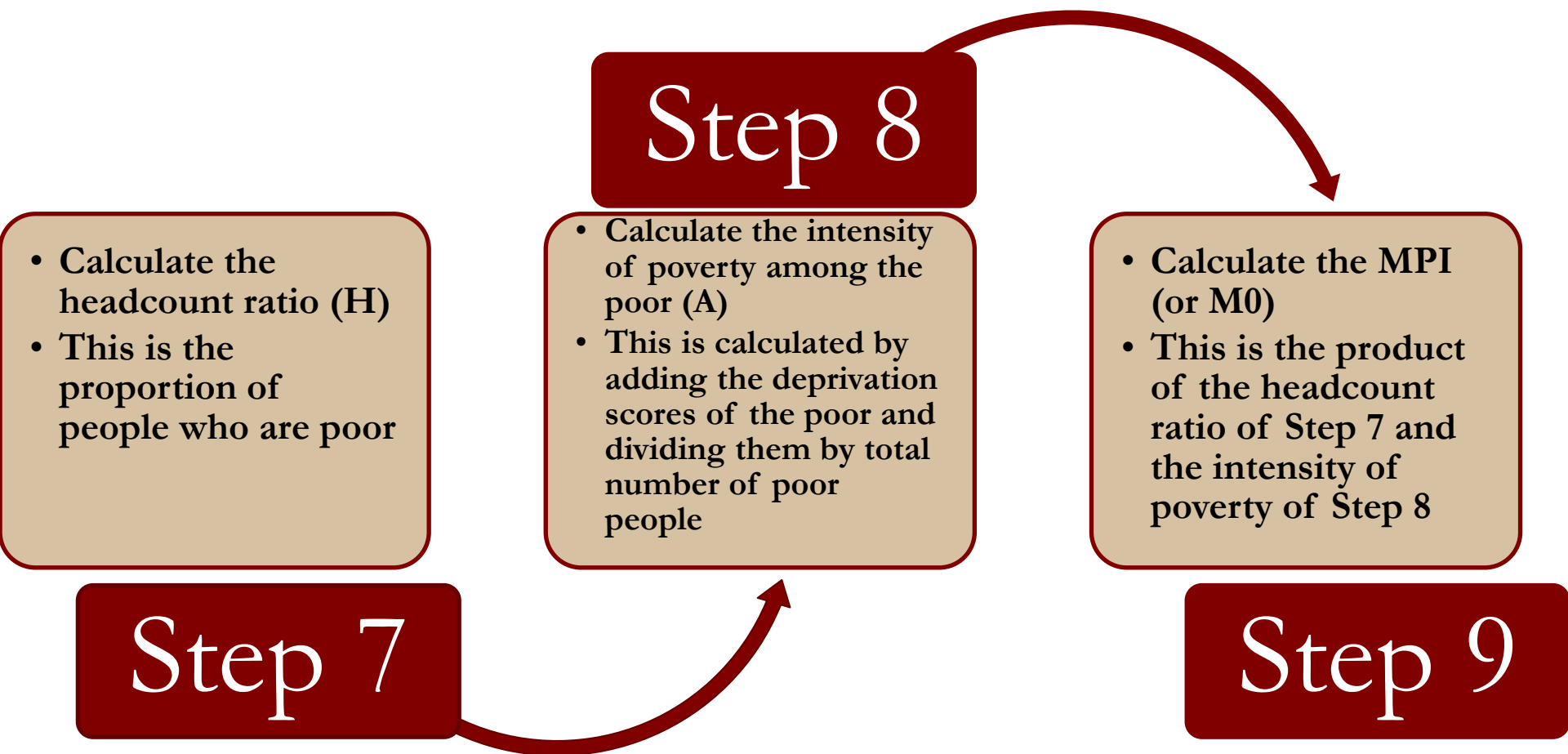
Steps to Build an MPI



Steps to Build an MPI



Steps to Build an MPI



Example

Suppose we have a society of 3 individuals, X, Y, and Z. The MPI we seek to construct has the following indicators nested within three dimensions:

