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OXFORD POVERTY & HUMAN DEVELOPMENT INITIATIVE
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The Breadth of Poverty

International Economic Policy Forum on
World Bank's flagship *Global Monitoring Report* 2015/2016

Sabina Alkire, OPHI, U. of Oxford & IIEP, George Washington U.

GMR 2015/16: Challenge and Policy

Three **key challenges** stand out:

~ the depth of remaining poverty,

~ the unevenness in shared prosperity, and

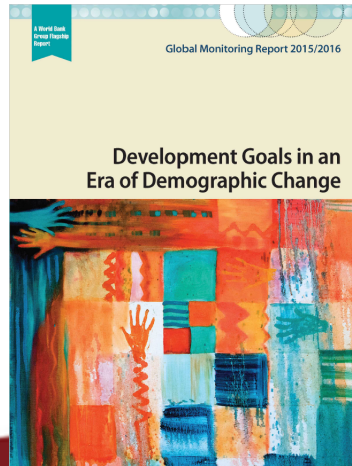
~ **the persistent disparities in non-income dimensions of development** = *Breadth*

Three ingredients will frame the **policy agenda**:

~ sustainable broad-based growth,

~ **investment in human development**, = *Breadth*

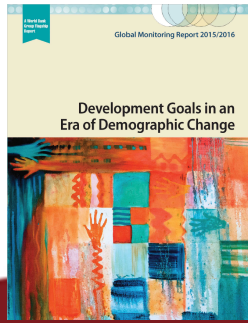
~ measures that insure the poor and vulnerable against evolving risks.



GMR 2015/16 – Why Breadth?

The goal of "ending poverty in all of its forms everywhere" is likely to lead to growing interest in the multidimensional measurement of global poverty. The SDG1.2 incorporates an explicitly multidimensional focus

1. to "end poverty in all of its forms everywhere," it must be recognized that **poverty is multidimensional**. Income poverty is typically accompanied by inadequate access to education, health, housing, employment, and personal security...
2. the **B40** consistently **underperform in non-income dimensions**.
3. greater efforts are needed to monitor the sustainability of development progress in its economic, environmental, and social aspects. **Environmental sustainability** concerns… need to enter more fully into economic decision making.



Measuring Breadth

Options:

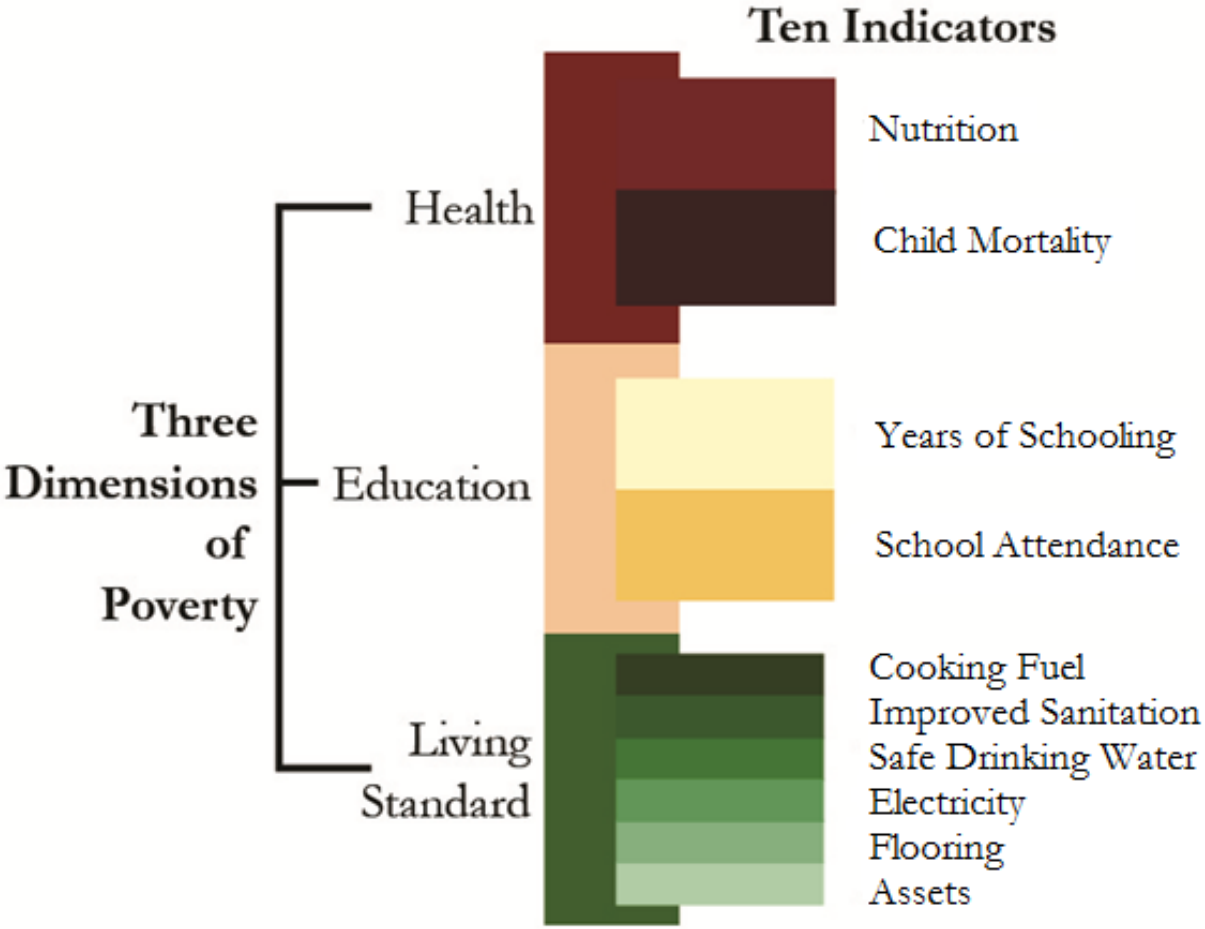
1. A Dashboard of independent indicators

2. A Composite index using 'marginal' measures

3. A Counting-based index showing joint distribution
Accompanied by partial and sub-indices for
Each component indicator.

Alkire, S. and Robles, G. (2016). "Measuring multidimensional poverty: Dashboards, Union identification, and the Multidimensional Poverty Index (MPI)." *OPHI Research in Progress* 45a, University of Oxford.

Measuring Breadth:
Empirical Example using Global MPI indicators



The Dashboard

A Dashboard: Across 101 countries a

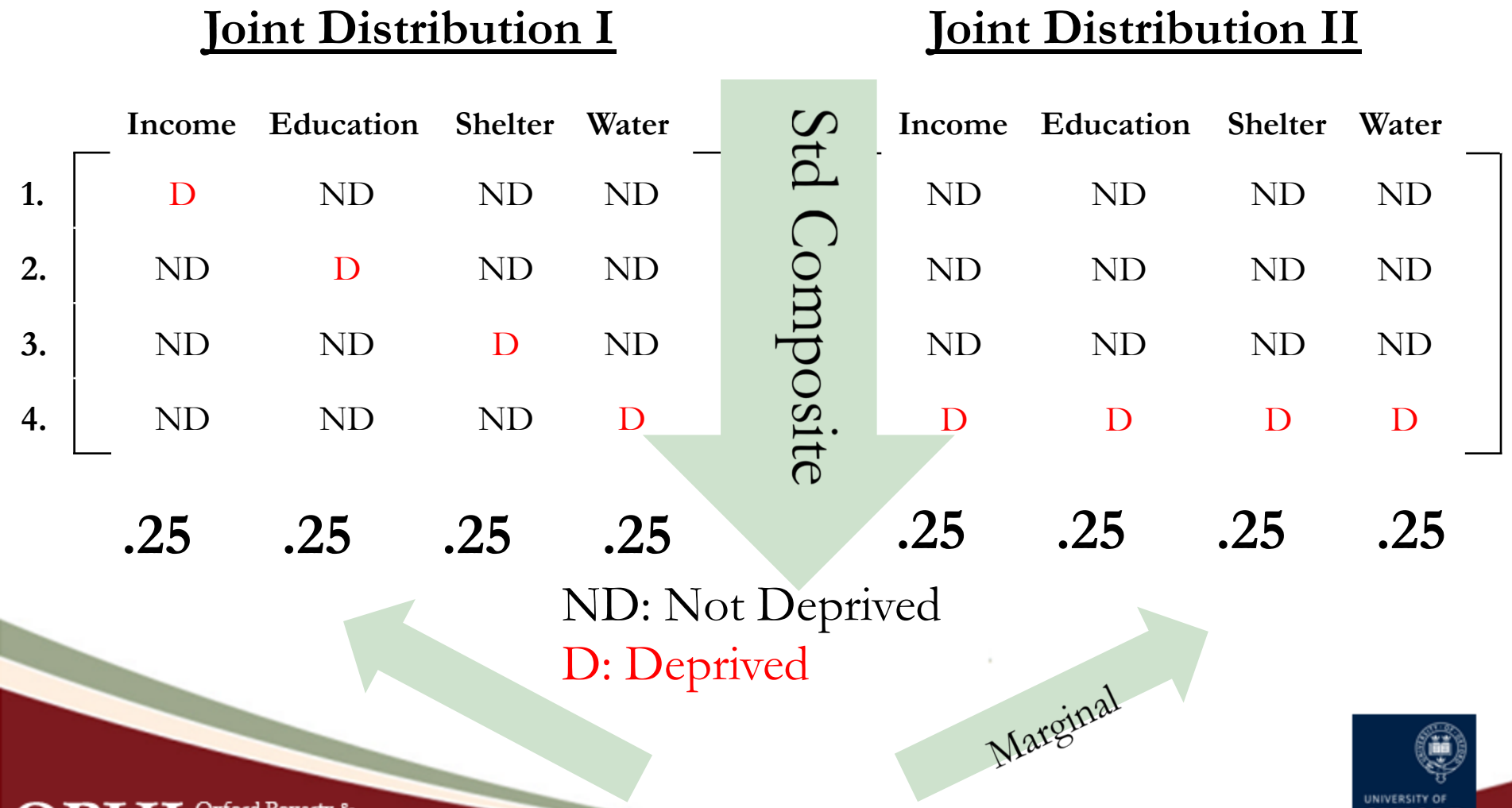
- **53.2%** of the considered populatio
- **40.3%** lack adequate **sanitation** by
- **26.5%** live in houses where **floors a**
- **26.5%** have someone in their house
- **21.8%** lack **electricity**
- **17.0%** of people live in houses whe
- **16.3%** lack safe **water** by MDG def
- **14.5%** live in a household where **a** up to class 8.
- **13.6%** live in a household in which **five years of schooling**.

