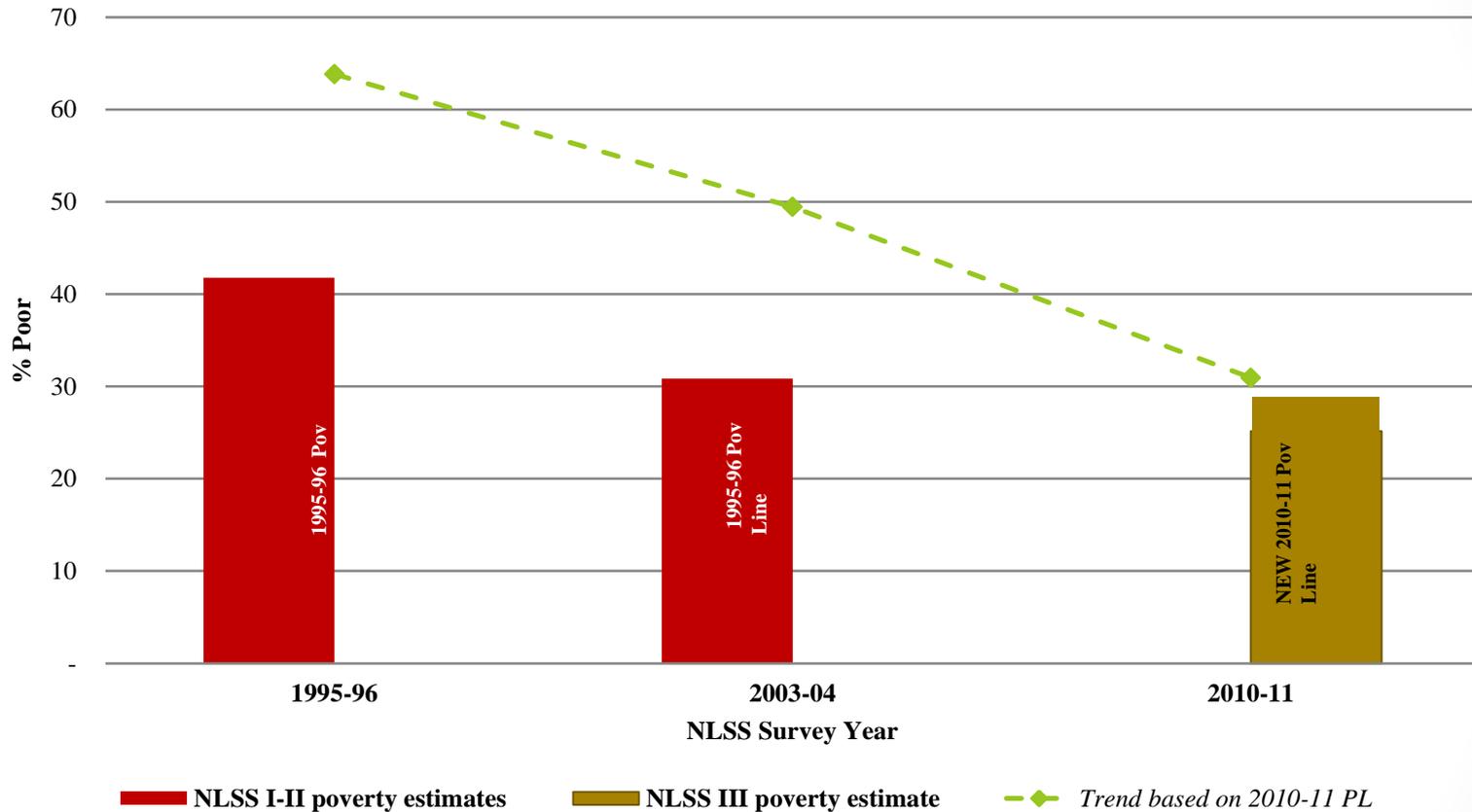


Multidimensionality of poverty in Nepal: Insights from subjective data

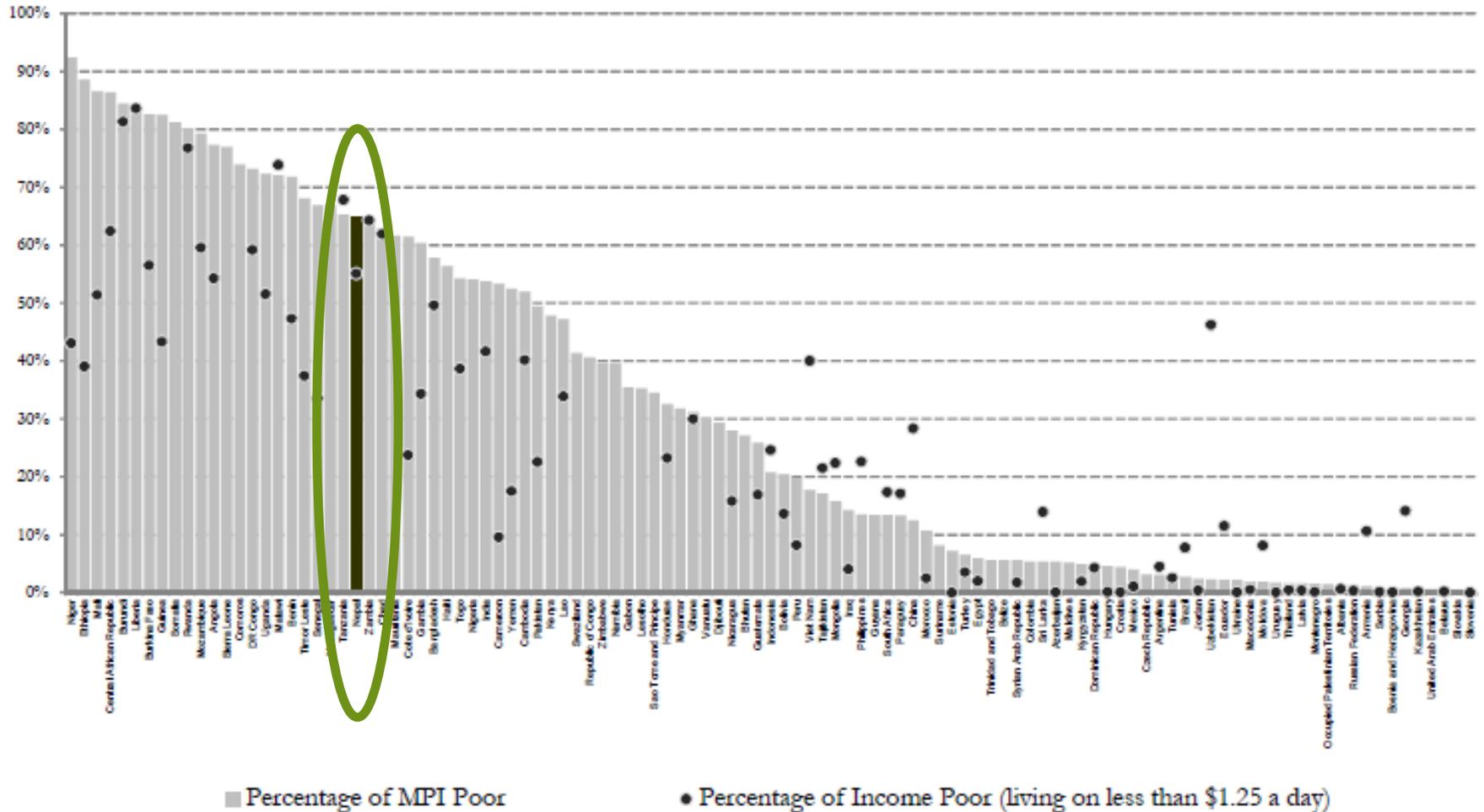
Shabana Mitra

Monetary poverty is falling



Multidimensional poverty has been estimated at 65%

Percentage of Poor People B. Headcounts of MPI Poor and \$1.25/day Poor



Courtesy: UNDP and OPHI

Questions

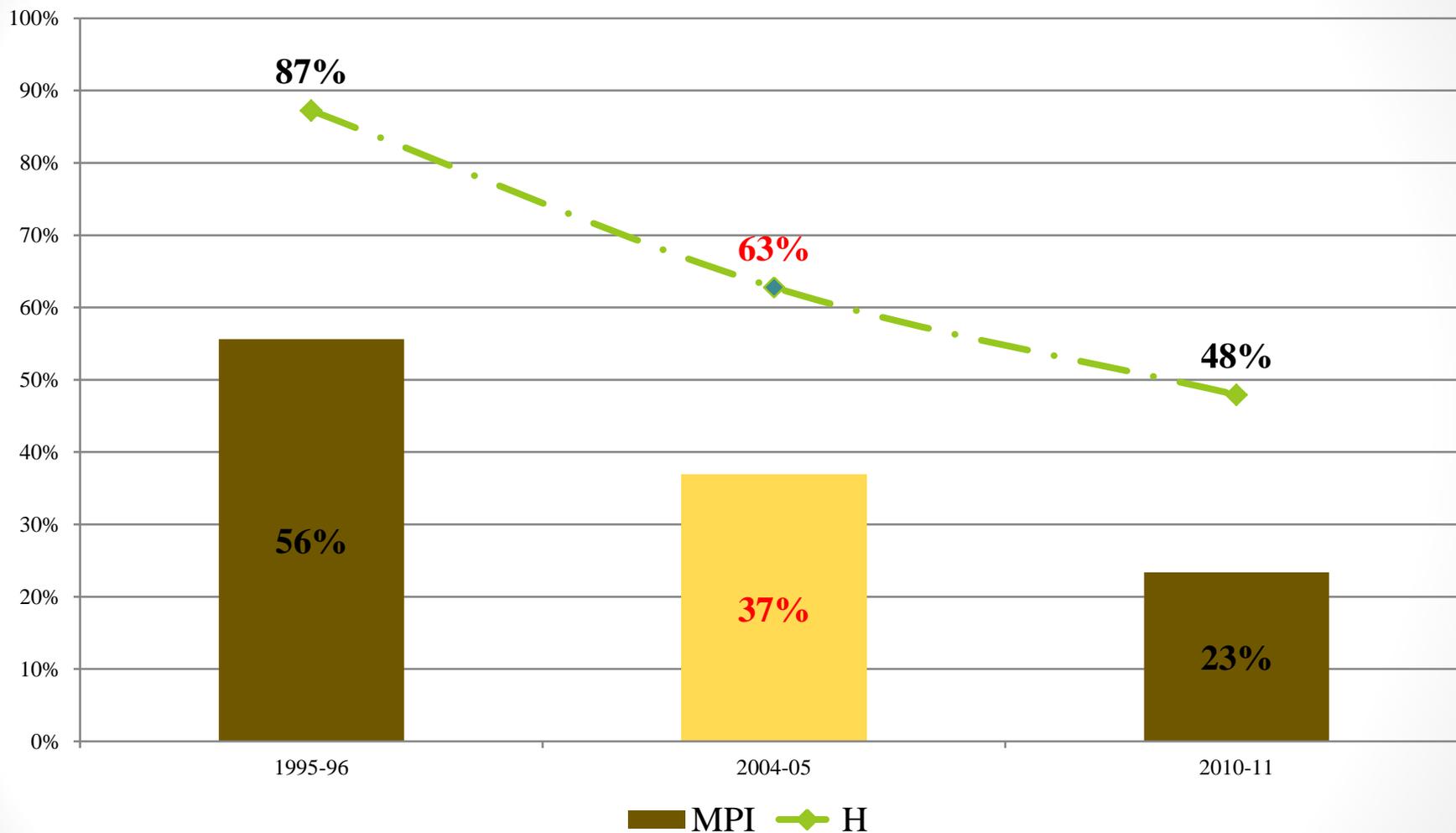
- What about the trends in multidimensional poverty?
 - Has the MPI also seen a similar remarkable decline?
- What if we had a National multidimensional index?
 - Would the same indicators be used as the international one?
 - How do we find the appropriate set of indicators?

Reconstructing the MPI using NLSS data

Dimensions	MPI Indicators	Closest NLSS Indicators
