



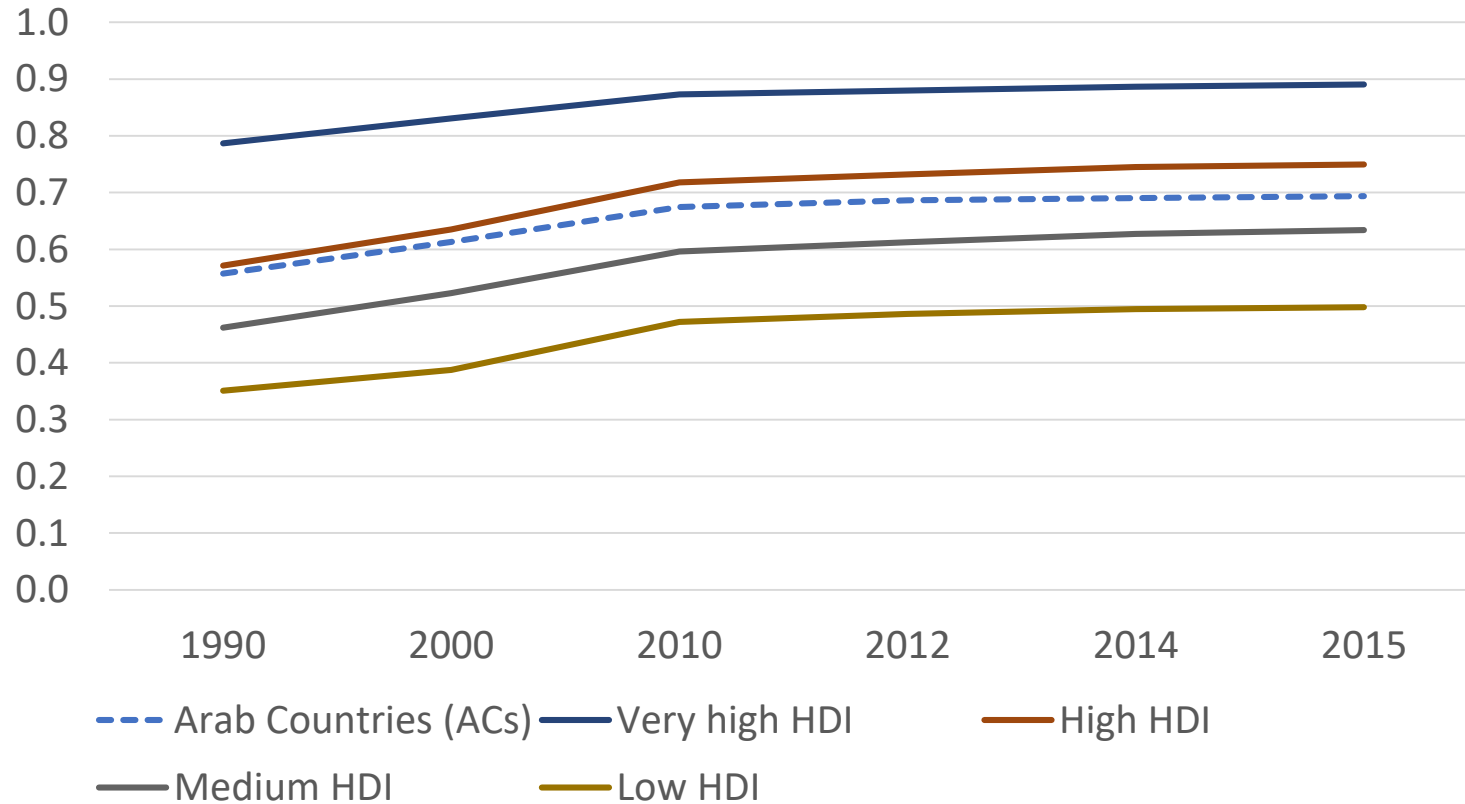
Inequality in Health Outcomes

Khalid Abu-Ismaïl

Verena Gantner

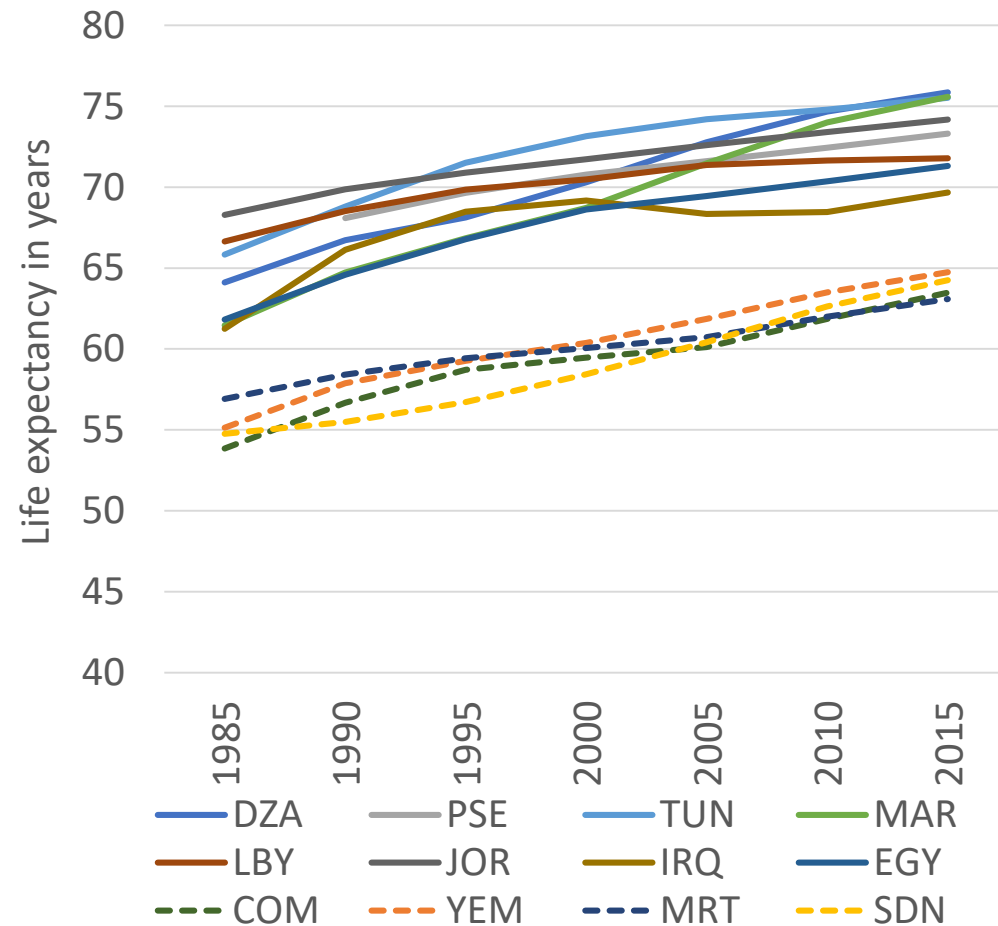
Experts Group Meeting on Multidimensional Inequality in Arab Countries
Beirut, February 2019

Gains in human development...