Totals 13.2 billion deprivations across 5.2 billion people.

Simple question:

How many people have more than one deprivation?

Order of Aggregation



Order of Aggregation

Joint Distribution I

	Income	Education	Shelter	Water
1	D	ND	ND	ND
1	ND	D	ND	ND
1	ND	ND	D	ND
1	ND	ND	ND	D

Joint Distribution II

	Income	Education	Shelter	Water
0	ND	ND	ND	ND
0	ND	ND	ND	ND
0	ND	ND	ND	ND
4	D	D	D	D

Counting

The Dashboard

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Simple question:

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Aren't deprivations highly correlated? Empirically, in fact, no.

Average Deprivation in Pair-wise Indicators across 101 Developing Countries

		Years of schooling	School attendance	Child Mortality	Nutrition	Electricity	Sanitation	Drinking Water	Floor	Cooking Fuel	Assets
Population deprived in each indicator		14%	14%	17%	27%	22%	40%	26%	27%	53%	23%
		Percentage population simultaneously deprived in the column and row indicators									
Years of schooling	14%										
School attendance	14%	5%									
Child Mortality	17%	4%	5%								
Nutrition	27%	5%	6%	7%							
Electricity	22%	8%	7%	8%	9%						
Sanitation	40%	10%	10%	11%	15%	19%					
Drinking Water	26%	5%	5%	5%	8%	10%	13%				
Floor	27%	8%	8%	9%	12%	17%	22%	9%			
Cooking Fuel	53%	12%	12%	14%	19%	21%	33%	19%	25%		
Assets	23%	8%	7%	7%	10%	14%	19%	8%	16%	21%	

Source: Own calculations using the proportion of pairwise simultaneous deprivation by country and multiplying this by the country population. Then, a total of the population suffering each pairwise deprivation was obtained among 101 countries. The proportion expressed in this table has the 5.2 billion population of 101 countries in 2011 as a denominator.

Looking Across Dimensions:

Across 5.2 billion people:

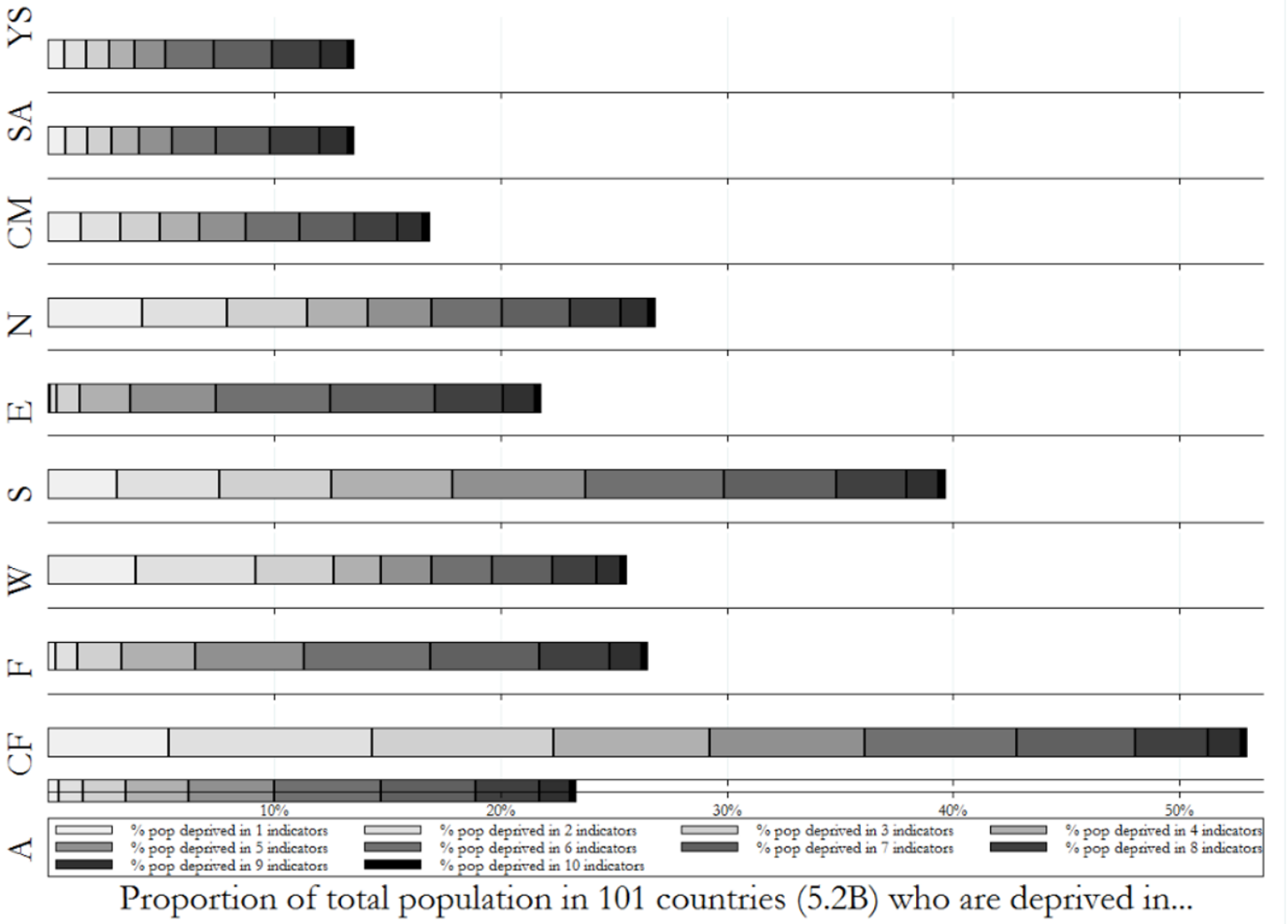
- **3.9 billion** are deprived in at least one indicator – 75%

- **1 billion** are deprived in **one indicator only** – none of the others.

- Let's assume equal weights, and show who's deprived in how many of these.

13.2 billion deprivations in 10 indicators

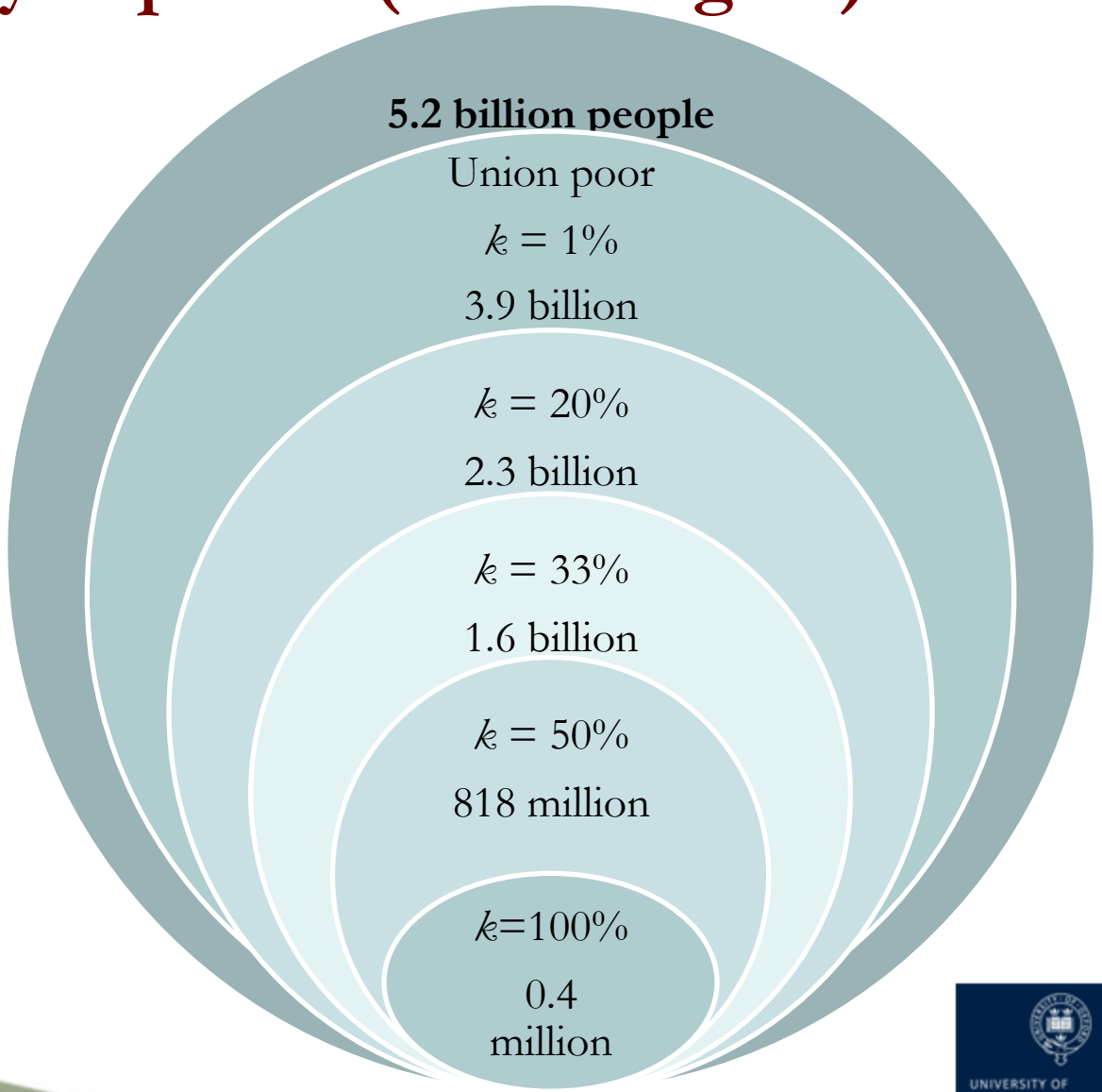
Distribution of Simultaneous Deprivations According to Each of the 10 Indicators Analysed.



Proportion of total population in 101 countries (5.2B) who are deprived in...