Health	Child Mortality	No women in the household has any history of child mortality
	Nutrition	Malnourished Children
Education	Enrollment	Enrollment
	Years of schooling	At least one adult member has a primary education
Living standards	Cooking fuel	Cooking Fuel
	Sanitation	Sanitation
	Drinking water	Piped water
	Electricity	Electricity
	Material of floor	Material of walls and roof
	Asset Index	Consumption aggregate

Source notes: The orange color are not exact matches of definitions but closest available variables. The ones in black are defined identically.

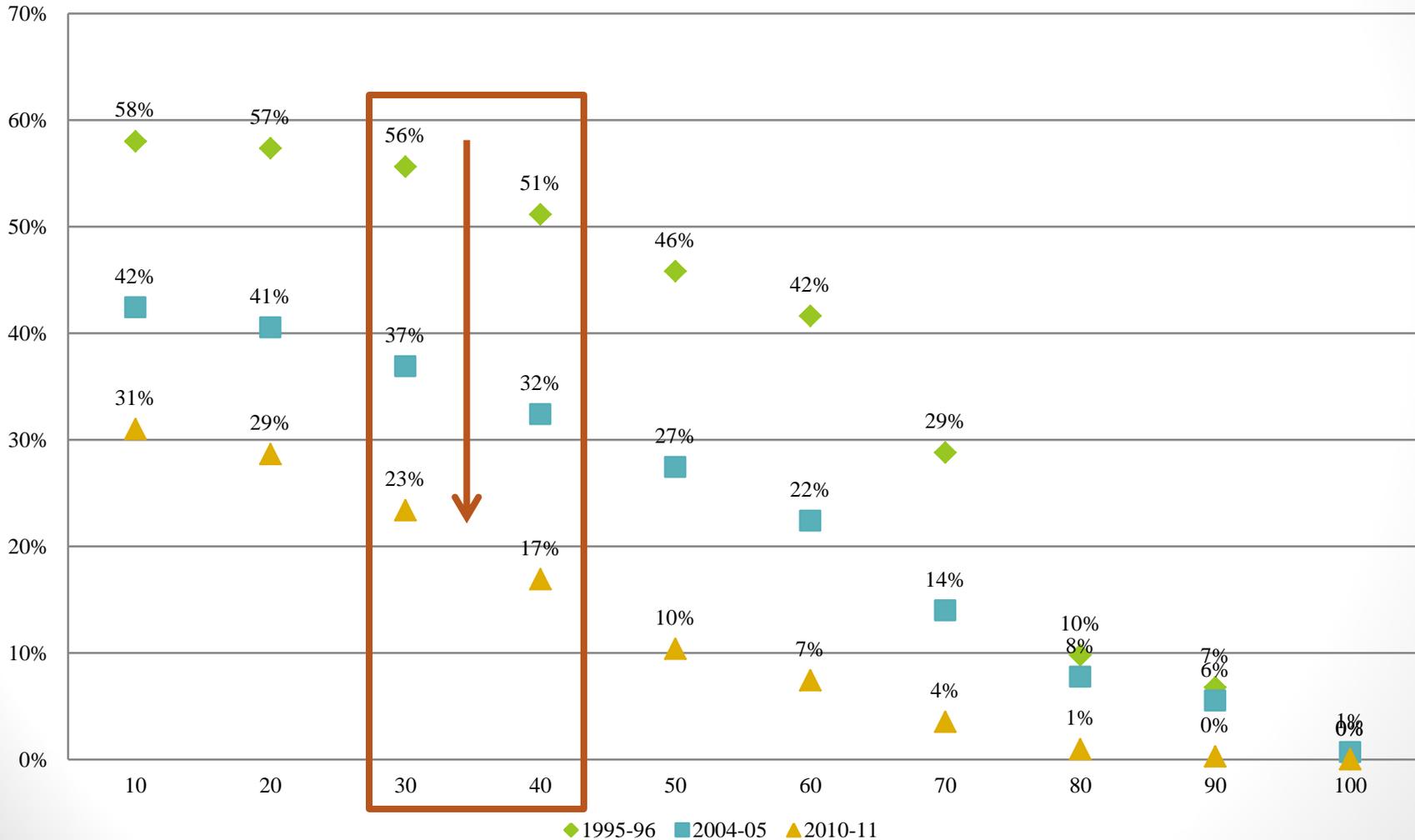
Secular decline in MPI



Source notes: NLSS II did not have anthropometric questions so for that year in the health dimension all the weight is on child mortality