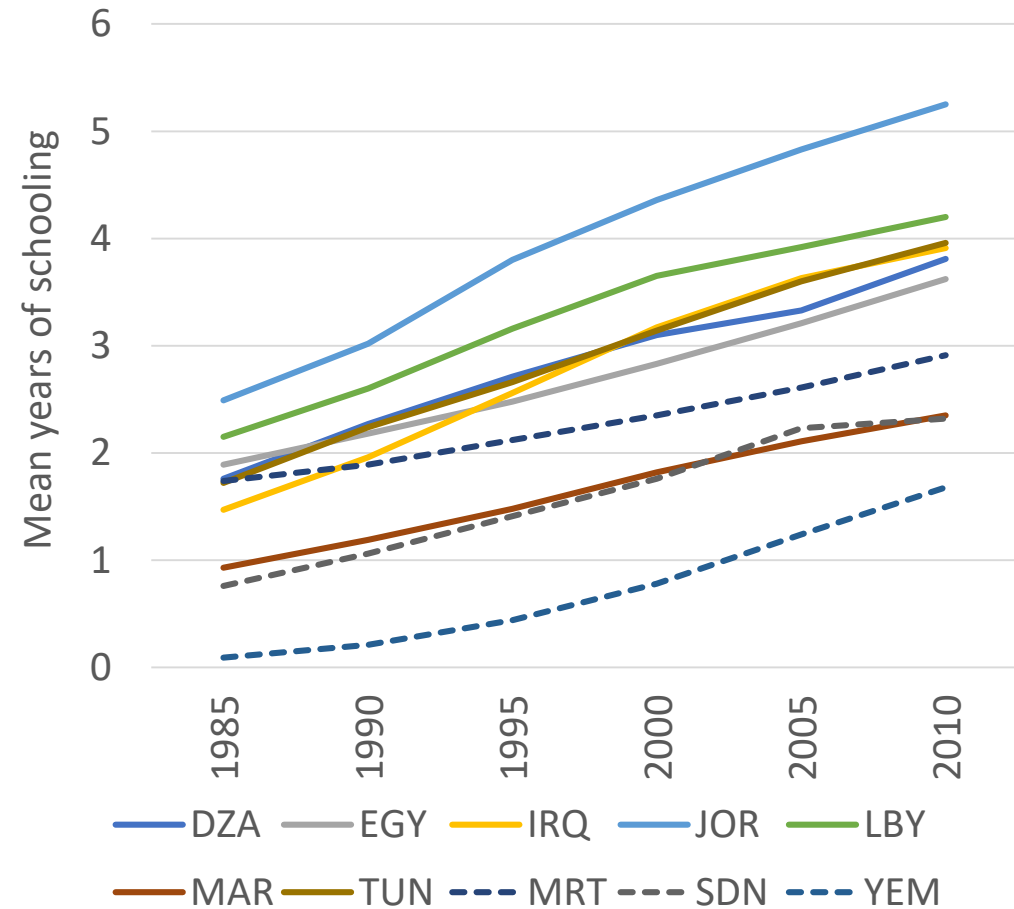


...especially in health and education

Life expectancy (WDI Database)



Mean years of schooling (Barro-Lee Dataset)



How equal has this progress been?

What do we know about inequality in health outcomes?

- Regional or national averages often conceal wide disparities both between and within countries.
- Despite an impressive overall improvement in health indicators, existing research hints to persisting gaps in health outcomes across socio-economic characteristics in many Arab countries.

How do we measure inequality in health outcomes?

Data Sources

- 24 household surveys from three main sources:
 - Demographic and Health Surveys (DHS)
 - Multiple Indicator Cluster Surveys (MICS)
