Multidimensional Poverty Indices (MPIs) as Policy Tools

Sabina Alkire

6th Annual MPPN Meeting in Johannesburg

29 October 2018

Tabita, Kenya   Rabiya, India   Stéphanie, Madagascar   Agathe, Madagascar   Dalma, Kenya   Ann-Sophia, Kenya   Valérie, Madagascar

What is an MPI?

Multidimensional Poverty Index

Human lives are battered and diminished in all kinds of different ways

Nobel Laureate Amartya Sen

Human lives are battered and diminished in all kinds of different ways and the first task… is to acknowledge that deprivations of very different kinds have to be accommodated within a general overarching framework.

Nobel Laureate Amartya Sen

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A National MPI is a

permanent official statistic of poverty, that

reflects **people's experience** of poverty in different forms and dimensions, and

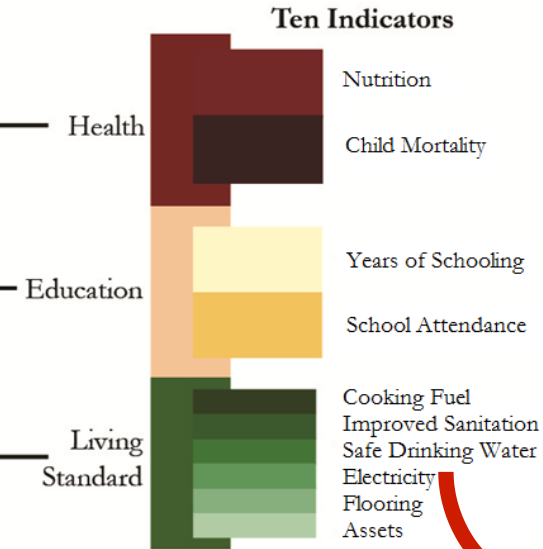reflects the **policy priorities** regarding poverty eradication.

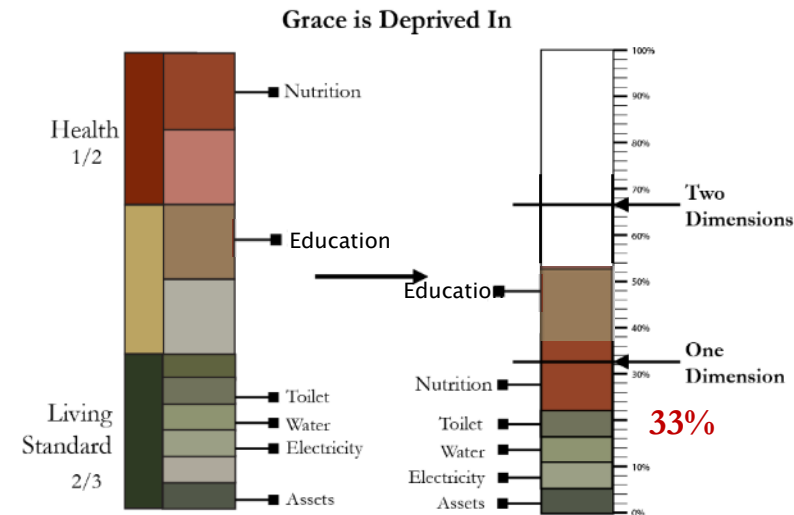*Flexible*　　　　　　*Rigorous*　　　　　　*Transparent*

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It is made of actual people's profiles

1. Select Indicators, Cutoffs, Values

Ten Indicators

Health
- Nutrition
- Child Mortality

Education
- Years of Schooling
- School Attendance

Living Standard
- Cooking Fuel
- Improved Sanitation
- Safe Drinking Water
- Electricity
- Flooring
- Assets

4. Compute counting-based MPI & sub- or partial indices

3. Identify who is poor

Grace is Deprived In

Health 1/2
- Nutrition
- Education

Living Standard 2/3
- Toilet
- Water
- Electricity
- Assets

Education
- Education
- Nutrition
- Toilet
- Water
- Electricity
- Assets

Two Dimensions

One Dimension

33%

2. Build a Deprivation score for each person

10 Indicators

Nutrition	Child Mortality	Years of Schooling	School Attendance	Cooking Fuel	Sanitation	Water	Electricity	Flooring	Asset Ownership
Health		Education		Standard of Living					

3 Dimensions

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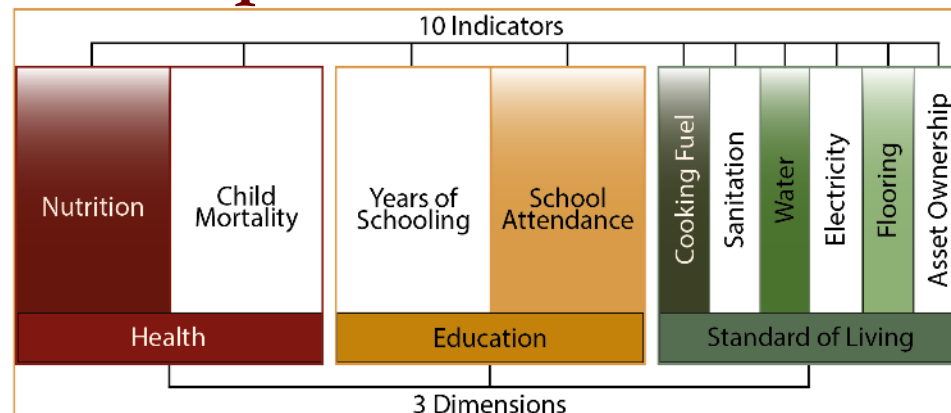
Measuring Poverty

The MPI is an adjusted headcount ratio:

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

where

H is the Headcount ratio (or **Incidence**)

>   The percentage of people who are poor

A is the Average deprivation score of the poor (or **Intensity**)

>   On average how much deprivation a poor person suffers at the same time
>
>   Reflects the *joint distribution* of deprivation