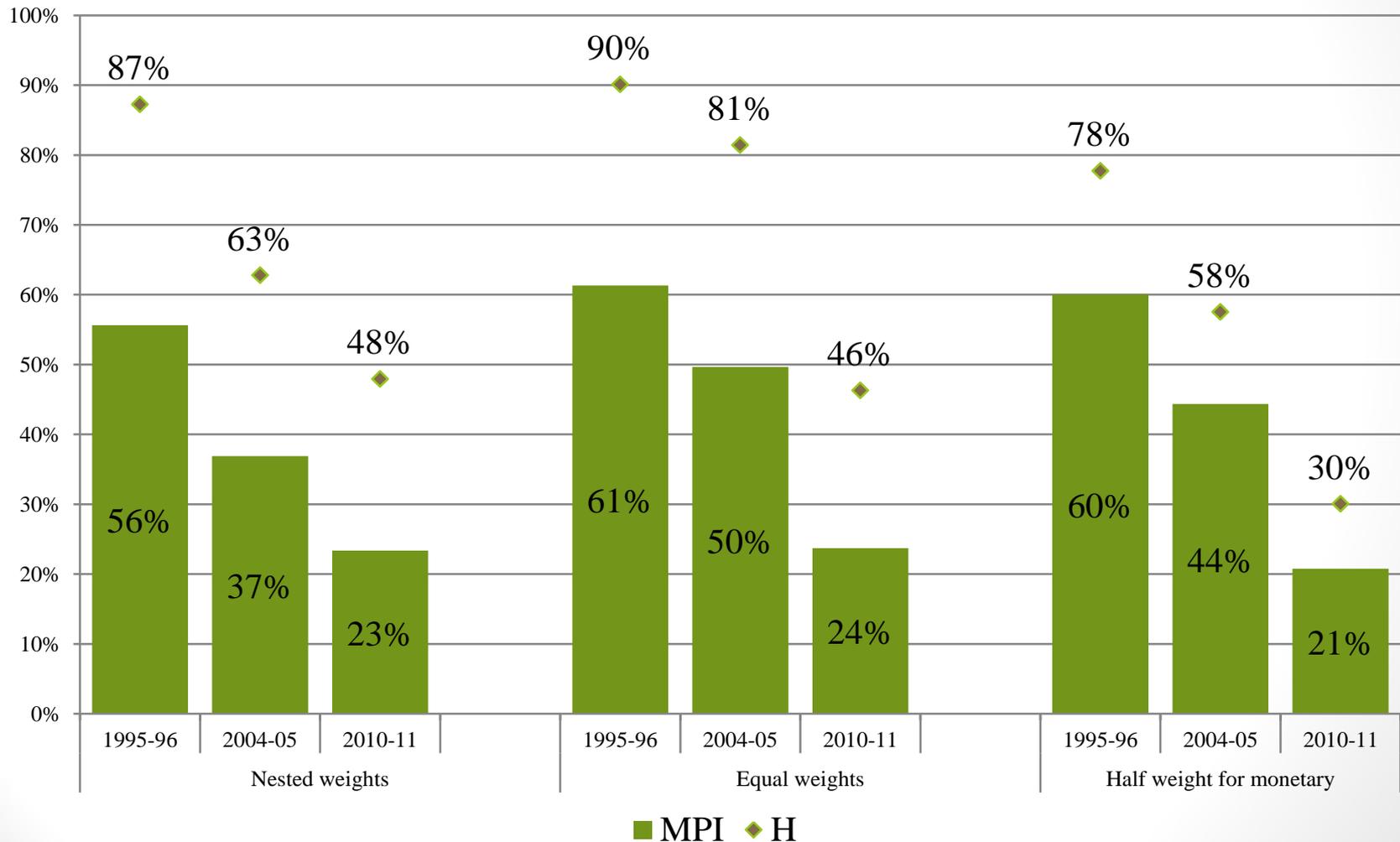
Robustness checks:

Declines for all values of the second cutoff



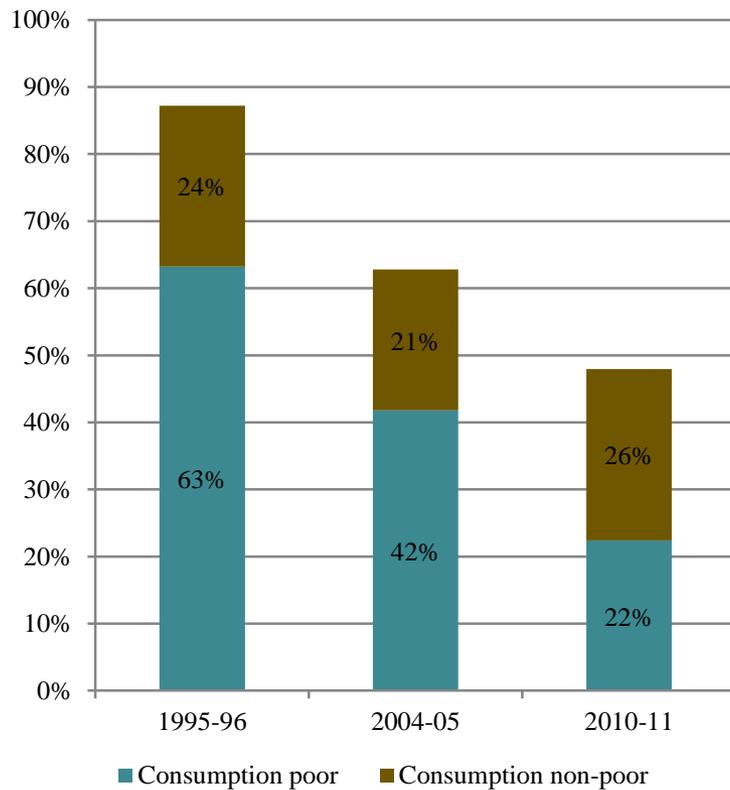
Robustness Checks:

Decline in MPI for all weighting schemes

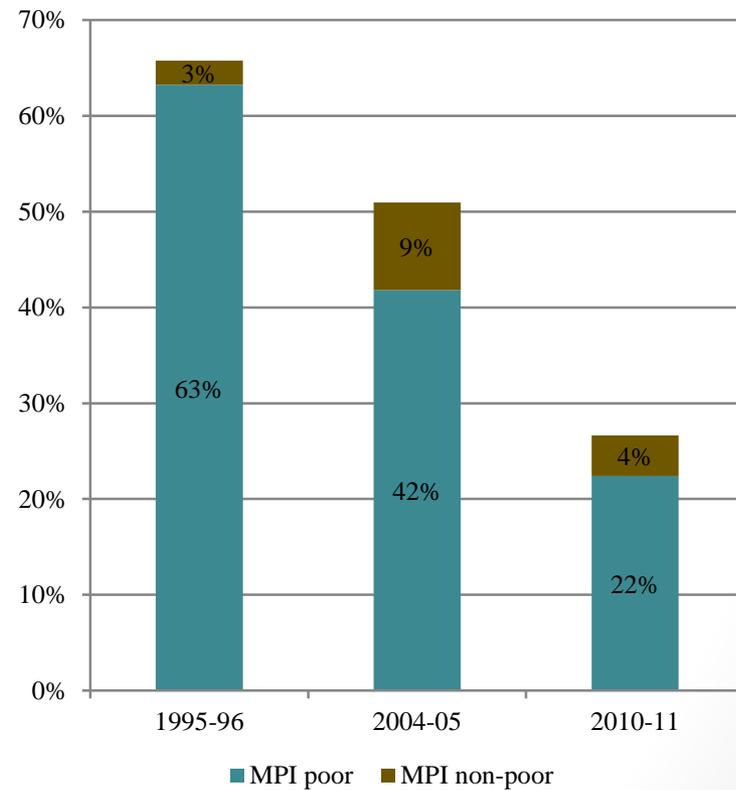


OVERLAP WITH MONETARY MEASURE

Among the MPI Poor



Among the consumption Poor



A National multidimensional index?