Dimensions of poverty	Indicator	Deprived if...	Weight
D1	a	...	1/6
	b	...	1/6
D2	c	...	1/6
	d	...	1/6
D3	e	...	1/18
	f	...	1/18
	g	...	1/18
	h	...	1/18
	i	...	1/18
	j	...	1/18

		Indicators										Deprivation Score
		a	b	c	d	e	f	g	h	i	j	
	Weight	0.17	0.17	0.17	0.17	0.06	0.06	0.06	0.06	0.06	0.06	
Person												
X		1	1	0	0	1	0	0	1	0	0	0.44
Y		0	0	1	0	1	0	1	1	0	0	0.33
Z		0	1	0	0	0	0	0	0	0	0	0.17

Suppose that after several robustness tests, we then choose a poverty cut-off of 33%. Under this specification, persons **X and Y will be considered multidimensionally poor**, while person **Z is not**.

Assuming equal sampling weights (this is often not the case in sample data), we get the following measures:

The headcount ratio (H) is $2/3$ i.e. 0.66

The intensity of poverty among the poor (A) is $(0.33+0.44)/2 = 0.39$

The adjusted headcount ratio M0 (or the MPI) is $H \times A = 0.66 \times 0.39 = 0.26$

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Dimensions

Alkire and Apablaza (2016)

As a **research exercise**, Alkire and Apablaza (2016) calculate a multidimensional poverty index (MPI) using EU SILC data based on the Alkire Foster (AF) methodology drawing on existing Europe 2020 indicators, as well as on indicators of health, education and the living environment. They generate an MPI composed of 12 indicators and compare the results across time and space, and propose **improvements** to indicators.

Dimension	Indicator Variable	Weight
Income	AROP	1/6
Employment	Quasi-Joblessness	1/6
Material Deprivation	Severe Material Deprivation	1/6
Education	Completed Primary Education	1/6
Environment	Noise	1/24
	Pollution	1/24
	Crime	1/24
	Housing	1/24
Health	Fair Health	1/24
	Chronic Illness	1/24
	Morbidity	1/24
	Unmet Medical Needs	1/24

Alkire and Apablaza (2016)

	2006	2007	2008	2009	2010	2011	2012
Multidimensional Poverty (M_0)	0.0484	0.0443	0.0418	0.0413	0.0419	0.0424	0.0429
	(0.0012)	(0.0011)	(0.0012)	(0.0012)	(0.0011)	(0.0011)	(0.0011)
Headcount Ratio (H)	10.04%	9.24%	8.77%	8.63%	8.67%	8.75%	8.81%
	(0.0012)	(0.0012)	(0.0013)	(0.0013)	(0.0013)	(0.0012)	(0.0013)
Intensity of Poverty (A)	48.18%	47.99%	47.73%	47.80%	48.30%	48.45%	48.62%
	(0.0006)	(0.0006)	(0.0006)	(0.0006)	(0.0006)	(0.0005)	(0.0006)
Contribution of each dimension to total multidimensional poverty							
Income	24.23%	24.58%	25.23%	25.67%	25.36%	25.25%	25.33%
Employment	18.40%	18.69%	18.31%	18.69%	19.88%	19.63%	19.45%
Material Deprivation	16.13%	15.83%	15.56%	14.97%	15.31%	16.43%	17.92%
Education	17.94%	17.46%	17.90%	17.38%	16.86%	16.22%	15.44%
Environment	11.80%	12.07%	11.34%	11.58%	11.16%	10.77%	10.39%
Health	11.50%	11.38%	11.66%	11.72%	11.42%	11.70%	11.48%

Note: Belgium, Bulgaria, Ireland, Croatia, Malta, Romania, Iceland, Norway and Switzerland not included.

Source: EU-SILC users' database of March 2014.

Decrease in headcount from 10.04% in 2006 to 8.81% in 2012).
Statistically significant at 5%.

EU – SILC Surveys

With the update in the EU-SILC surveys after 2013, several new indicators have surfaced which can be used to build national or harmonized MPIs.