Alkire & Foster JPubE 2011

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For further information:

Statistical

Standard errors and confidence intervals for all statistics

Statistical inference for all comparisons (level/trend)

Validation for component indicators, alone and jointly
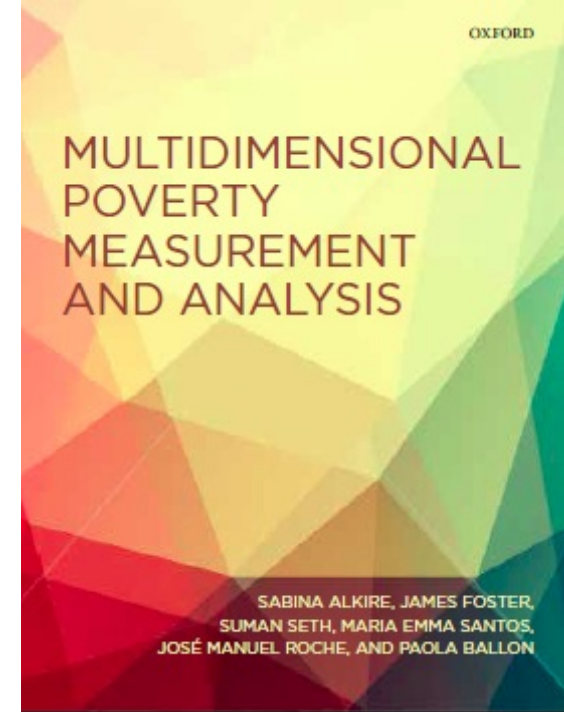
Robustness tests for cutoffs and weights

Axiomatic

Decomposability across populations

Breakdown by indicators or dimensions

Ordinality of data is ok

Others

see *Multidimensional Poverty Measurement and Analysis*
by **Alkire Foster Seth Santos Roche Ballon (OUP 2015)**

How to use an MPI

Since 2009, National MPIs launched as official statistics – most recently:

- **El Salvador** – MPI based on the 'protagonists' of poverty (2015)
- **Costa Rica** – MPI aligns allocation with national goals (2015)
- **Ecuador** –MPI reflects political commitment to *Buen Vivir* (Feb 2016)
- **Chile** – MPI-2 includes dimension of environment & networks (2016)
- **Honduras** – MPI includes work and informs targeting (August 2016)
- **Mozambique** – MPI shows trends from 1996-2014/15 (Oct 2016)
- **Armenia –** MPI reflects complexity & persistence (November 2016)
- **Panama –** annual MPI profiles high disparity subnationally (June 2017)
- **Dominican Republic –** innovative MPI with digital divide (June 2017)
- **Nepal** – National aligned to global MPI (Dec 2017)

The 'N' Year:

Newest National

MPIs:

Nepal

Nigeria

Welcome!

Policy makers are using their national MPIs to:

1. **Complement** monetary poverty statistics
2. **Track poverty** over time (official statistics)
3. **Allocate resources** by sector and by region
4. **Target** marginalized regions, groups, or households
5. **Coordinate** policy across sectors and subnational levels
6. **Adjust** policies by what works (measure to manage)
7. **Leave No One Behind** see the poorest & track trends
8. **Be Transparent** so all stakeholders engage – NGOs,
   - Private Sector etc, all parts of government.

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Most countries launch national monetary and multidimensional poverty measures on the same day. Example: Chile
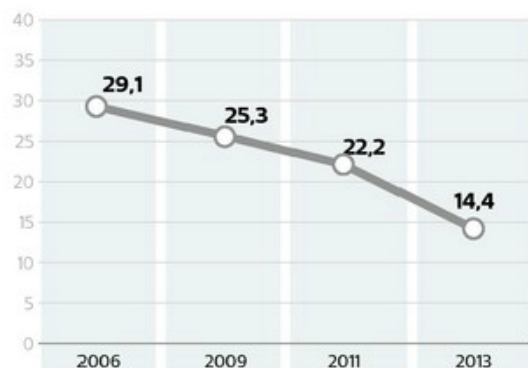
El nuevo estándar oficial de medición

▶▶ Era una de las dos innovaciones prometidas para la Casen 2013. "Nos hemos puesto más exigentes", dijo la ministra de Desarrollo Social, María Fernanda Villegas, al referirse a la nueva metodología que se aplicará para medir los índices de pobreza y de pobreza extrema en el país. Este estándar constituirá desde ahora el reporte oficial del gobierno.

Según detalló la secretaria de Estado, con este nuevo criterio en 2013 una persona estaba en situación de pobreza si recibía un ingreso mensual inferior a $ 136.911. Esto representa un incremento de 107% respecto del estándar que regía bajo la forma tradicional, situado en $ 66.084 por individuo.

"Esto muestra con toda claridad lo que nos decía la gente; que no era posible considerar a alguien no pobre porque ganaba o tenía recursos por 66 mil pesos", aseveró la titular de Desarrollo Social.

De la misma forma, una persona es indigente o está en extrema pobreza si su ingreso es menor a $ 91.274. Bajo el mecanismo tradicional, la canasta básica de alimentos que determinaba esta condición equivalía a un ingreso mensual bajo $ 51.549.

La modificación se aplica también para hogares compuestos por dos, tres y cuatro personas. Por ejemplo, en el caso de una familia de cuatro integrantes, la línea de pobreza sube de $ 264.336 a $ 361.310, mientras que para la pobreza extrema se eleva de $ 158 mil a $ 240 mil, es decir, crece 51,5%.

El nuevo estándar fue aplicado por el gobierno en la medición de pobreza, que se estableció en 14,4%. Además, se construyeron cifras comparativas hacia atrás hasta 2006, estableciendo que sieta años antes, esa tasa estaba en 29,1% (ver infografía).

Evolución del porcentaje de personas en situación de pobreza por ingresos basados en metodología nueva

FUENTE: Casen 2013.