- What indicators should we use? Who can help?
 - GOVERNMENT?
 - Planning documents
 - Legislations
 - THE VOICES OF THE PEOPLE
 - Direct survey methods
 - Problems of survey design
 - Problems of referencing
 - Using subjective data on adequacy of food, services.
 - Use of regression analysis
 - Problems referencing

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A National multidimensional index?

- **Planning documents**

- National planning document for Nepal sets down 22 goals to be achieved .
 - These are strongly influenced by the MDGs.

- **Using subjective data on adequacy of food, services.**

- NLSS has subjective questions for adequacy of food, conditions of living, education and health services
 - We use regression of adequacy on a host of objective measures following the Planning document and availability in the NLSS

Dependent Variable	Adequate Housing			Adequate Education			Adequate Health facilities		
	1995-96	2004-05	2010-11	1995-96	2004-05	2010-11	1995-96	2004-05	2010-11
Crowding	0.412***	0.476	0.115						
	(0.092)	(0.385)	(0.073)						
Material for roofs and walls	-0.591***	(dropped)	-0.333**						
	(0.145)		(0.131)						
Piped water	0.024	-0.274	-0.082						
	(0.141)	(0.304)	(0.067)						
Sanitation	0.115	0.176	-0.003						
	(0.109)	(0.781)	(0.066)						
Electricity	0.395***	2.000**	0.378***						
	(0.118)	(0.781)	(0.064)						
Cooking fuel	0.412**	-0.052	0.473***						
	(0.166)	(0.284)	(0.081)						
Phone	0.786***	(dropped)	0.271***						
	(0.258)		(0.064)						
Time to road	0.027	-0.464**	0.084	0.292**	0.021	-0.001			
	(0.129)	(0.230)	(0.056)	(0.135)	(0.066)	(0.057)			
Consumption poor	0.094	(dropped)	0.236***	0.275***	0.248***	0.232***	0.304***	0.461***	0.379***
	(0.096)		(0.072)	(0.073)	(0.069)	(0.063)	(0.062)	(0.060)	(0.056)
Enrolled				0.332***	0.468***	0.228***			
				(0.074)	(0.072)	(0.074)			
Time to Primary school				0.051	0.052	-0.097			
				(0.107)	(0.094)	(0.059)			
Stunted							0.015		-0.242**
							(0.098)		(0.099)
overweight							-0.011		0.064
							(0.099)		(0.099)
Delivery using health Professionals							0.011	-0.081	0.254***
							(0.063)	(0.083)	(0.072)
Use of contraceptives							0.054	0.049	0.096**
							(0.064)	(0.060)	(0.047)
No. of Observations	1,790.000	374.000	4,611.000	2,308.000	2,579.000	4,028.000	3,353.000	3,910.000	5,945.000
Adjusted R2	0.069	0.104	0.080	0.060	0.066	0.040	0.024	0.038	0.032
note: *** p<0.01, ** p<0.05, * p<0.1									

Observations

- The coefficient on consumption poverty is declining for all three sets of regressions.
- The factors that emerge as the significant in the three sets of regressions are:

Housing	Education	Health
Material of roof and walls Electricity Cooking fuel Phones	Enrollment	No important results

However if I had a choose a smaller set of indicators for each dimension, which ones should I pick?

Shapley value

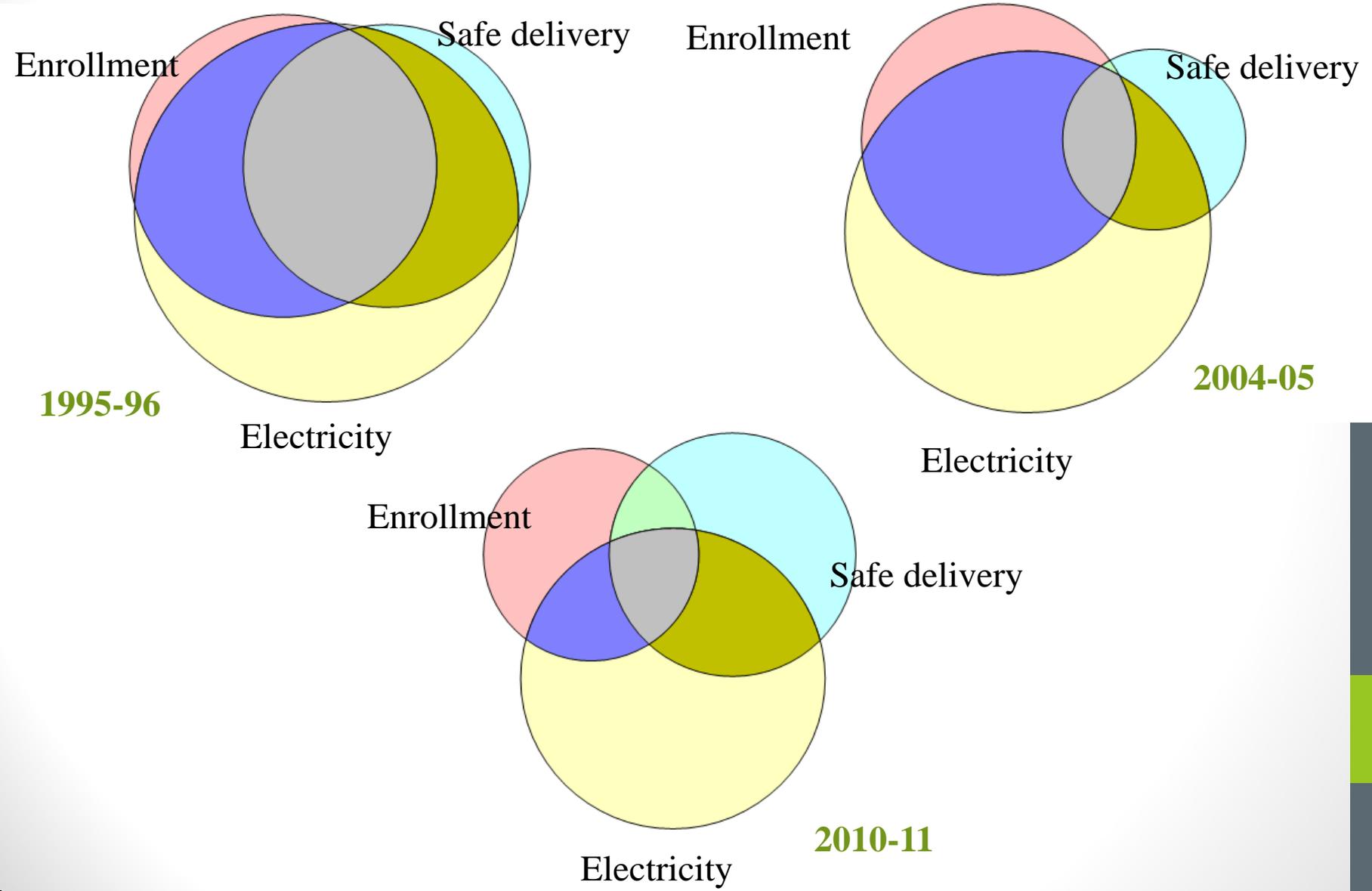
Health care			Schooling			Housing					
	1995-96	2004-05	2010-11		1995-96	2004-05	2010-11		1995-96	2004-05	2010-11
Stunted	0.32		5.15	Enrollemr	28.45	58.23	22.02	Overcrow	15.44	28.77	-0.59
underwei	0.49		1.6	Access to	-6.45	13.96	43.38	Roof type	6.64	3.49	0.87
Delivery b	17.58	0.77	21.98	Access to	32.92	0.73	0.04	clean wat	7.63	31.81	1.05
Use of cor	4.07	1.85	1.56	Poor	45.08	27.08	34.57	Sanitation	10.69	49.94	9.98
Poor	77.55	97.37	69.71					Electricity	24.98	102.79	30.59
								Cooking fu	13.33	17.33	24.14
								Phone	7.15	-183.58	21.87
								Roads	3.99	5.84	2.09
								Poor	10.14	43.61	9.99