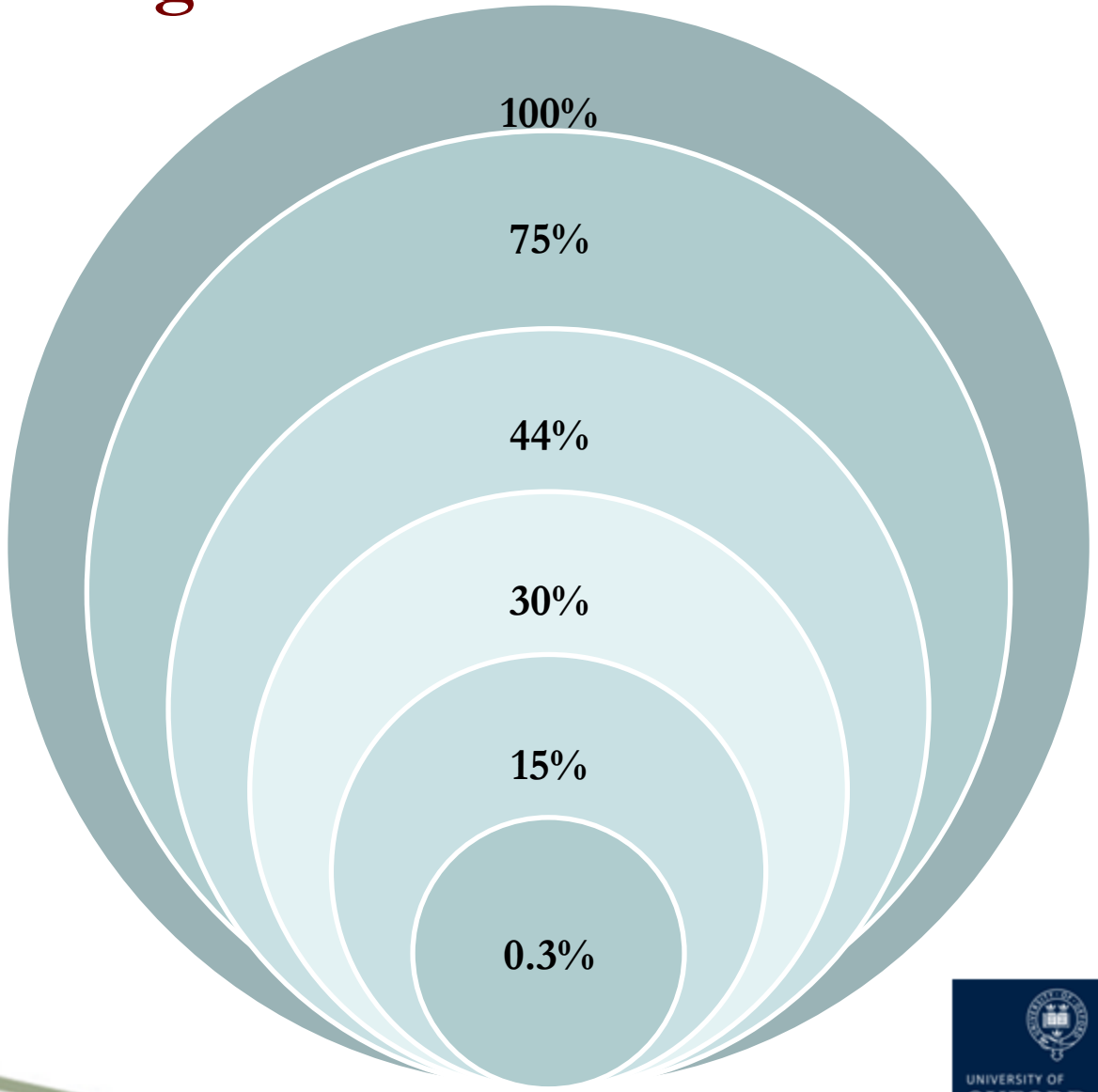
A counting method permits us to 'zoom in' on the multiply deprived (MPI weights).

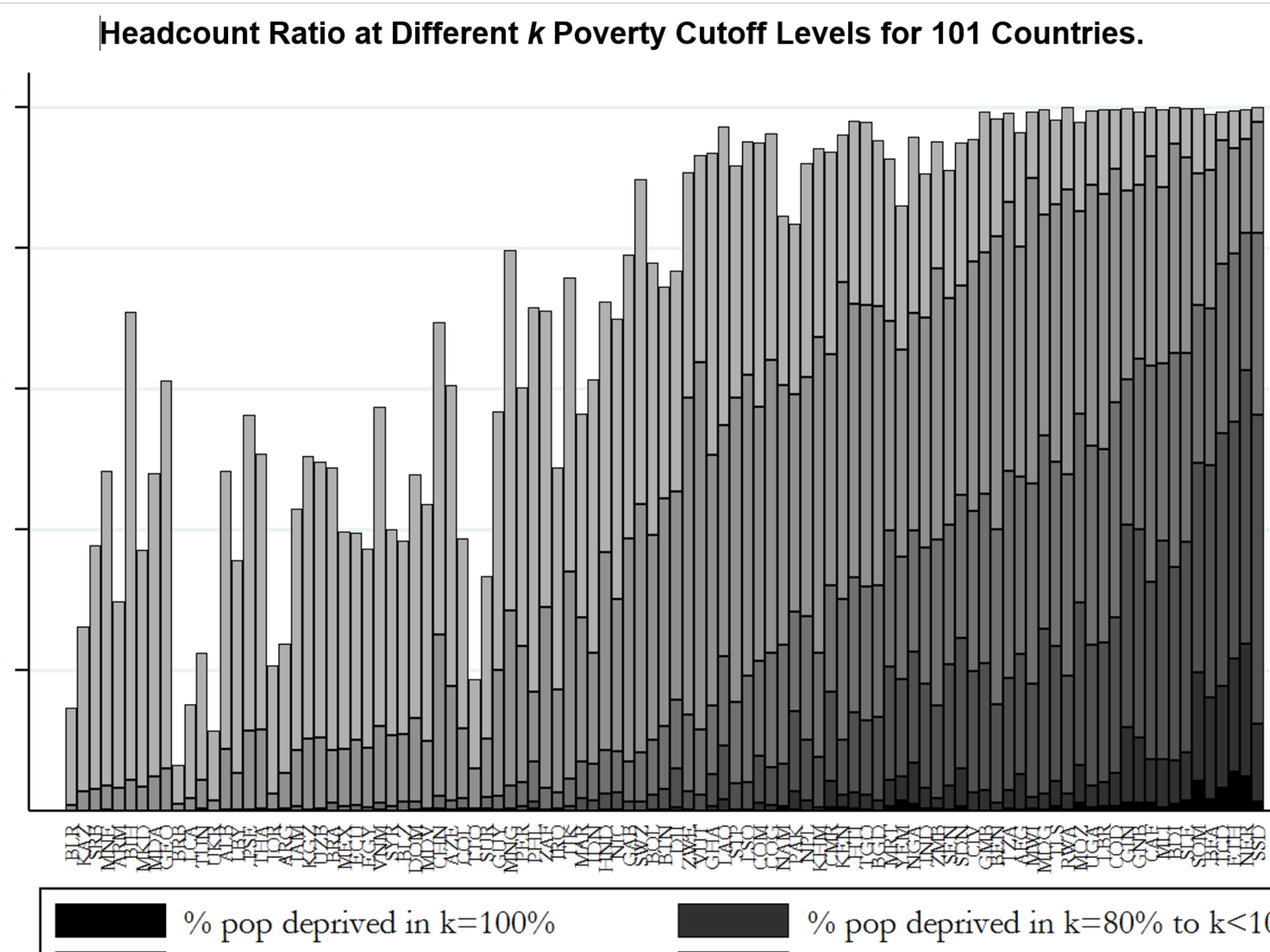
K >=	People in 101 countries
Union 1%	**3.9 billion**
20%	**2.3 billion**
33%	**1.6 billion**
50%	**818 million**
100%	**0.4 million**



We do so by setting alternative poverty cutoffs across weighted indicators

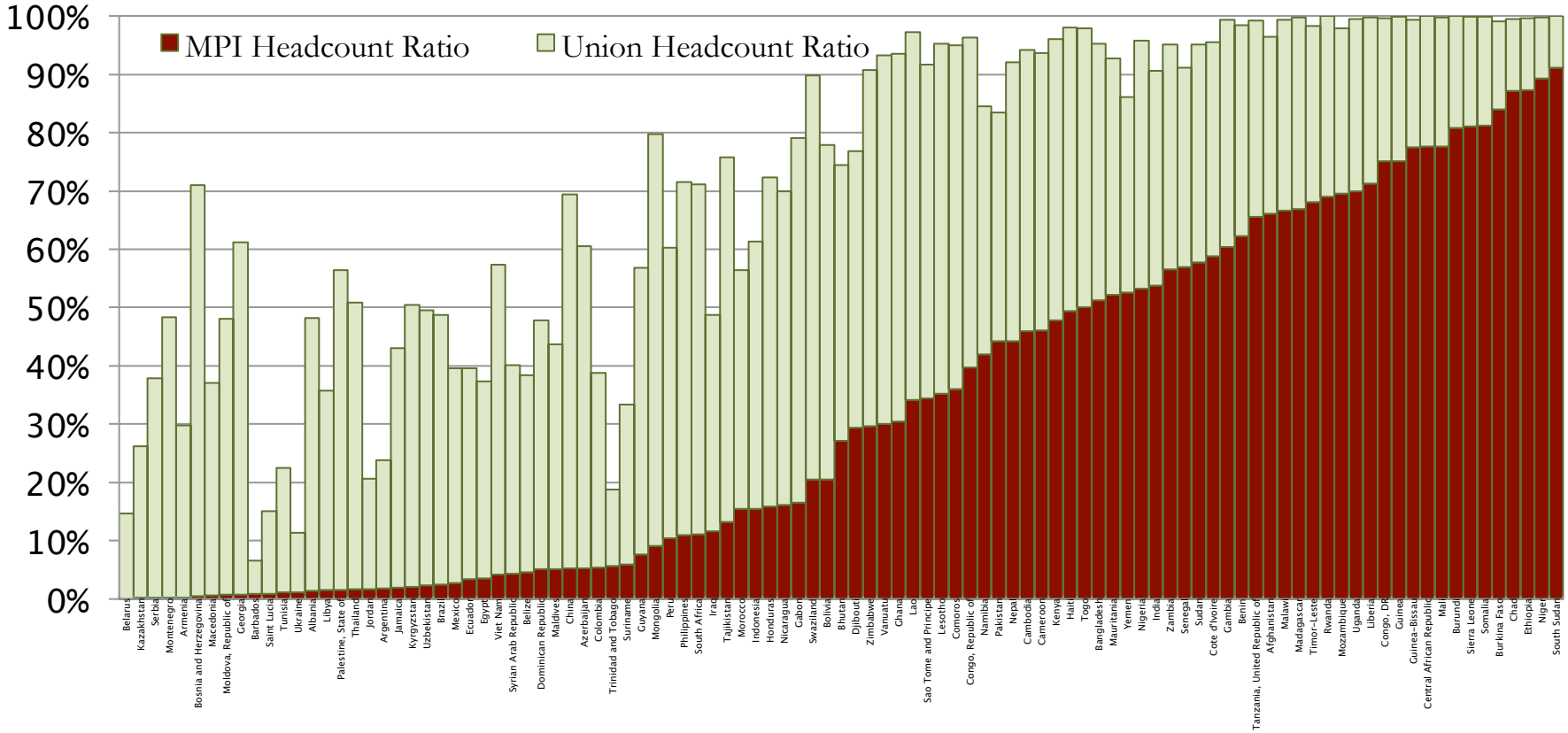
k =	People in 101 countries
Union 1%	**3.9 billion**
20%	**2.3 billion**
33%	**1.6 billion**
50%	**800 million**
100%	**0.01 million**