LA TERCERA

La pobreza multidimensional: 20,4%

▶▶ Medir la vulnerabilidad social más allá del factor de ingresos económicos es a lo que apunta la nueva metodología incorporada a la Encuesta Casen 2013, denominada "pobreza multidimensional".

Se trata de un sistema que contempla cuatro dimensiones: educación; salud; vivienda y trabajo, y seguridad social. Cada uno de ellos contiene tres indicadores, los que se ponderan con un 8,33%. Por ejemplo, en el caso del factor salud los indicadores que se consideran para determinar el nivel de vulnerabilidad son: malnutrición en niños de cero a seis años; adscripción al sistema de salud y prestaciones de atención.

De dicho modo se determinará la existencia de pobreza multidimensional cuando las carencias sumen un 25% o más en los indicadores que componen la medida.

"Esta nueva mirada nos permite ahondar en más detalle en la situación en la que viven los hogares en nuestro país, sea tanto por la falta de ingresos necesarios para adquirir una canasta básica de consumo, como por sufrir carencias en otras dimensiones relevantes", explicó la ministra de Desarrollo Social, María Fernanda Villegas.

A modo de ejemplo, indicó que "en servicio básicos, Chile tiene unos estándares extremadamente elevados, pero eso no significa que haya gente que no esté carente de ellos".

Según los resultados entregados por Desarrollo Social, en 2013 un 20,4% de los chilenos se encontraba en situación de pobreza multidimensional. De ese total, un 5,5% está en condición de pobreza multidimensional y por ingresos, mientras un 14,9% está sólo en situación de pobreza multidimensional.

POBREZA MULTIDIMENSIONAL

Porcentaje de personas en situación de pobreza multidimensional según situación de pobreza por ingresos, año 2009-2013

- Personas que se encuentran sólo en situación de pobreza multidimensional
- Personas que se encuentran en situación de pobreza multidimensional y de pobreza por ingresos

FUENTE: Casen 2013.

LA TERCERA
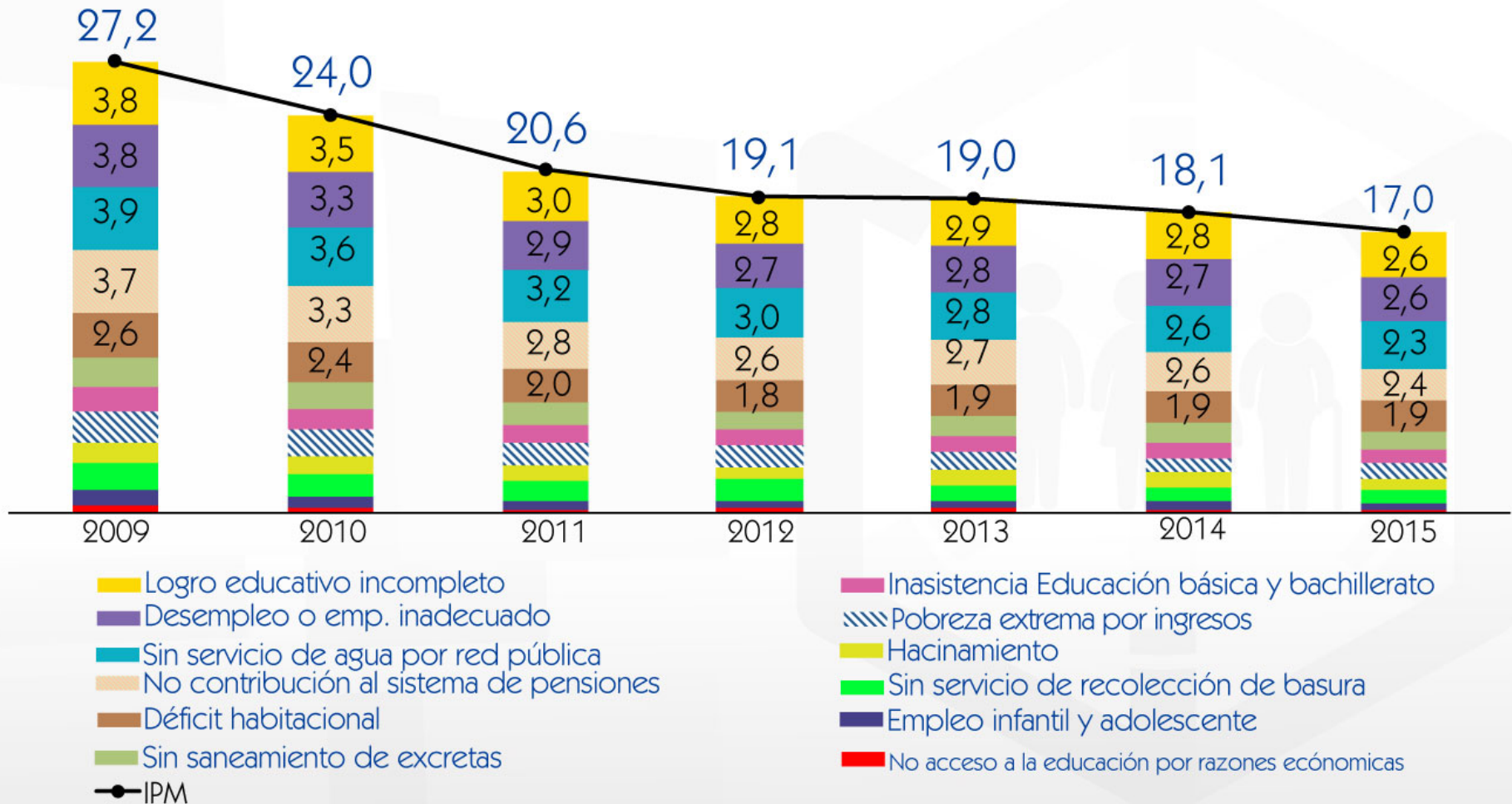
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Costa Rica
Incidencia por Región