 - Pan Arab Project for Family Health (PAPFAM)
- Covering 12 Arab countries for two points in time (between 2000-2015)

Country	Earliest Survey		Latest Survey	
Algeria	PAPFAM	2002	MICS	2012
Comoros	MICS	2000	MICS	2012
Egypt	DHS	2000	DHS	2014
Iraq	MICS	2000	MICS	2011
Jordan	DHS	2002	DHS	2012
Libya	PAPFAM	2007	PAPFAM	2014
Mauritania	DHS	2007	MICS	2015
Morocco	DHS	2003	PAPFAM	2011
Palestine	PAPFAM	2006	MICS	2014
Sudan	MICS	2000	MICS	2014
Tunisia	PAPFAM	2001	MICS	2011
Yemen	PAPFAM	2003	DHS	2012

Data Sources

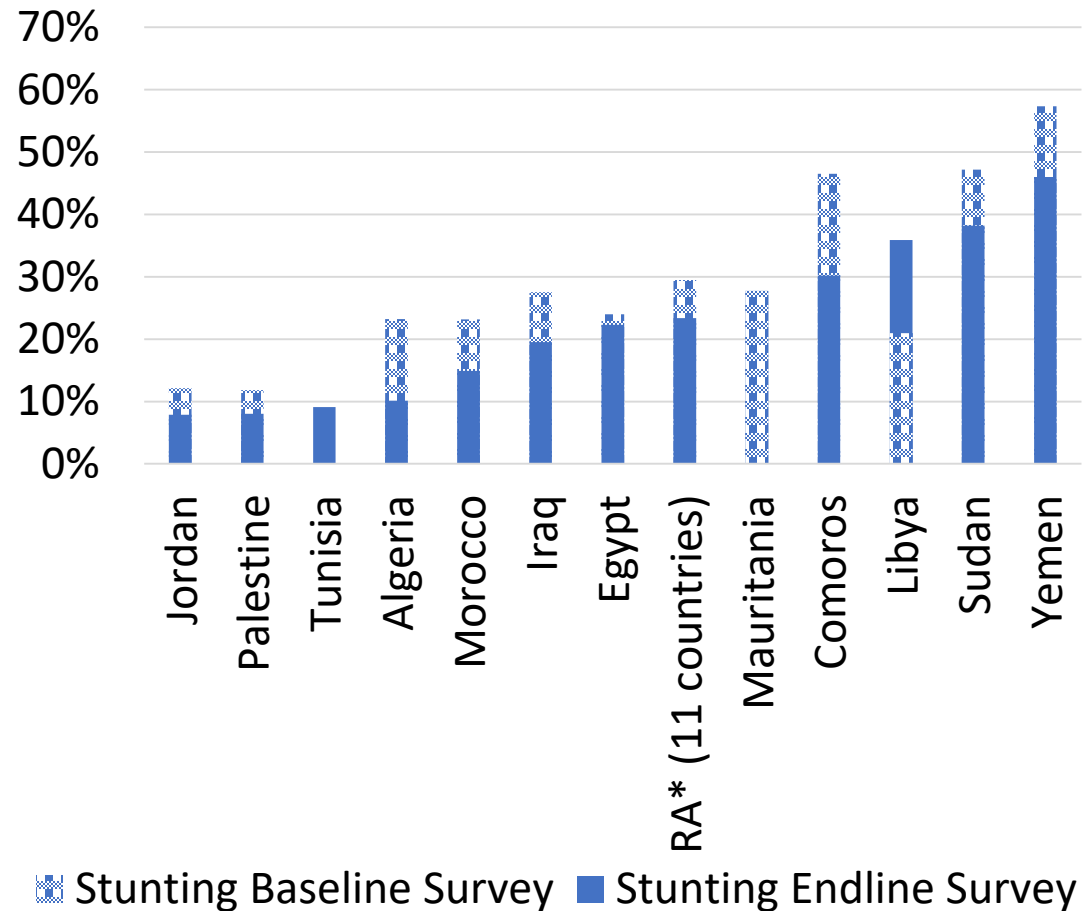
- Harmonized to make all surveys comparable across both countries and time
- Technical Annex has detailed description of data sources and harmonization process