Headcount Ratio at Different k Poverty Cutoff Levels for 101 Countries.
% pop deprived in k=100%
% pop deprived in k=80% to k<10

More Plausible? Union vs Global MPI (H)

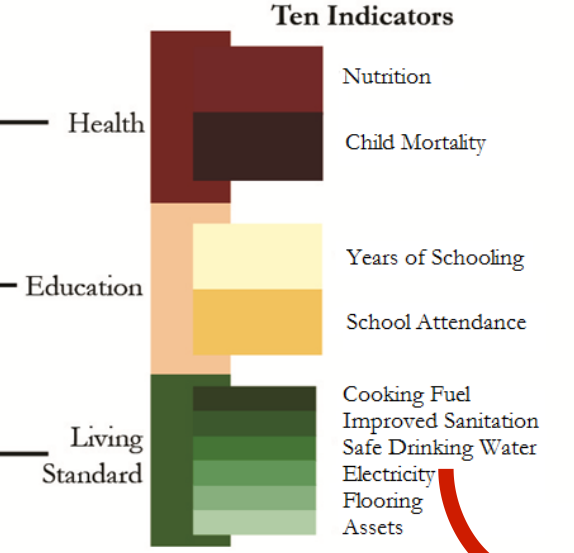
Figure 1. Comparing Union and MPI Headcount Ratios (Global MPI 2015)



Given fiscal constraints, resources should be directed towards those suffering concurrent deprivations

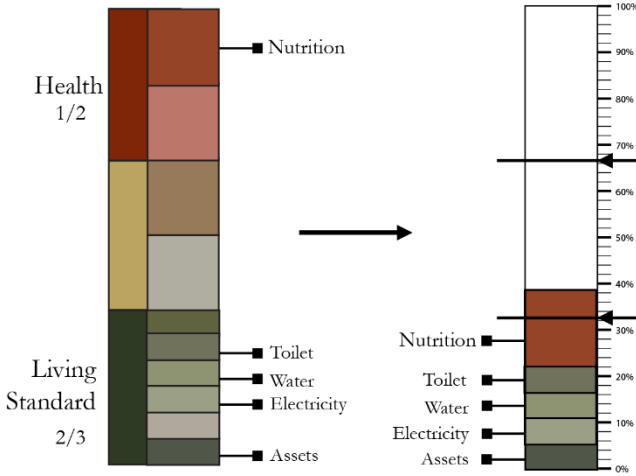
Methodology for the National and Global MPIs

1. Select Indicators, Cutoffs, Values

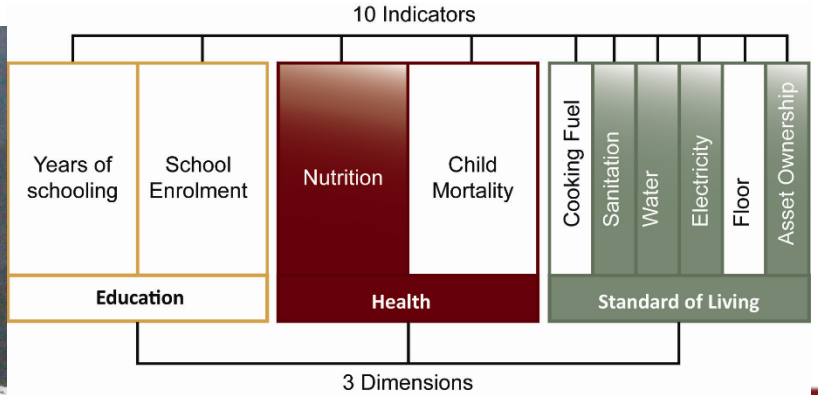


4. Report the MPI and the Incidence & Intensity & Composition of poverty

3. Identify who is poor



2. Build a deprivation score for each person



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MPI and consistent sub & partial indices

Statistical methods include:

Standard errors and confidence intervals for all statistics

Statistical inference for all comparisons

Validation for component indicators, alone and jointly

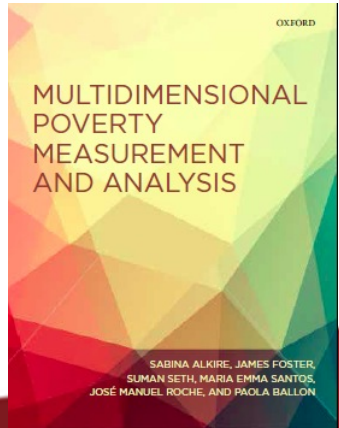
Robustness tests for cutoffs and weights

Axiomatic properties include:

Subgroup decomposability and Subgroup consistency

Dimensional breakdown, Dimensional monotonicity

Ordinality, Symmetry, Scale and replication invariance, Normalization, Poverty and Deprivation Focus, Weak Monotonicity, and Weak Deprivation Re-arrangement



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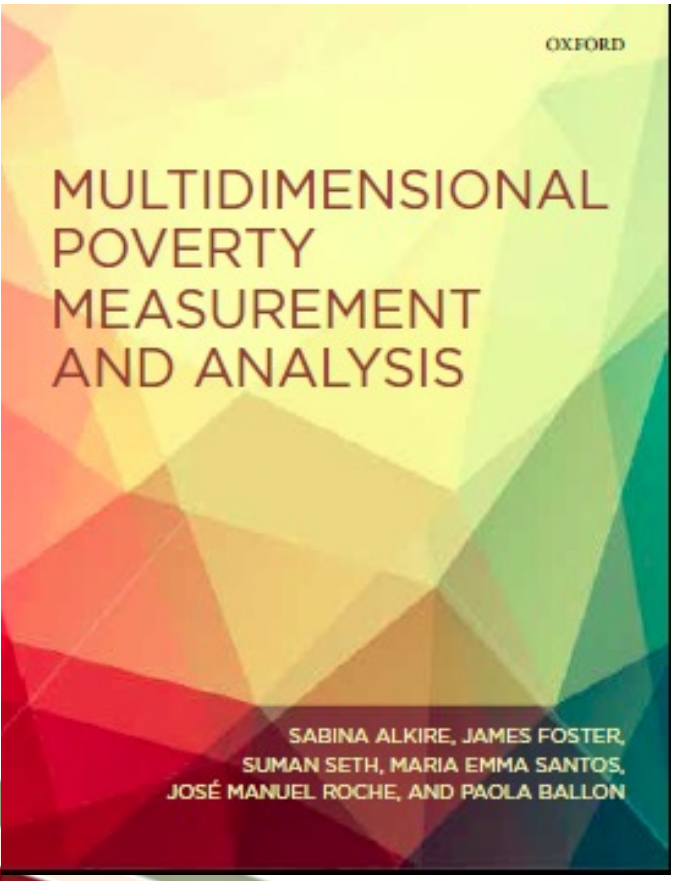

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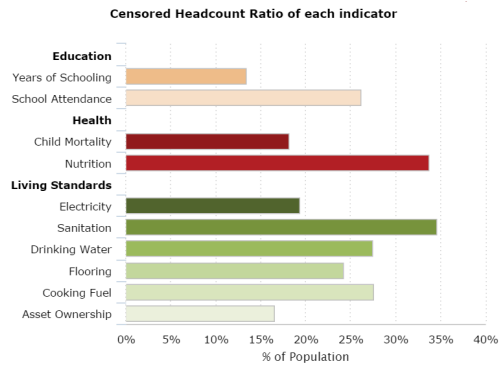
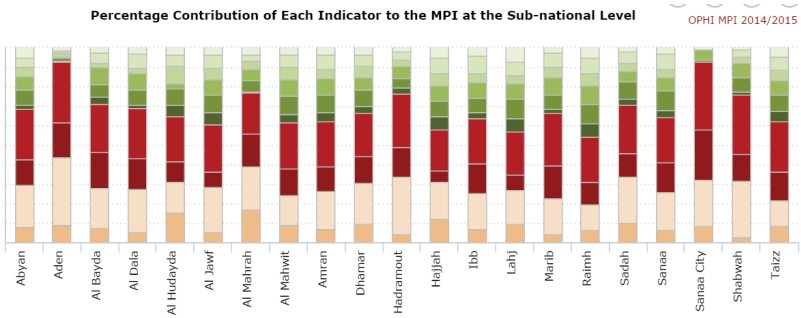
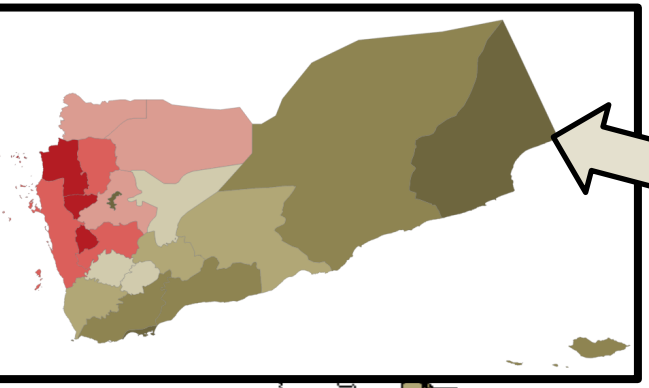
Global MPI: Headline + Disaggregated detail