Costa Rica:

Starting MPI: used to diagnose
Mismatches between objectives &
Programmes/allocations

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PUENTE
AL DESARROLLO

Does our allocation match our levels of poverty by region? (Not yet)

Región	Intensidad	Incidencia	Presupuesto Ejecutado
Central	25.86	15.17	₡205.544.667.095,39
Chorotega	29.01	31.37	₡57.097.420.823,67
Pacífico Central	26.74	26.21	₡47.887.090.732,15
Brunca	27.61	32.69	₡75.485.318.073,71
Huetar Atlántica	28.29	35.80	₡59.669.482.377,32
Huetar Norte	29.08	32.73	₡60.436.320.304,36
Nacional	27.22	21.66	₡514.225.278.725,60

Costa Rica: Does our allocation match our levels of poverty by sector? (Not yet)

Mostrar Datos de 2014

Indicador	% Carencia	Presupuesto Ejecutado
Sin acceso a educación	22,8%	₡217,477,650,077.62
Rezago educativo	27,6%	₡0
Sin bachillerato	27,6%	₡0
Bajo capital humano	61,3%	₡8,570,200,000.00

MPI: used to diagnose Mismatches between objectives & Programmes/allocations

Costa Rica: Because the 2015 MPI showed big mismatches between policy objectives and allocations, the President issued a Presidential Decree that MPI must be part of allocation formulae in the future.

MPI reduced more rapidly 2016-17

MPI: used to diagnose Mismatches between objectives & Programmes/allocations

COSTA RICA
GOBIERNO DE LA REPÚBLICA

PUENTE
AL DESARROLLO

19 Sept 2017: Prime Minister of Bhutan at UNGA

"In Bhutan, the national MPI is also used as a policy tool and used as a basis to allocate resources across sectors, our districts, and our villages effectively. We have used it to identify people's needs for infrastructure and social services in the remotest areas."

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Nigeria: Higher levels of multidimensional poverty in the North Region

- Sokogo, Jigawa and Yobe are the three states with the highest levels of MPI.

- 2018 MPI based on 2016-17 data

Fig.2.5 State level Multidimensional Poverty Index – UNDP 2018

MPI
- 0.06 – 0.12
- 0.13 – 0.18
- 0.19 – 0.27
- 0.28 – 0.35
- 0.35 – 0.45
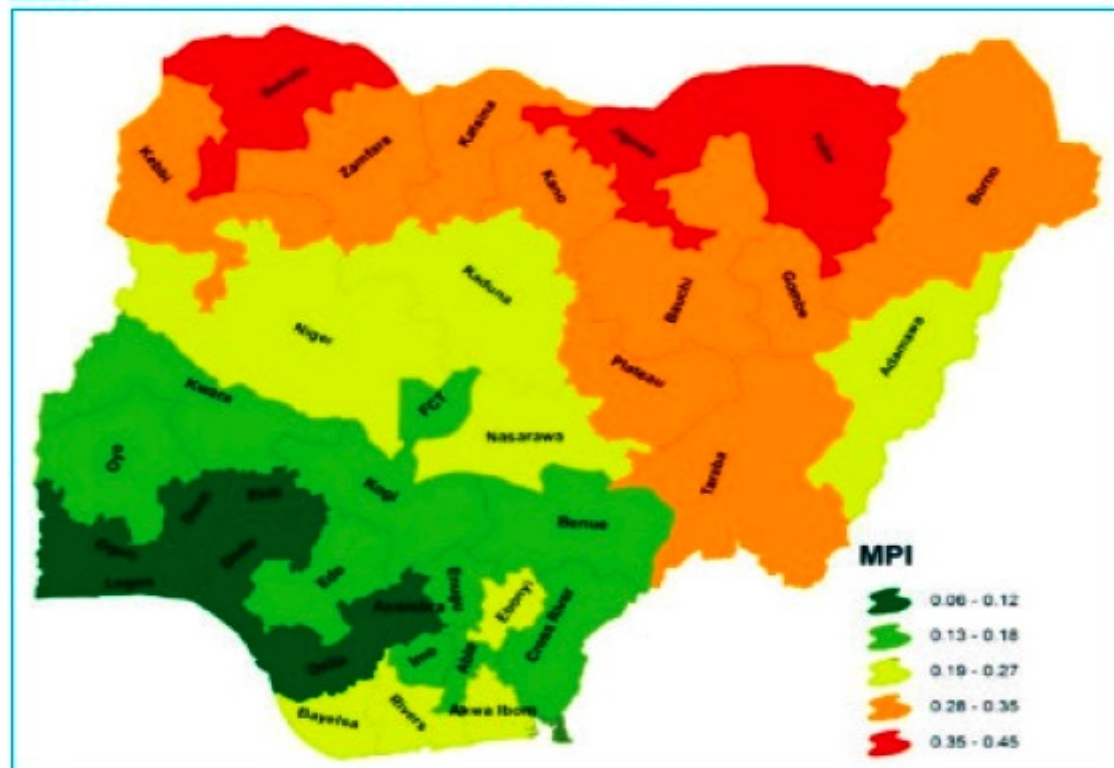
Panama 2017: MPI rates vary nationally from 4.2% to over 90% in two Indigenous Comarcas