The three most important contributors are highlighted

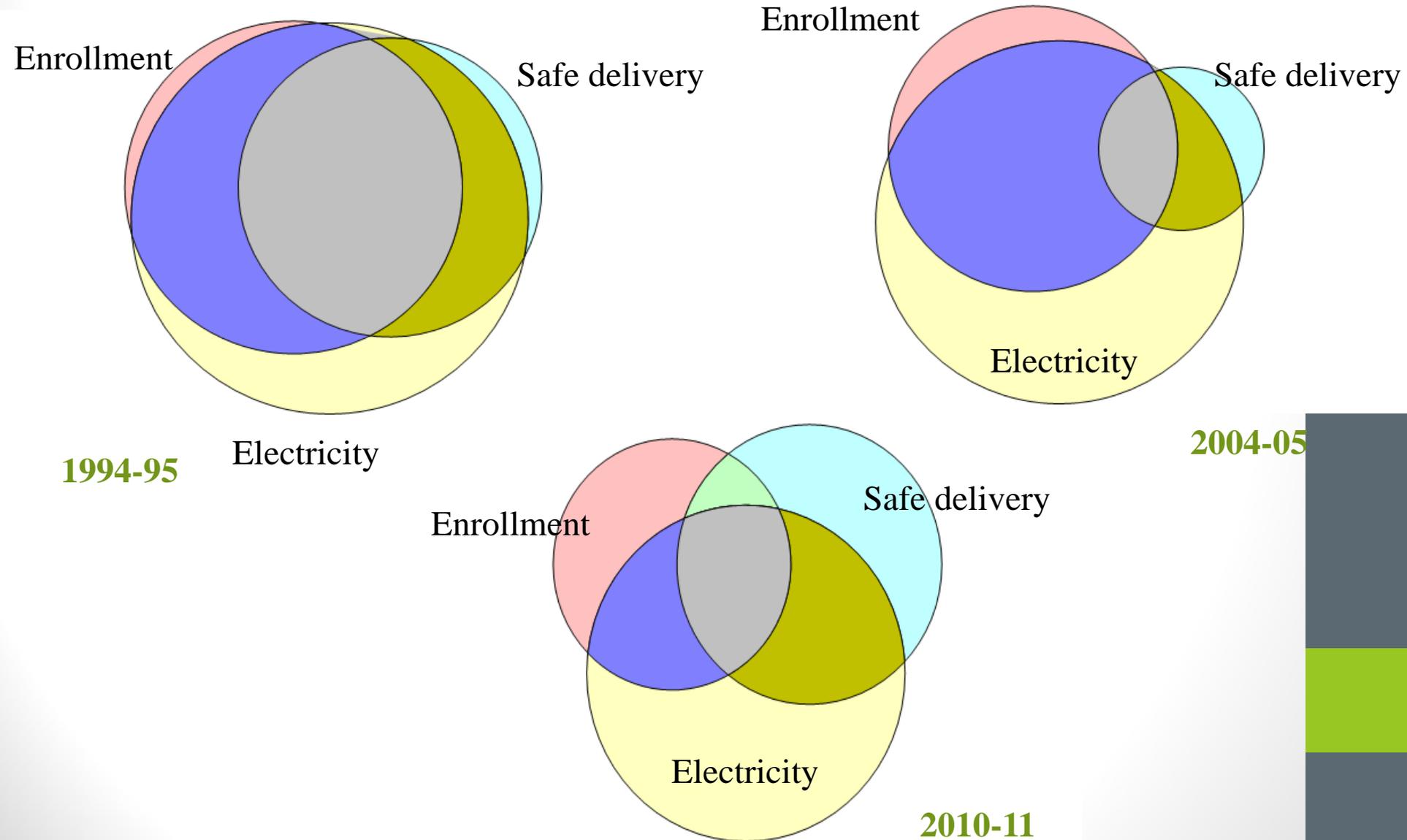
observations

Housing	Education	Health
Electricity Cooking fuel Phones	Enrollment Time to primary school	Using health professional Use of contraceptives

Overlaps among deprivations



Overlaps among the poor

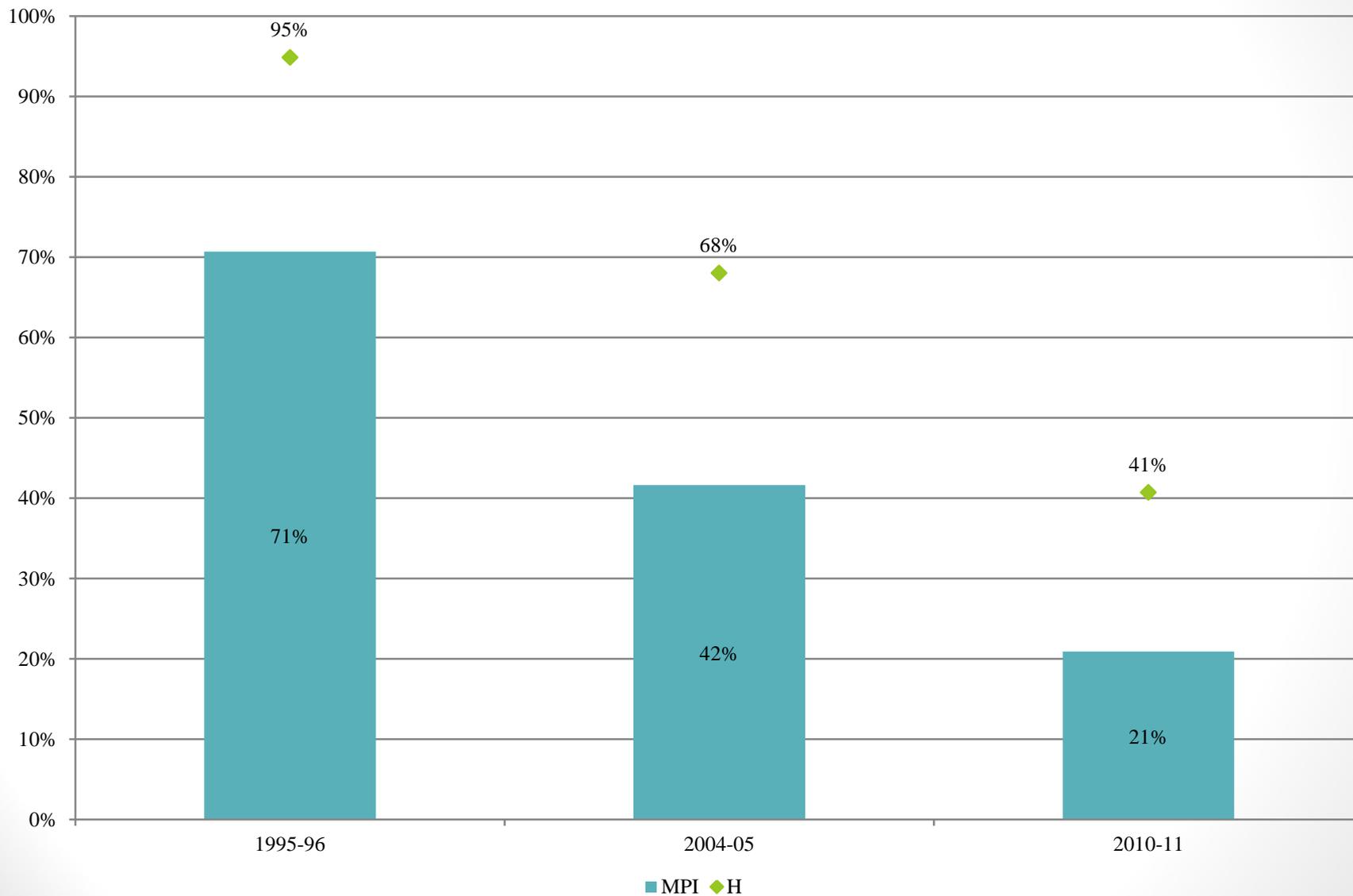


An Alkire-Foster Index

- **Consumption deprivation**
- **Health**
 - Delivery using health professional
 - Use of contraceptives
- **Education**
 - Enrollment
 - Time to primary school
- **Living standard**
 - Sanitation
 - Piped water
 - Cooking fuel
 - Phone
 - Electricity