Governance

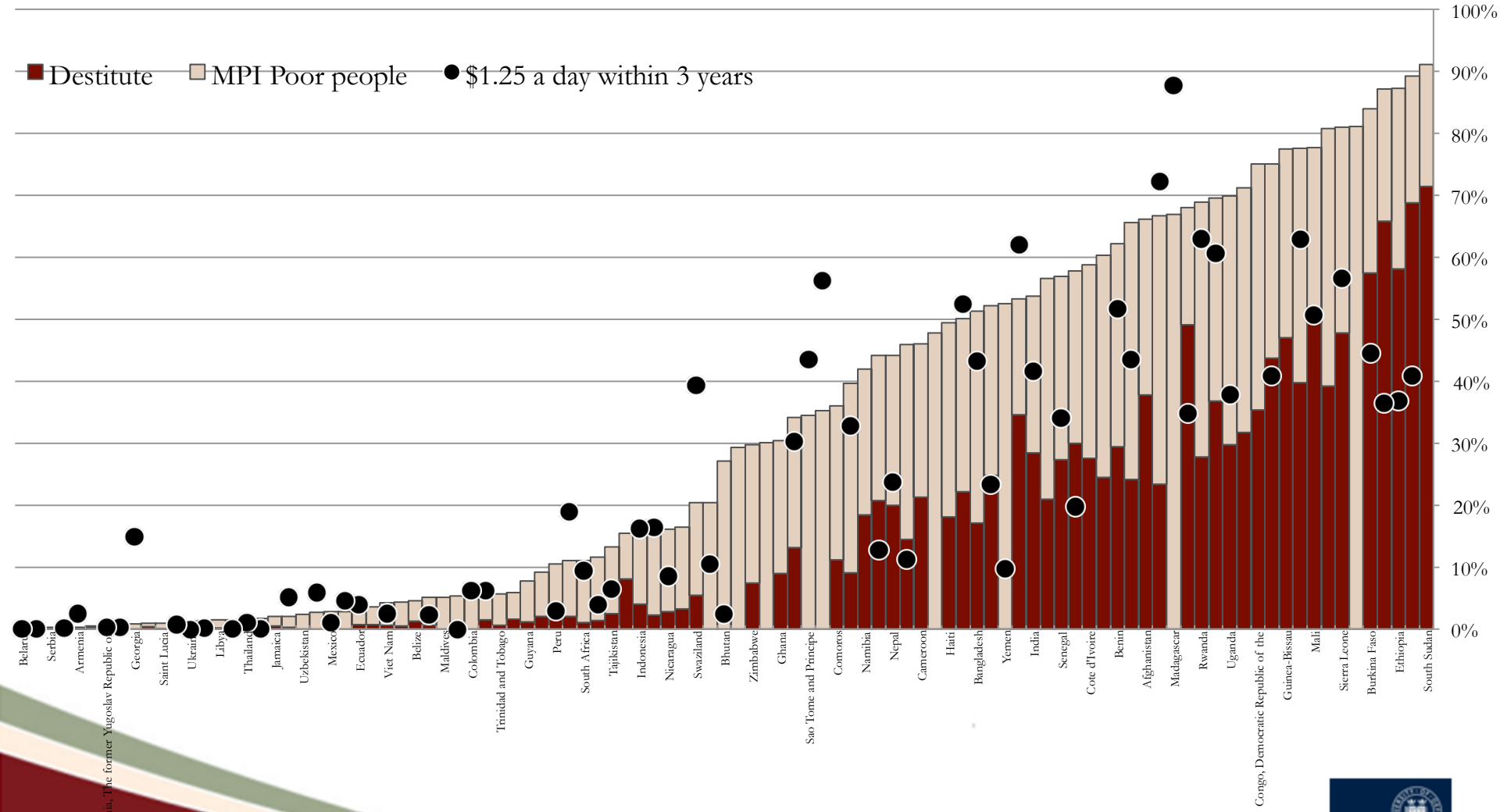




Leave No One Behind

Global MPI: Headline Indicator Complementing Extreme Income Poverty

Comparing the Headcount Ratios of MPI Poor and $1.25/day Poor



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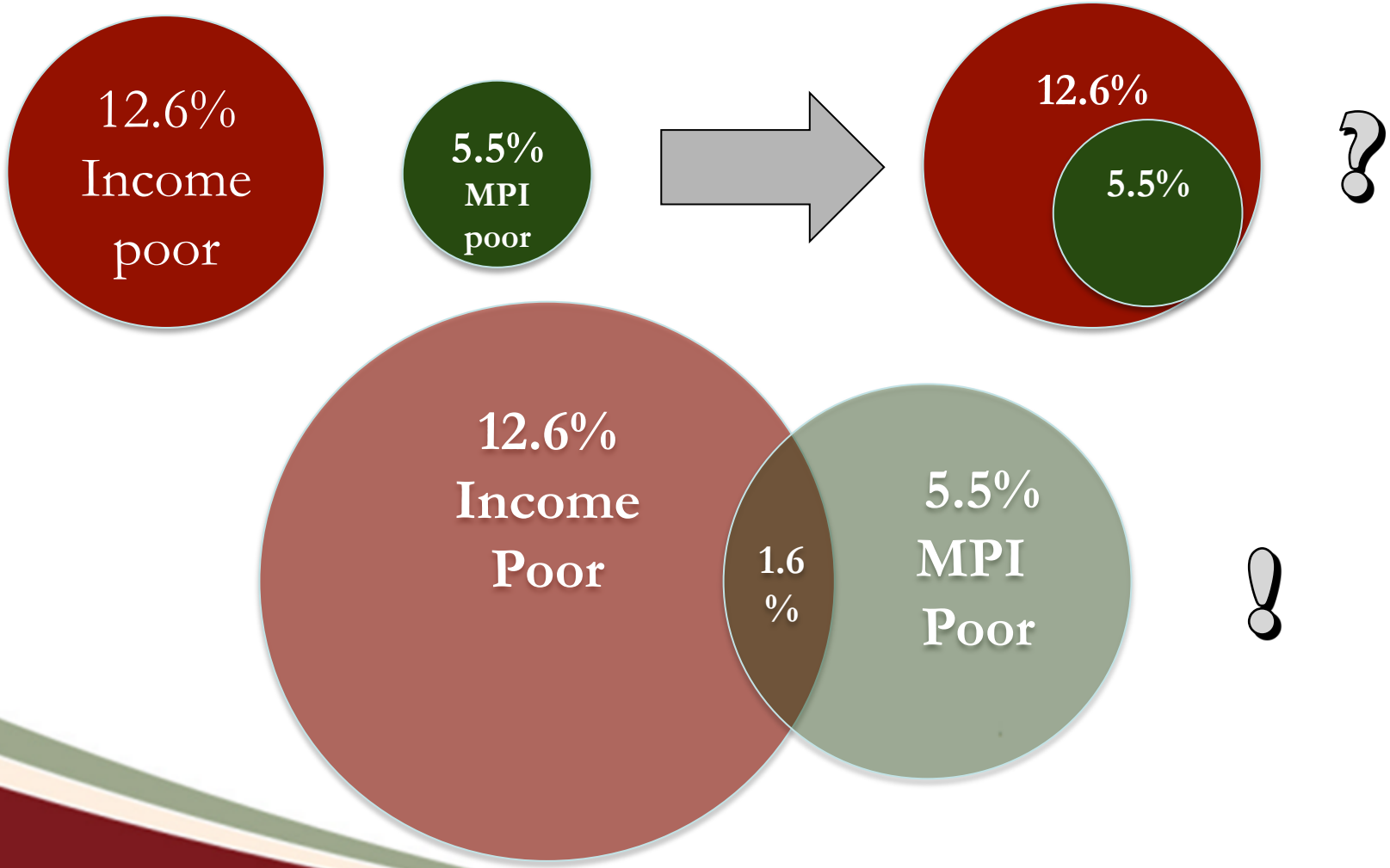
MPI in China complements Income Poverty



How did MPI in India Change?

Alkire, S. & Seth, S. (2015) Multidimensional poverty reduction in India between 1999 and 2006: Where and how? *World Development* 72, 93-108

Two rounds of Demographic Health Surveys (DHS)

- DHS 1998-99 (NFHS II)
- DHS 2005-06 (NFHS III)

Minor adjustments were made for four indicators for strict comparability

- School Attendance, Child Mortality, Nutrition, Floor

India's Change in MPI_I

	1999	2006	Change
MPI_I	0.300	0.251	-0.049*
Incidence (H)	56.8%	48.5%	-8.1%*
Intensity (A)	52.9%	51.7%	-1.2%*

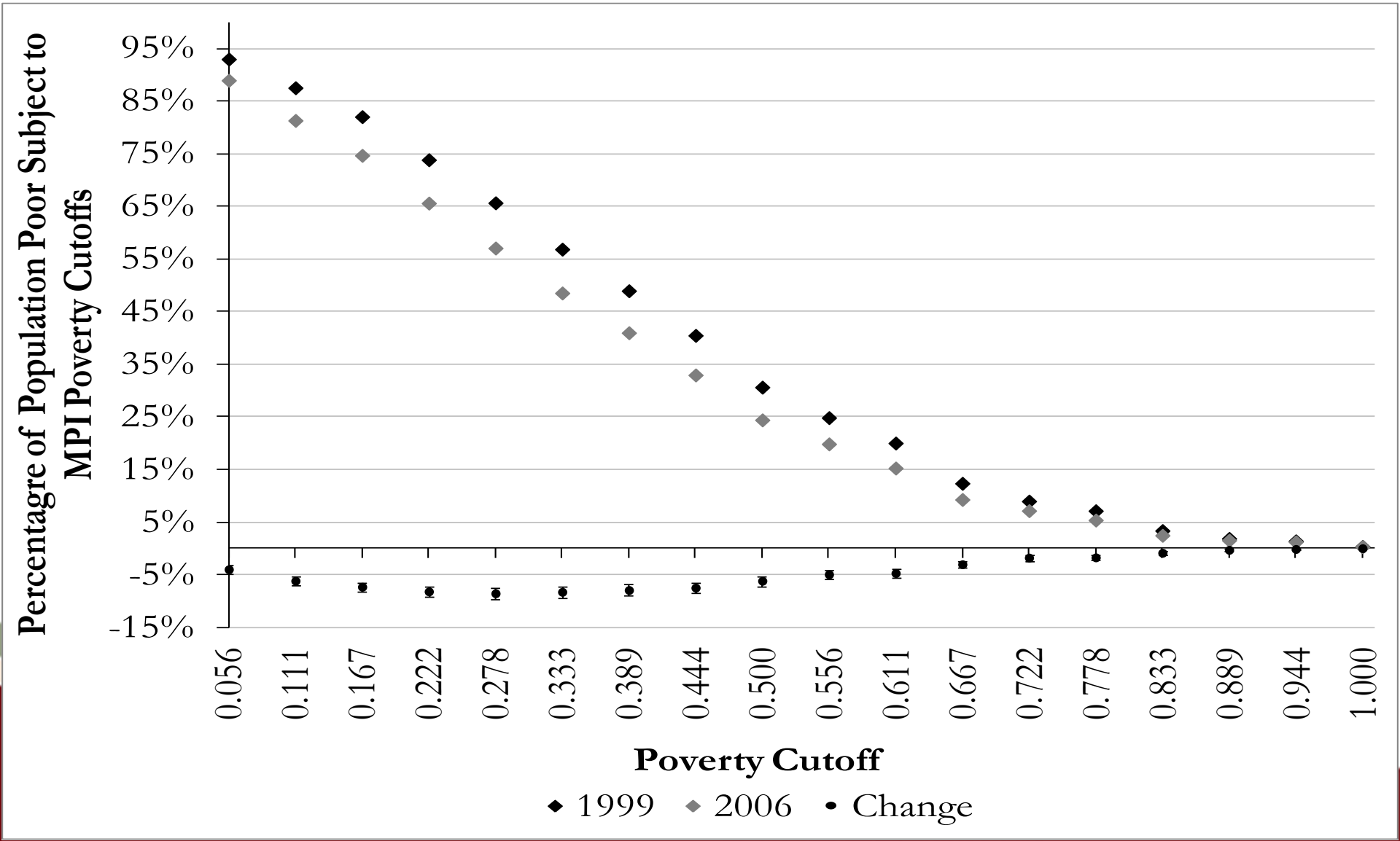
- MPI_I (*Indian MPI*) fell significantly