Leave No One Behind
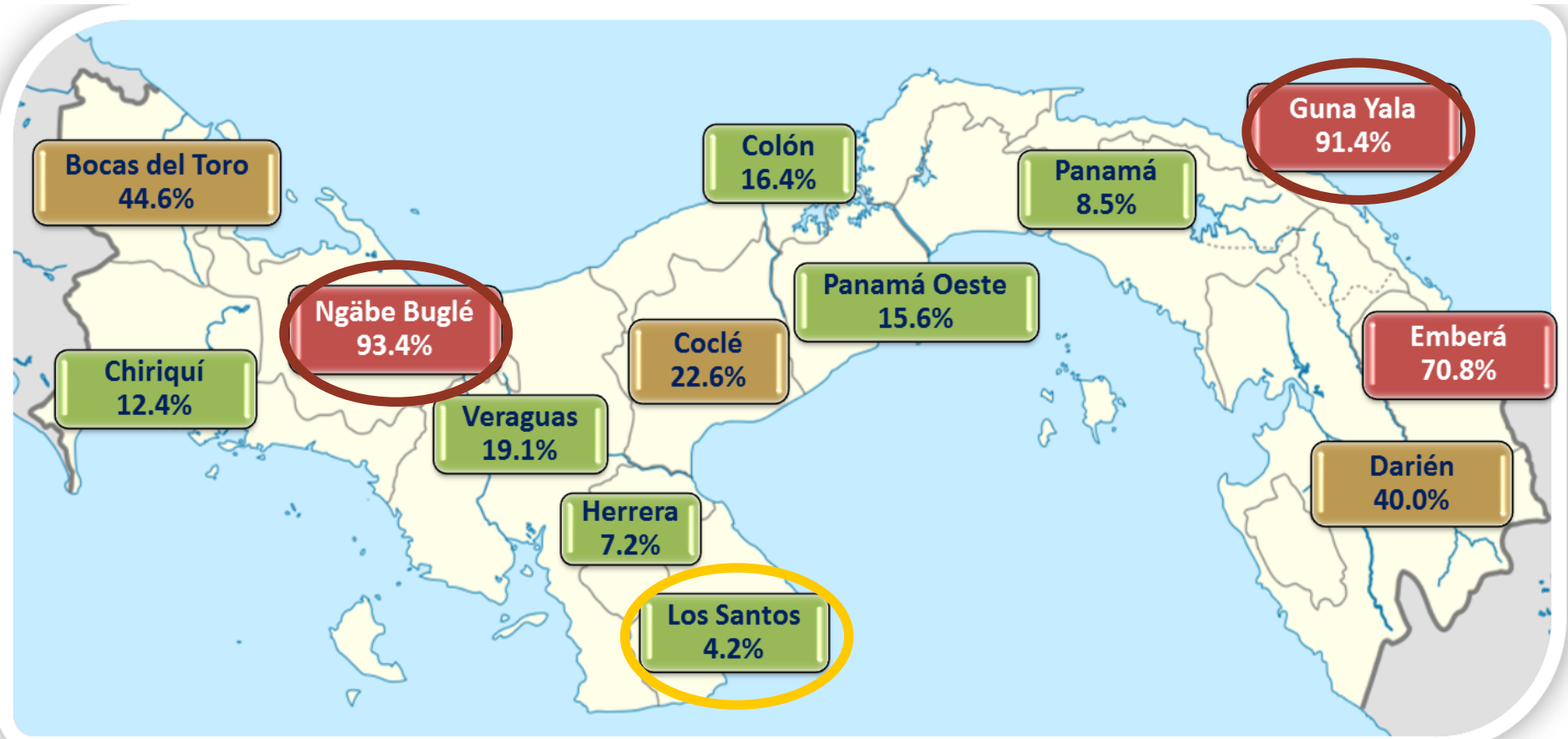
THE 13TH FIVE-YEAR PLAN

FOR ECONOMIC AND SOCIAL DEVELOPMENT OF THE PEOPLE'S REPUBLIC OF CHINA

(2016–2020)

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In keeping with the need to ensure that poverty reduction efforts are well-defined in terms of targeting population, designing projects, using funds, implementing measures, appointing village personnel, and achieving outcomes, we will work to see that assistance programs become more effective so that people living in poverty in rural areas have adequate food and clothing and are able to access compulsory education, basic medical care, and safe housing.

Dimensions   CHINA

Compulsory Education (9 years)

Basic Medical Care

Safe Housing (includes water etc)

Adequate Food and Clothing

Sufficient income and livelihood.

Aim: end this poverty by 2020.

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Colombia

We have new intersectoral articulations:

Poverty Roundtable

To follow up the control panels for each of the indicators

15 Members

Meet with the **President**

Review the **control panel**

Social Inclusion and Productive Table

Design, identify and define programmes to meet the objectives

9 Members

Different levels of articulation, with meetings weely, fortnightly, nad monthly

Specific Goals

Focus on **double Inclusion**

Pobreza	Linea Base PND 2008	Dato 2011	Dato 2012	Análisis	Goal	
MPI (Multidimensional Poverty)	34.7%	29.4%	27.0%	●	22.5%	
Educational achievement (≥15 yrs)	58.8%	54.6%	53.1%	●	52.8%	
Literacy (≥15 yrs)	14.2%	12.0%	12.1%	● ★	12.0%	
School attendance (6-16)	5.4%	4.8%	4.1%	●	3.5%	***
No school lag (7-17)	33.4%	34.1%	33.3%	●	33.1%	
Access to child care services (0-5)	12.1%	10.8%	9.4%	●	10.6%	***
Children not working (12-17)	5.5%	4.5%	3.7%	●	2.9%	***
Long-term unemployment	9.6%	9.1%	10.0%	● ★	9.3%	***
Formal employment	80.6%	80.4%	80.0%	●	74.7%	
Health insurance	24.2%	19.0%	17.9%	●	0.5%	
Access to health services	8.9%	8.2%	6.6%	●	2.4%	***
Access to water source	12.9%	12.0%	12.3%	● ★	10.9%	
Adequate sewage system	14.1%	14.5%	12.1%	●	11.3%	***
Adequate floors	7.5%	6.3%	5.9%	●	5.6%	
Adequate external walls	3.1%	3.2%	2.2%	●	2.1%	***
No critical overcrowding	15.7%	14.2%	13.1%	●	8.4%	***

*** Change 2011-2012 est. significant

Colombia

🔴 0%-10% avance   🟡 10%-25% avance   🟢 >25% avance

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FUENTE: DANE

Minister of Health, Colombia

To advance on health, I need the support of my colleagues, as **what they do has a big influence on health.** The actions of the minister of environment, and housing, and drinking water programmes matter; so do the educational attainments of the populations.