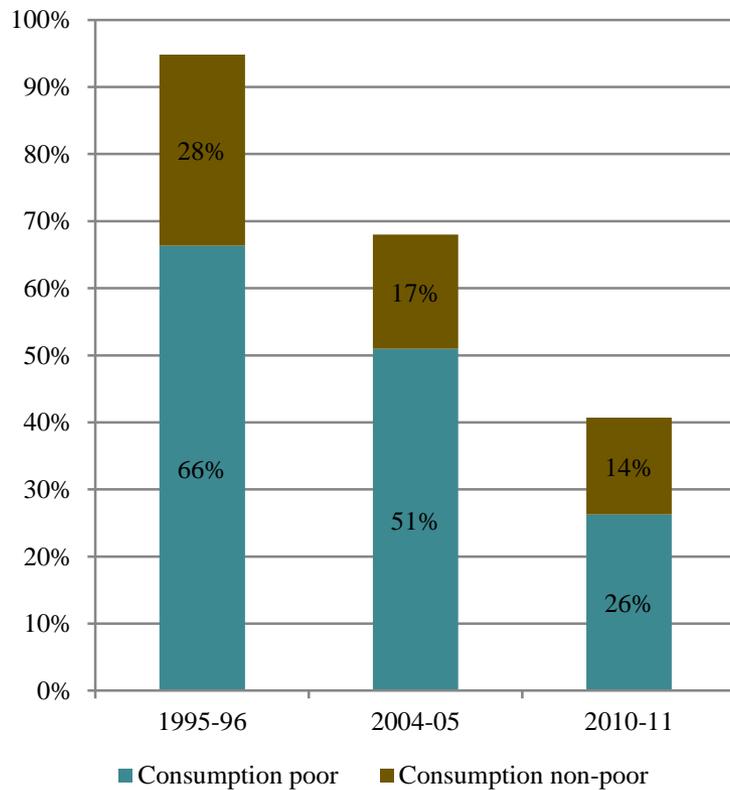
Nested weights with Four dimensions and second cut-off of 30%