Details in Alkire and Seth (2015)

- *Per annum* reduction in incidence (H) was **larger** than the reduction in consumption expenditure headcount ratio between 1993/94 and 2004/05

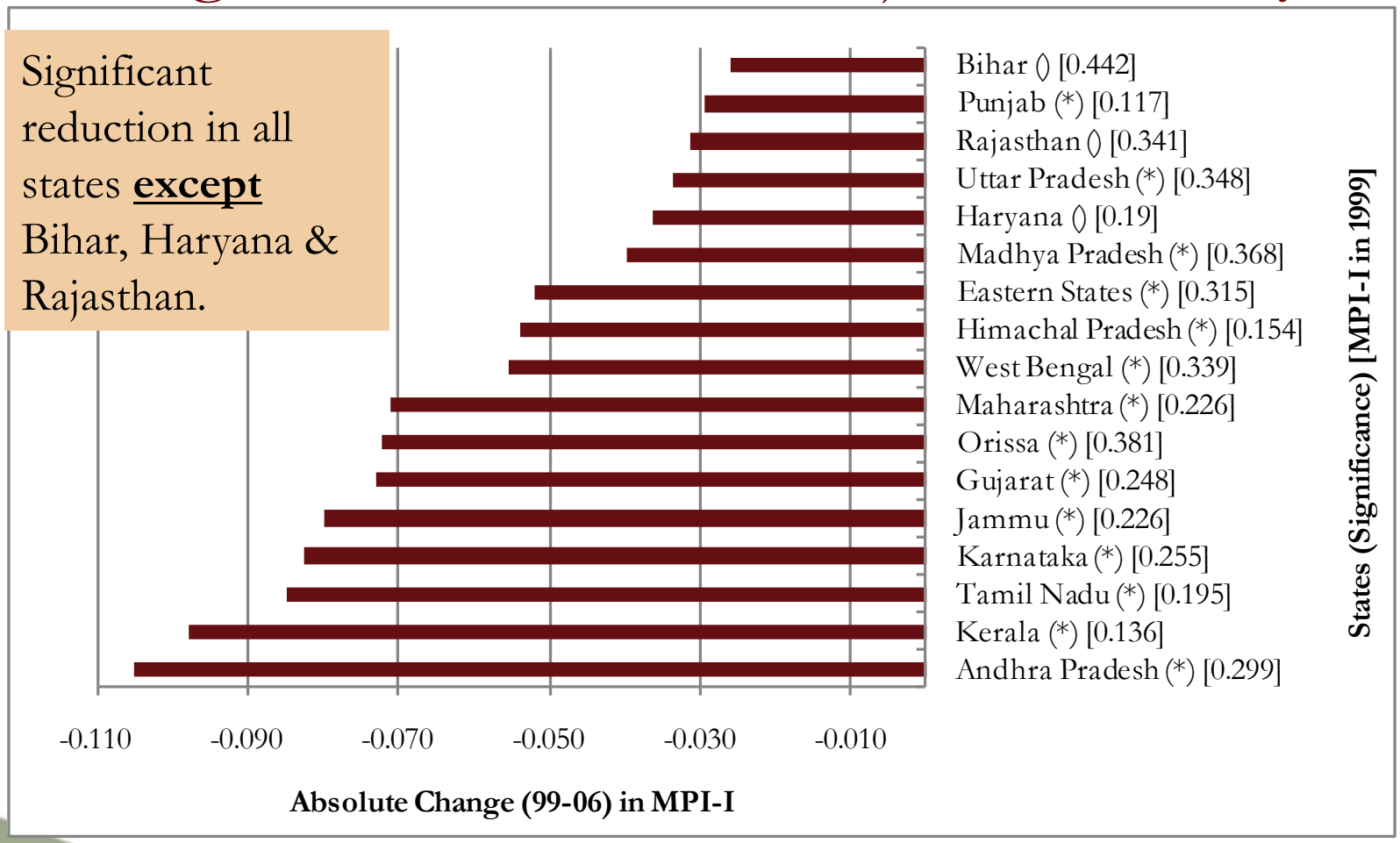
(Tendulkar Committee Report 2009)

H is significantly lower for 0<k≤78%



Absolute Reduction in MPI by Large States – not significant in Bihar, Rajasthan, Haryana

Significant reduction in all states **except** Bihar, Haryana & Rajasthan.



We combined Bihar and Jharkhand, Madhya Pradesh and Chhattishgarh, and Uttar Pradesh and Uttarakhand

Comparison with Change in Income Poverty Headcount Ratio (p.a.)

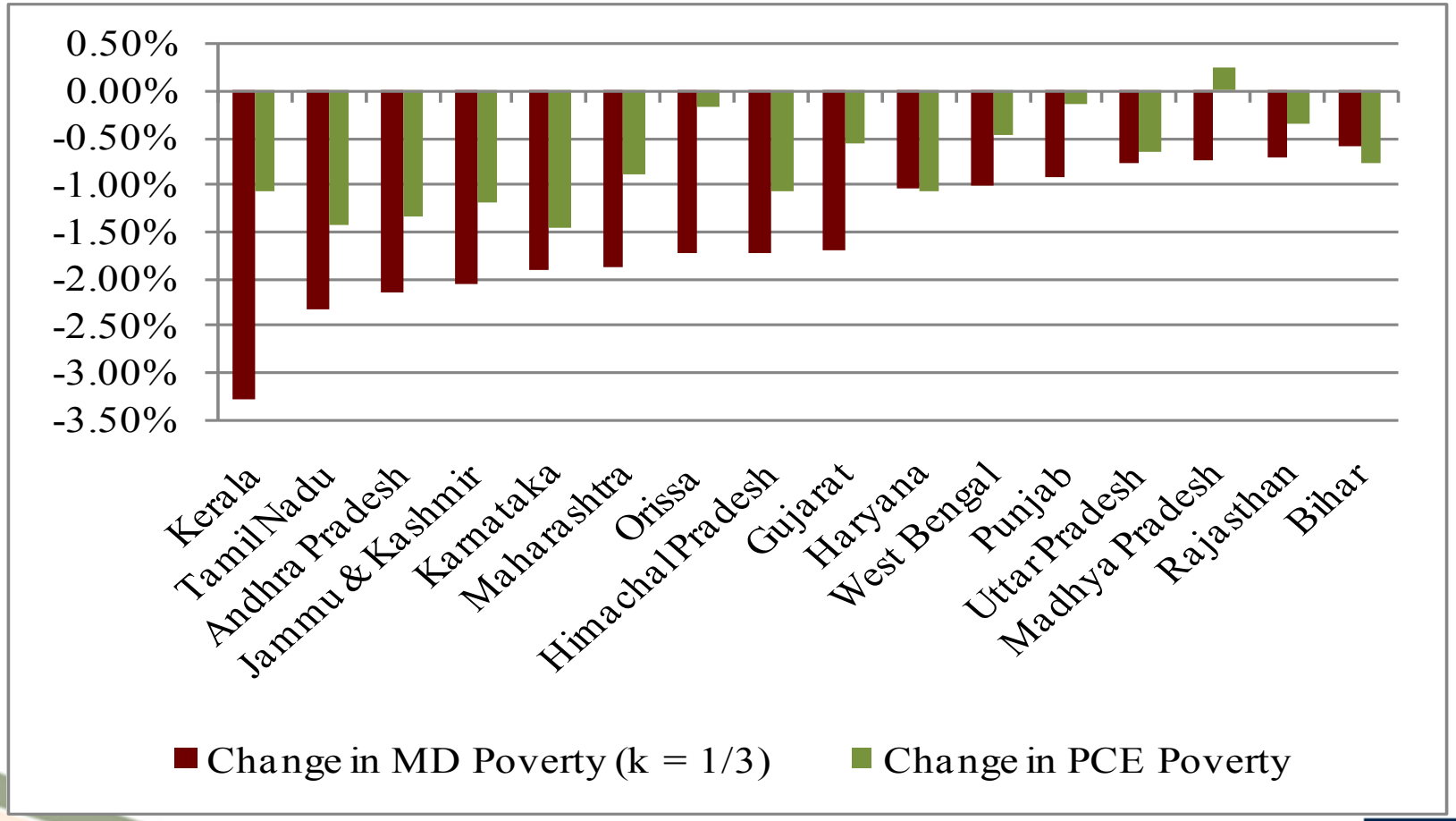
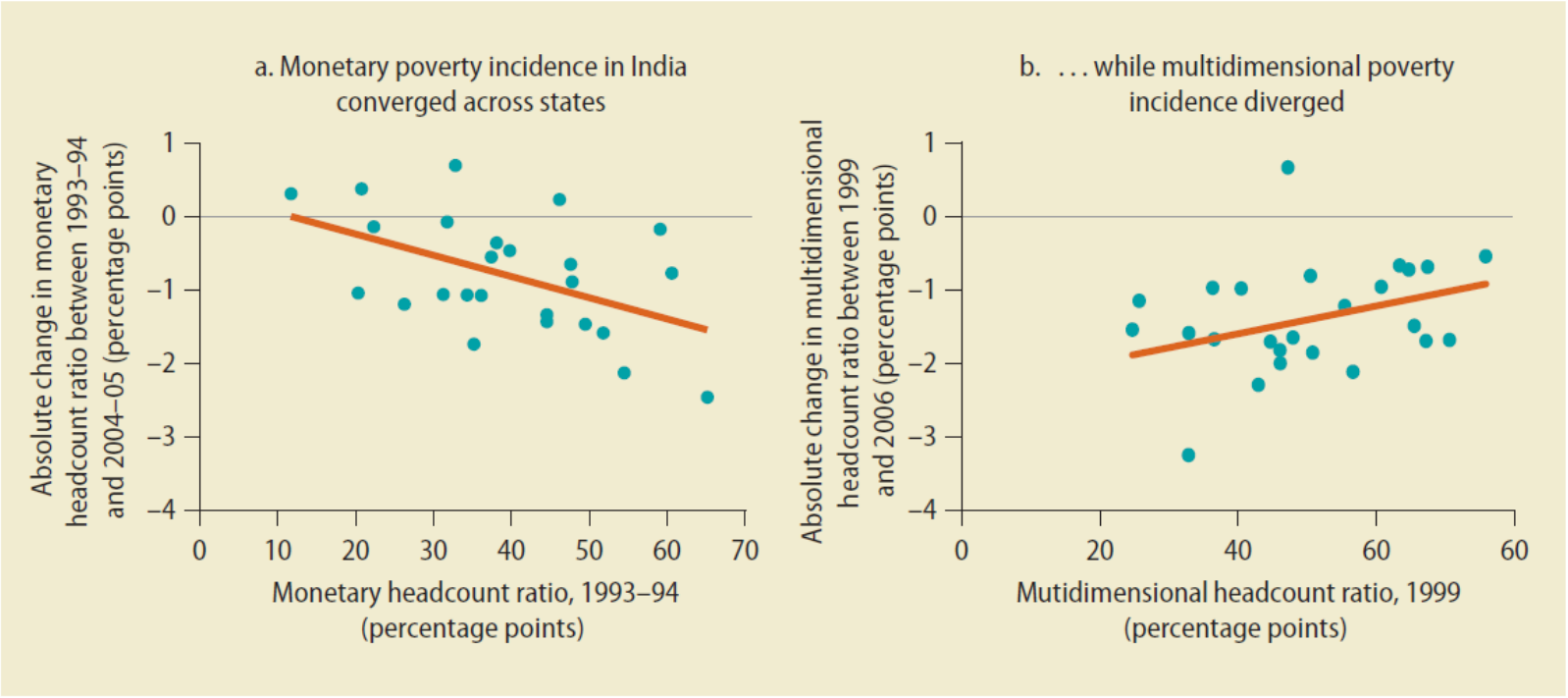
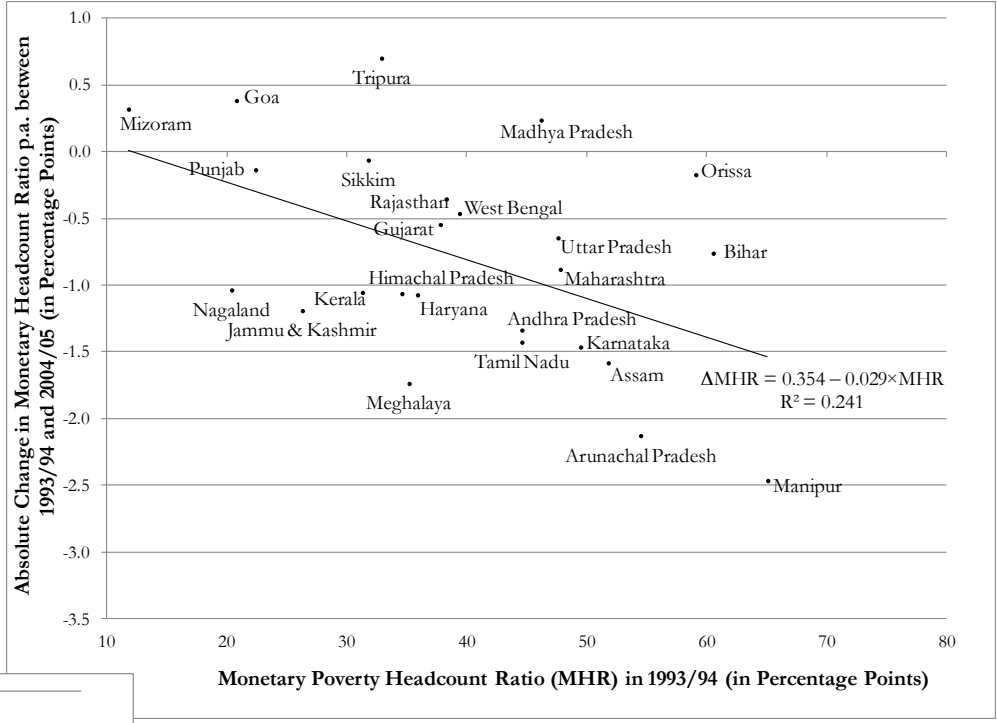