We, in the ministry of health, have to find out what happened from our policies and investments. And here the MPI is a monitoring tool. We use the MPI to identify problems, and to inform citizens about the impact of our specific sectoral policies. It **makes change visible.**

Public policy
• Free education
(MinEducación)
• Integral strategy for early childhood
(ICBF)
 "De Cero a Siempre"

2010	2011	2012	2013	2014	2015	2016	2017
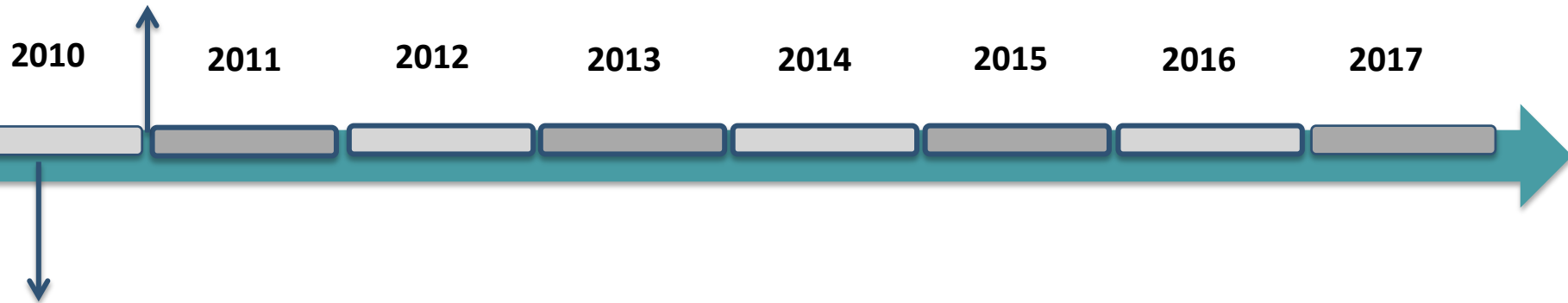
Alerts:
-Educational
achievement
- Early childhood

Public policy
•Free housing
"100.000 Viviendas Gratis" (Ministry of housing)

2010   2011   2012   2013   2014   2015   2016   2017

Alerts:
-Housing conditions
- Decrease on multidimensional poverty slows down

Fuente: Prosperidad Social

Public policy
- Redesign of
 "Mas Familias en Acción" (Social Prosperity)
 higher coverage in rural areas
Unemployment protection mechanism (Ministry Hunger)

| 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 |

Alerts:
-Decrease on income poverty slows down
- Rural urban gaps

Public policy
- Cash transfer program to higher education
"Jóvenes en Acción"
(Social prosperity)

2010   2011   2012   2013   2014   2015   2016   2017

Alerts:
-Social mobility
-Youth inactivity and unemployment

Fuente: Prosperidad Social

Public policy
- National System of food security
- Food security differentiated programs

2010   2011   2012   2013   2014   2015   2016   2017

Alerts:
-Nutritional conditions of children
-Lack of articulation in rural programs

Fuente: Prosperidad Social

Public policy

- Policies to consolidate protective floors for the poor and networks of protection for the vulnerable population

2010   2011   2012   2013   2014   2015   2016   2017

Alerts:

-High vulnerability of people emerging from poverty

Fuente: Prosperidad Social

Public policy:
•Programs with emphasis on the rural , focus on the periphery and differentiation of family support programs
•Strategy "De cero a siempre" becomes law

2010   2011   2012   2013   2014   2015   2016   2017

Alerts:
-Gap growth continues: Colombia remains in the top 10 most unequal countries

Fuente: Prosperidad Social

Fuente: Prosperidad Social

Costa Rica's National MPI Changes 2015-16

Dimension	Indicator	2015	2016	Change	Improve ✅ Worsen ❌
Health	Lack of Health Insurance	63.0	63.4	0.4	❌
	Lack of clean water	19.2	18.8	-0.4	✅
	Lack of sanitation	10.5	11.2	0.7	❌
	Lack of waste disposal	28.5	27.3	-1,2	✅
Education	Not attending education	12.9	12.2	-0.7	✅
	Not at correct age for grade	15.6	15.3	-0.3	✅
	Not completed secondary education	33.4	31.3	-2.1	✅
	Low Human Capital Formation	61.2	60.9	-0.3	✅
Housing and Internet	Inadeqaute roof and flooring materials	42.7	44.3	1.6	❌
	Exterior walls in poor condition	34.4	34.3	-0.1	✅
	Overcrowding	28.9	29.7	0.8	❌
	Without use of the internet	49.9	40.8	-9.1	✅
Work	Long-term unemployment or discouraged	10.8	10.7	-0.1	✅
	Lack of labour rights	52.7	56.8	4.1	❌
	Informal work	28.4	27.3	-1.1	✅
Social	No child care	10.2	10.5	0.3	❌
	Older persons lacking pension	8.5	9.1	0.6	❌
	Persons with disability lacking support	9.0	11.9	2.9	❌
	Out of the labour forcé due to care obligations to the family	22.2	22.4	0.2	❌