Poverty has declined

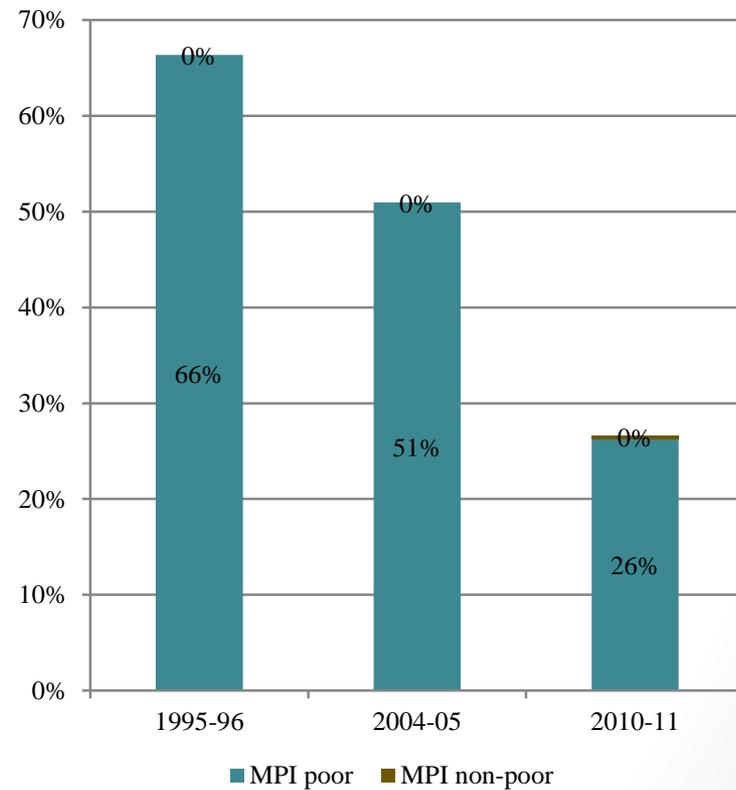


OVERLAP WITH MONETARY MEASURE

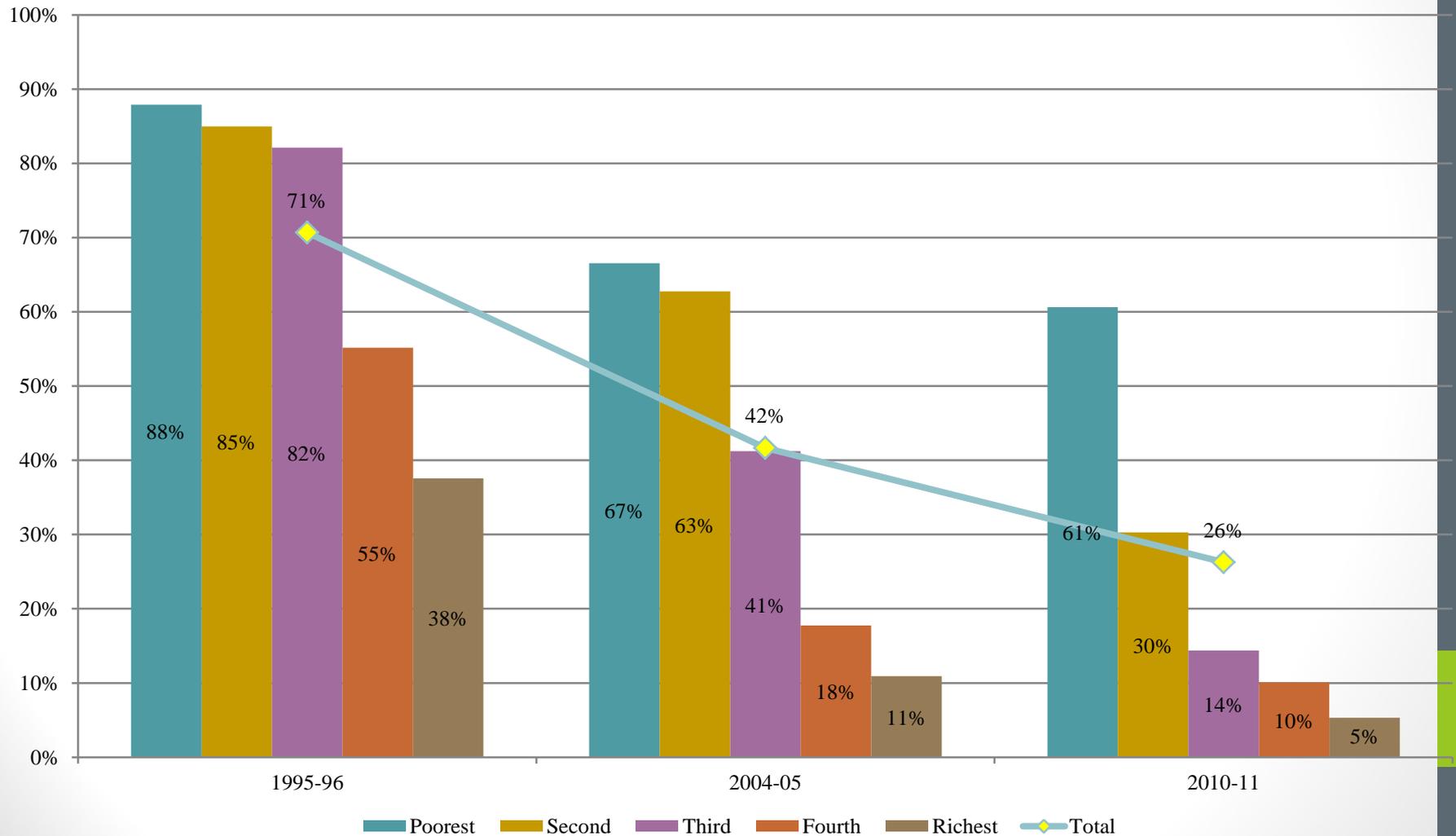
Among the MPI Poor



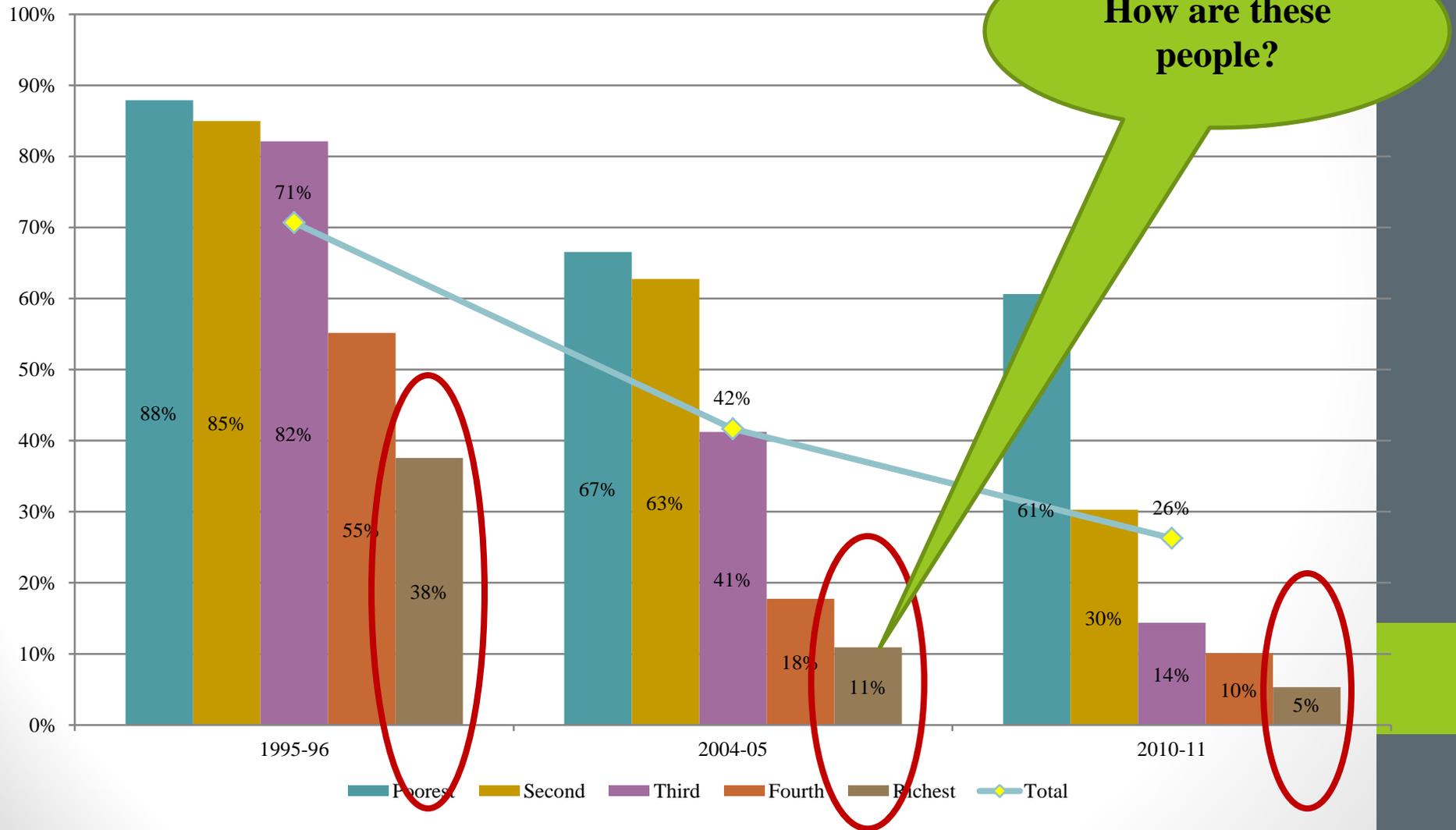
Among the consumption Poor



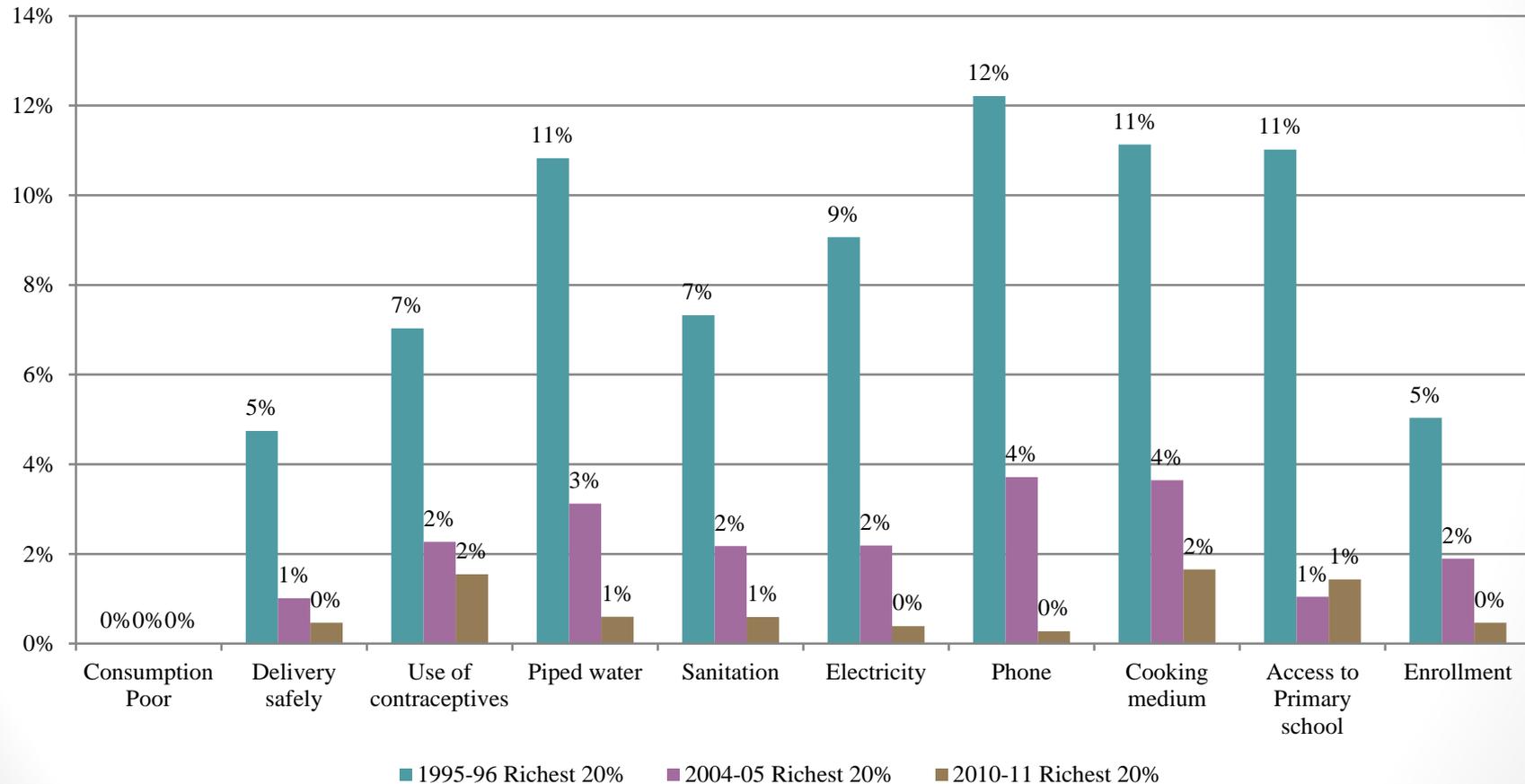
MPI by Quintiles of consumption per capita