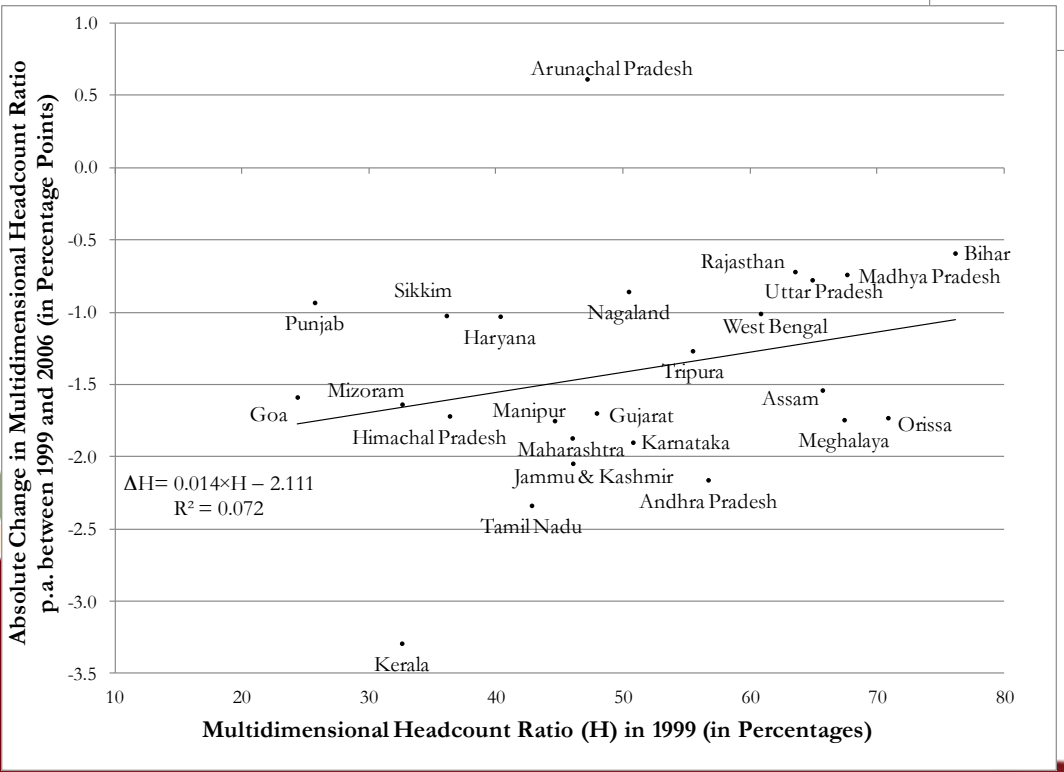
FIGURE 1.5 A multidimensional lens suggests slower poverty reduction progress in India



Source: Alkire and Seth 2013.

Absolute reduction in **monetary** poverty rates across states

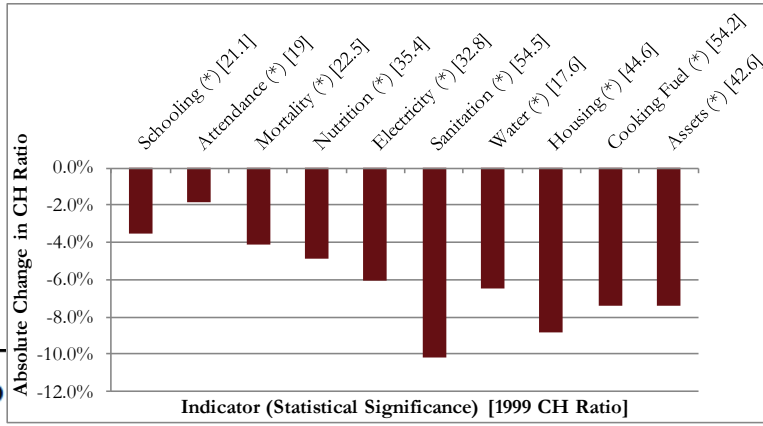




Absolute reduction in **MPI** poverty rates across states

Change in Censored Headcount Ratios

How MPI changed



Indicator	Censored headcount ratio			
	1999	2006	Absolute change	Percentage change
Schooling	21.1%	17.6%	−3.5%***	−16.7%
Attendance	19.0%	17.2%	−1.9%***	−9.9%
Mortality	22.5%	18.4%	−4.1%***	−18.2%
Nutrition	35.4%	30.6%	−4.9%***	−13.7%
Electricity	32.8%	26.8%	−6.0%***	−18.4%
Sanitation	54.5%	44.3%	−10.2%***	−18.7%
Water	17.6%	11.1%	−6.5%***	−37.0%
Housing	44.6%	35.8%	−8.9%***	−19.9%
Cooking Fuel	54.2%	46.7%	−7.4%***	−13.7%
Assets	42.6%	35.2%	−7.4%***	−17.4%

The statistical tests of differences are one-tailed tests.
*** Statistically significant at $\alpha = 1\%$.
** Statistically significant at $\alpha = 5\%$.
* Statistically significant at $\alpha = 10\%$.