Most notable of these indicators are:

- **Housing:** overcrowding, accommodation, rooms, and heating
- **Educational Qualifications:** individual's qualifications (adult education, national education schemes, vocational training, open learning, etc.).
- **Health:** disability, and activity
- **Indebtedness**

Social Exclusion Index

The Social Exclusion Survey (2009) was conducted under UNDP in six countries in the Europe and Central Asia region - Kazakhstan, Moldova, FYR Macedonia, Serbia, Tajikistan, and Ukraine.

The Social Exclusion MPI has 3 dimensions and 8 indicators. This indicator is based on the Alkire-Foster method (discussed earlier).

The highest Social Exclusion was in Tajikistan where 70% of the population were excluded; next was Moldova at 40%; Social Exclusion in 2009 was lowest in FYR Macedonia.

Table 3.1: Social exclusion in the six surveyed countries

	KZH	MLD	SER	TJK	FYRM	UKR
<i>Magnitude of social exclusion</i>						
(A) Social exclusion headcount (%)	32	40	19	72	12	20
(B) Intensity: Average number of deprivations among the socially excluded	10.5	11	10.8	11.1	10.8	10.4
(C) Intensity: Average share of deprivations (the number of deprivations as a percentage of the 24)	44	46	45	46	45	43
Social Exclusion Index (A) *(C)	14	18	8	33	5	9
<i>Contribution of dimensions to the Social Exclusion Index</i>						
Economic exclusion	34	32	31	39	30	28
Exclusion from social services	34	39	38	34	38	36
Exclusion from participation in civic and social life and networks	32	30	31	27	32	36

Source: Social Exclusion Survey 2009.

Roma Index

- Joint venture between the UNDP and EU FRA
- 8 countries
- Two points in time: 2004 and 2011.
- The unit of analysis is the individual.
- Six dimensions with twelve equally weighted indicators.
- Two poverty cutoffs are reported: People facing 5-7 deprivations are “multidimensionally poor” and those facing 8-12 are “severely multidimensionally poor.”
- In 2011, highest Roma poverty is in Albania, where this has increased over time.

Roma Index

Dimensions	Indicators	Deprived if...
Basic rights	Civil status	Having an ID - yes/no (personal document, birth certificate, etc.)
	Discrimination	Household member lives in a household where a member has been discriminated against while looking for a job
Health	Disability status	A household member having a disability - yes/no
	Access to medical services	Any household member living in a household responding "yes" to the question "were there any periods in the last 12 months when you couldn't visit a doctor when you needed?"
Education	Completed education	For adults: Any household member above schooling age who hasn't completed primary education or lower secondary; For children: children in school age who are not in school
	Literacy	Any household member stated as unable to read and write
Housing	Access to basic infrastructure	A composite indicator - any household member living in a household without two of the three (toilet or bathroom inside the house; running water; electricity)
	Secure housing	Any household member living in "ruined houses" of "slums"
Standard of living	Extreme poverty	Any household member living in a household that experienced that in the past month somebody ever went to bed hungry because they could not afford enough food for them
	Amenities	Any household member living in a household, which doesn't possess four or six categories falling in the "Material Deprivation" index
Employment	Unemployment	Any household member living in a household with none of the adult household members employed
	Working experience	Any household member living in a household in which the household head or his/her spouse has no working experience

- They cover Roma population in:
 - ✓ Albania
 - ✓ Bosnia and Herzegovina
 - ✓ Bulgaria
 - ✓ Hungary
 - ✓ Republic of Croatia
 - ✓ Czech Republic
 - ✓ Moldova
 - ✓ Montenegro
 - ✓ Former Yugoslav Republic of Macedonia
 - ✓ Romania
 - ✓ Republic of Serbia
 - ✓ Slovakia

Ensuring Comparability

Recommendations:

- Recognition that poverty is a multidimensional phenomenon
- Harmonized surveys or elements of some surveys
- National MPIs in a **coordinated** manner, i.e. agreeing on **core** indicators that constitute a regional MPIs to allow comparability

Contact Details

Bilal Malaeb

Oxford Poverty and Human Development Initiative

University of Oxford

bilal.malaeb@qeh.ox.ac.uk