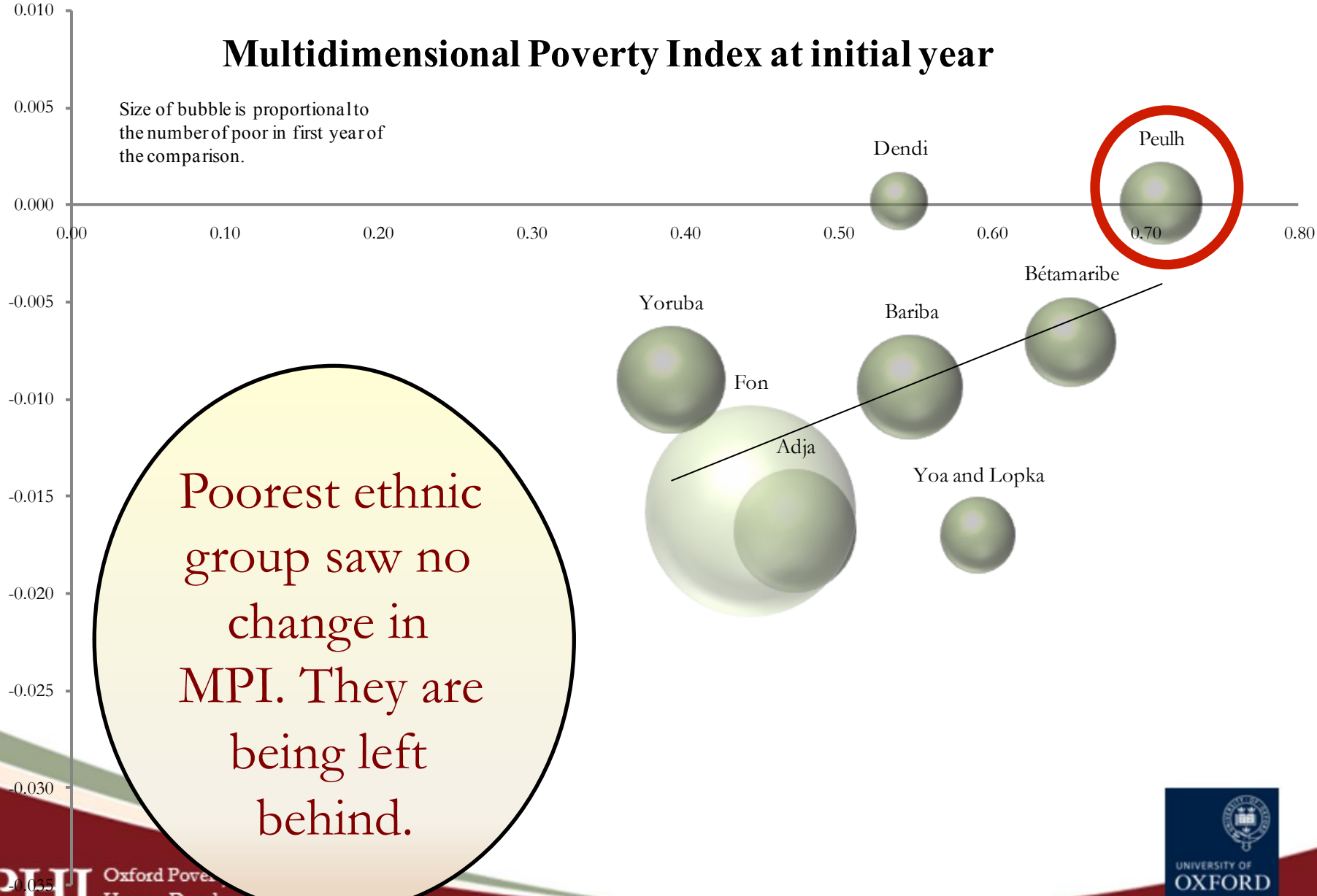# Policy makers are using their national MPIs to:

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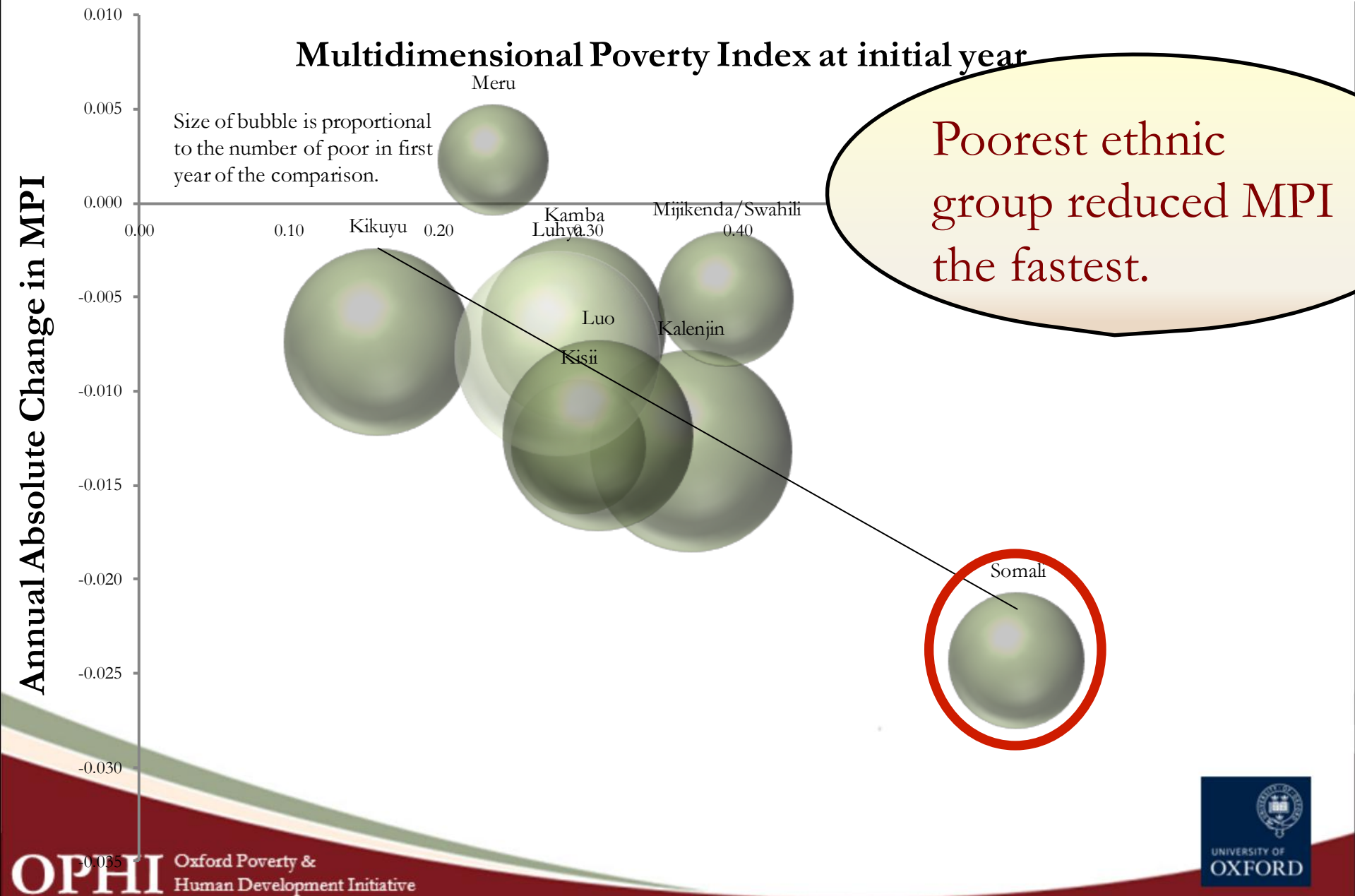8. **Be Transparent** so NGOs, Private Sector, all levels of government, engage.