MPI by Quintiles of consumption per capita

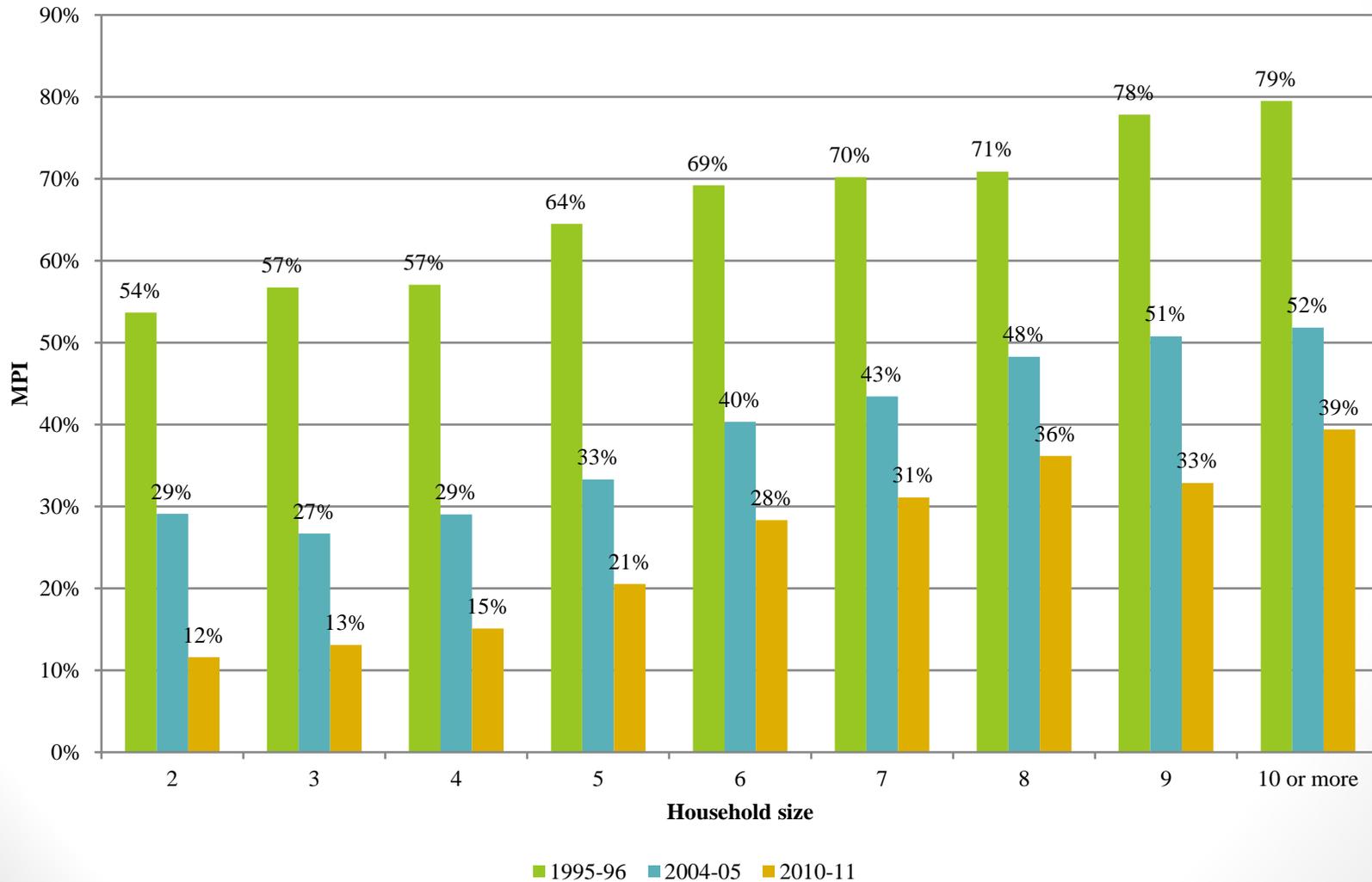


Dimensions of deprivation for the highest Quintile

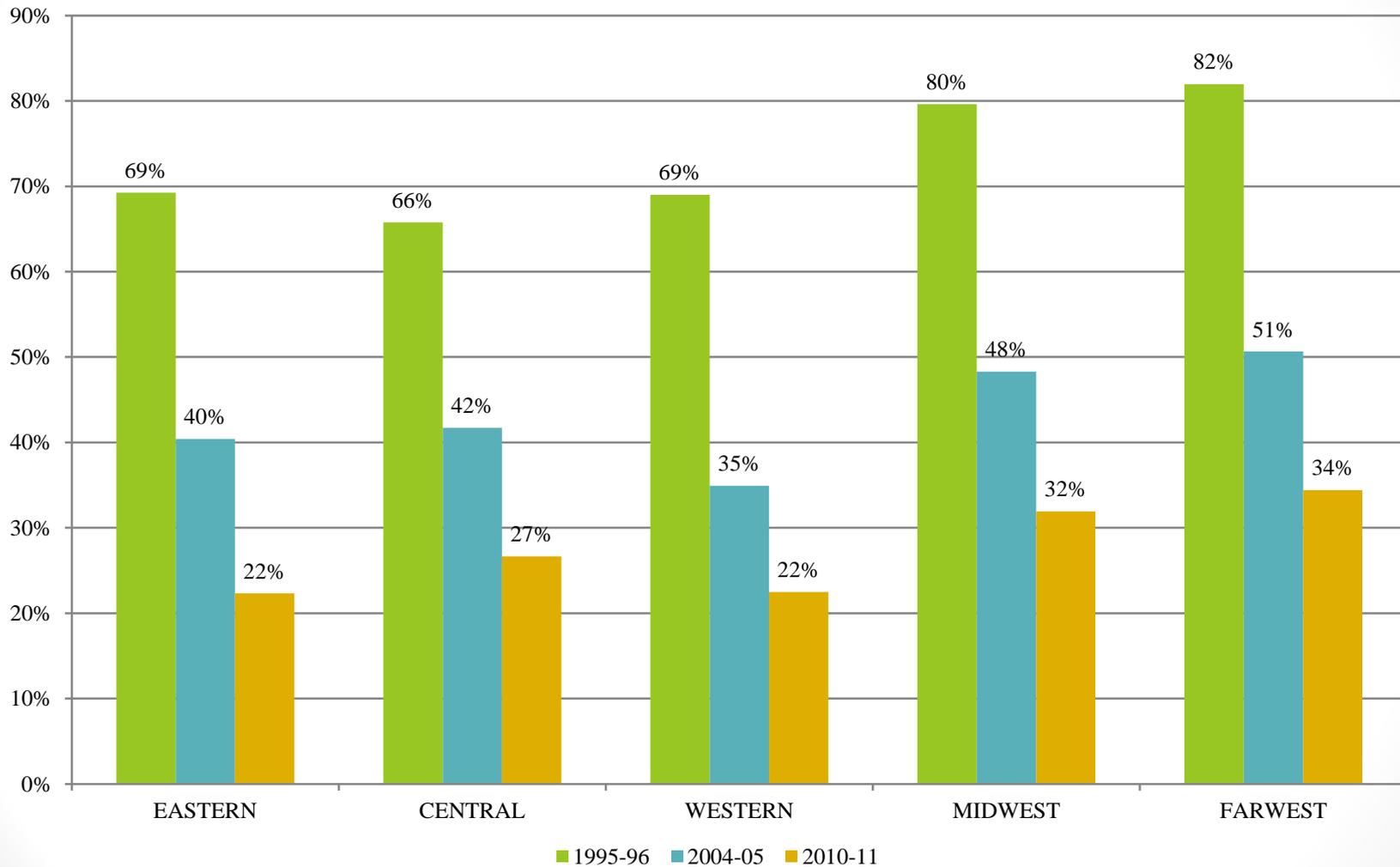


No particular dimensions which appear to the reasons for seeing multidimensional poverty among the highest quintile

MPI by household size



MPI by regions



**MPI fell for all regions however the pace of reduction varied across regions
The regional differences have reduced over the period**

Summary and conclusions

- MPI poverty has unambiguously reduced in the 15 year period.
- Looking at core overlaps among the dimensions also shows a reduction in multidimensionality of poverty.
- However for the MPI, the larger contribution to the reduction is due to the headcount than the intensity.
- Subjective data along with the Nepal Planning documents show a similar set of indicators to be used
- The only exception is the large contribution of the monetary measure.
- Contribution of the monetary measure is falling as multidimensional poverty reduces.
- MPI by quintile has fallen however there is some Multidimensional poverty even among the highest quintile.
- MPI by regions has fallen for all regions however the pace of reduction has varied reducing the inequalities across the regions.
- MPI by hh size has reduced for all the groups