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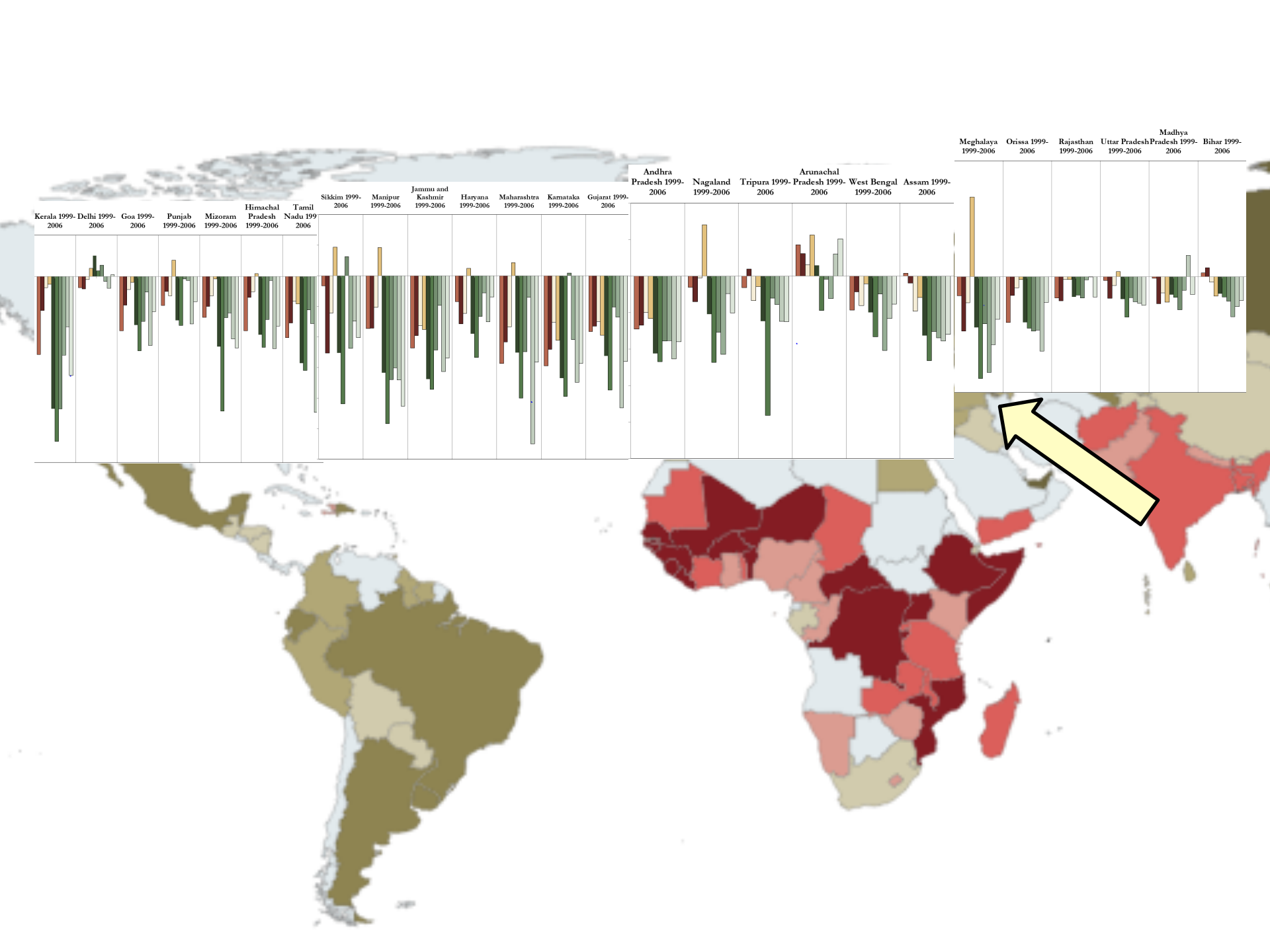
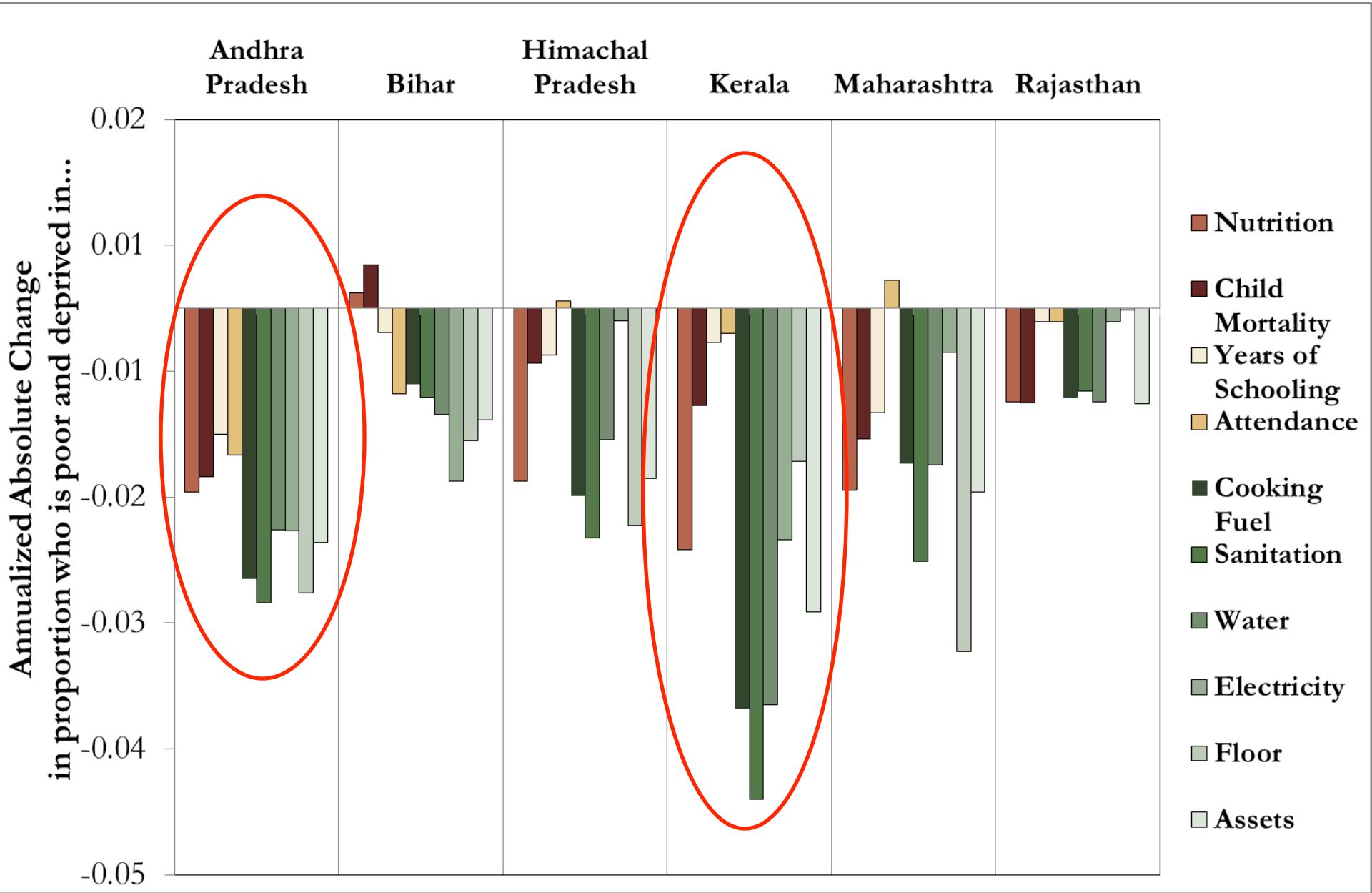

Kerala 1999-2006
Delhi 1999-2006
Goa 1999-2006
Punjab 1999-2006
Mizoram 1999-2006
Himachal Pradesh 1999-2006
Tamil Nadu 199 2006
Sikkim 1999-2006
Manipur 1999-2006
Jammu and Kashmir 1999-2006
Haryana 1999-2006
Maharashtra 1999-2006
Karnataka 1999-2006
Gujarat 1999-2006
Andhra Pradesh 1999-2006
Nagaland 1999-2006
Tripura 1999-2006
Arunachal Pradesh 1999-2006
West Bengal 1999-2006
Assam 1999-2006
Meghalaya 1999-2006
Orissa 1999-2006
Rajasthan 1999-2006
Uttar Pradesh 1999-2006
Madhya Pradesh 1999-2006
Bihar 1999-2006

Changes in Censored Headcount Ratios



MPIs: Two kinds ~ both useful

National MPIs:

- reflect national contexts and priorities.
- guide policies like targeting and allocation and monitor changes.
- complement (or incorporate) monetary poverty measures
- cannot be compared (like national income poverty measures).

Global MPI:

- presently estimated by OPHI & UNDP's HDRO & some ctries
- can be compared across 117 developing countries ($1.90 – 118)
- reflects SDGs 1-8 and 10 (SHaSA); is SDSN headline indicator.
- could be used by countries who do not yet have national MPI
- baseline indicator for SDG target 1.2 to 'reduce by half'

SDG indicators

- The Global SDGs, adopted on 25 Sept 2015, address poverty as multidimensional, opening space for an MPI.

Target 1.2: by 2030, reduce at least by half the proportion of men, women and children of all ages **living in poverty in all its dimensions** according to national definitions.

Official National MPIs: rising fast

OPHI researchers support policymakers in building and analysing multidimensional poverty measures as official national statistics, tailored to their own contexts. These include, for example:

- **Mexico** – The first national MPI, with dimensions based on social rights (2009).
- **Bhutan** – A MPI complementing the Gross National Happiness Index (2010).
- **Colombia** – A pioneering national MPI monitoring a development plan (2011).
- **Chile** – An MPI the reflects a cross-party set of priorities (2015).
- **Costa Rica** – An MPI used to align allocation with national goals (2015)
- **El Salvador** – An MPI based on inputs from the 'protagonists' of poverty (2015)
- **Ecuador** – An MPI reflecting political commitment to *Buen Vivir* (Feb 2016)

Coming soon: Three measures to be launched in the first half of 2016 – one each in Latin America, Africa and South Asia

Other Applications:

In addition, OPHI's work - which won the ESRC Impact award in 2014 – includes:

- **Global Multidimensional Poverty Index (MPI)** – With the UNDP's Human Development Report Office, OPHI created an international measure of acute poverty covering over 100 developing countries using the AF method, and OPHI have updated it continually with new data and analysis. UNDP's flagship *Human Development Report* has released the Global MPI estimated by OPHI since 2010. The SDGs list now includes multidimensional poverty alongside $1.90/day measures.
- **Gross National Happiness (GNH) Index, Bhutan** – The GNH index was released by the Royal Government of Bhutan; and updated in 2012 and 2015. It uses AF methodology and OPHI are honoured to co-author the documents.
- **The Women's Empowerment in Agriculture Index** – With the US Agency for International Development (USAID) and the International Food Policy Research Institute (IFPRI), OPHI developed a performance-monitoring tool using the AF method, which has been implemented in over 16 countries, and are now involved in the next phase of work. .

Complementing Global MPI: National Measures

MPPN has 40 countries, plus international agencies, in 2015 (30 in 2014, 22 in 2013)

ISFD - SESRIC - OPHI

WORKSHOP ON MULTIDIMENSIONAL POVERTY MEASUREMENT

DAKAR, 30 NOVEMBRE AU 06 DECEMBRE 2015