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Leaving No One Behind- Benin

Leaving No One Behind - Kenya

Multidimensional Poverty Index at initial year

Annual Absolute Change in MPI

Size of bubble is proportional to the number of poor in first year of the comparison.

Meru
Kikuyu
Kamba
Luhya
Mijikenda/Swahili
Luo
Kalenjin
Kisii
Somali

Poorest ethnic group reduced MPI the fastest.

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Pakistan: the poorest district reduced MPI most

Starting MPI value vs Absolute Reduction of MPI
2004-2015
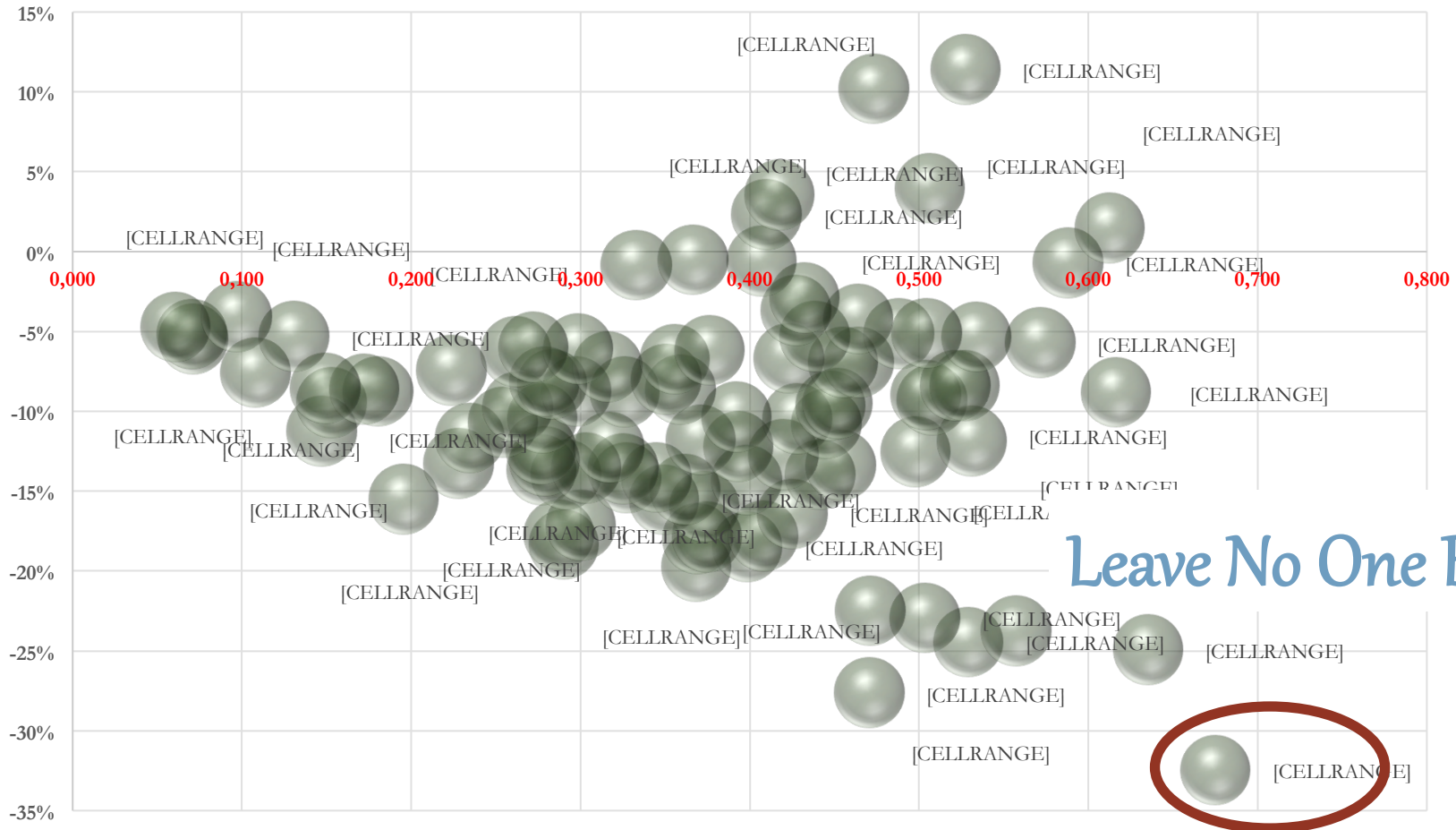
Leave No One Behind

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