Health Indicators

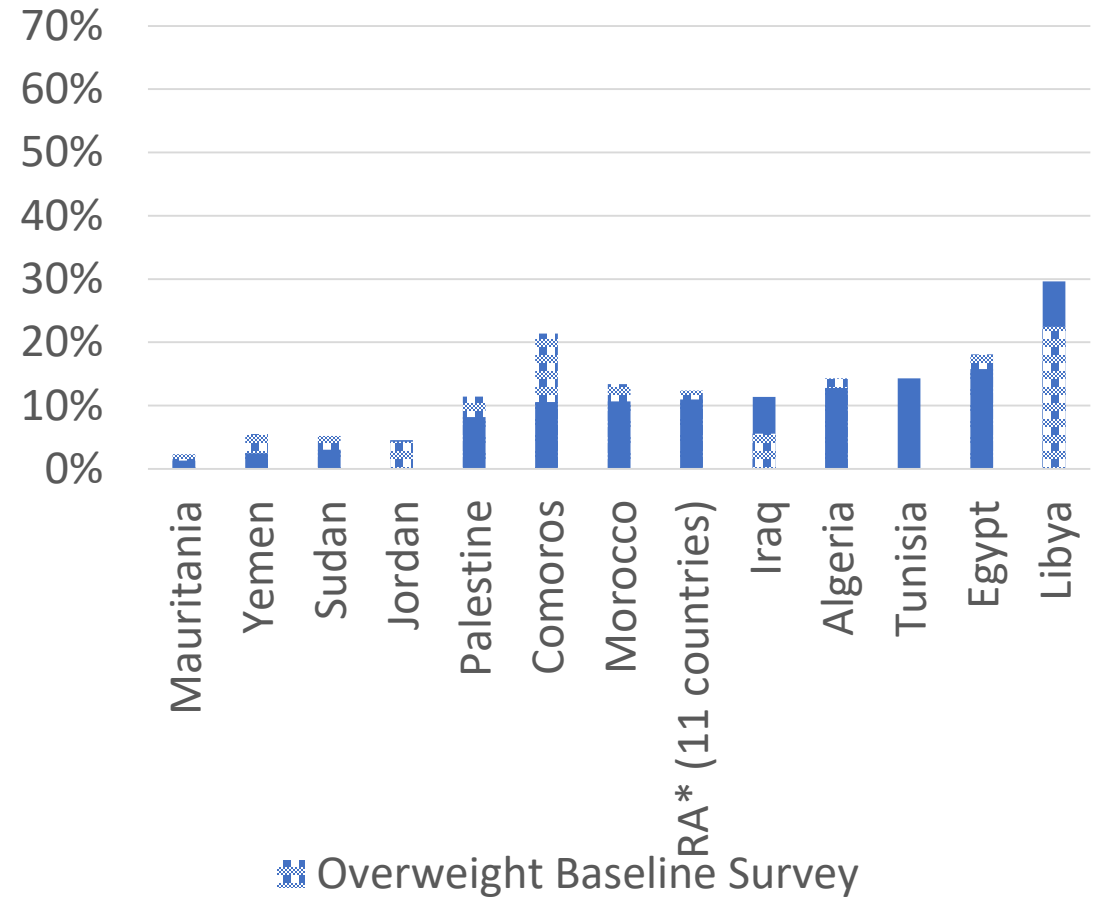
- Stunting & Overweight
 - Stunting: low height-for-age, reflects chronic malnourishment; irreversible after 2 years of age
 - Overweight: high weight-for height
- Skilled Birth Attendance (SBA)
 - Percentage of births attended by skilled health personnel
- Infant Mortality Rate (IMR)
 - Probability of dying before the 1st birthday, reported as deaths per 1,000 live births
- Water & Sanitation (WASH) Indicators
 - Water: household has access to safe drinking water according to MDG definition
 - Sanitation: using indicator from Arab MPI; household has improved sanitation facilities which is not shared with other households

Child health indicators: Stunting and Overweight

Stunting (2000-2015)

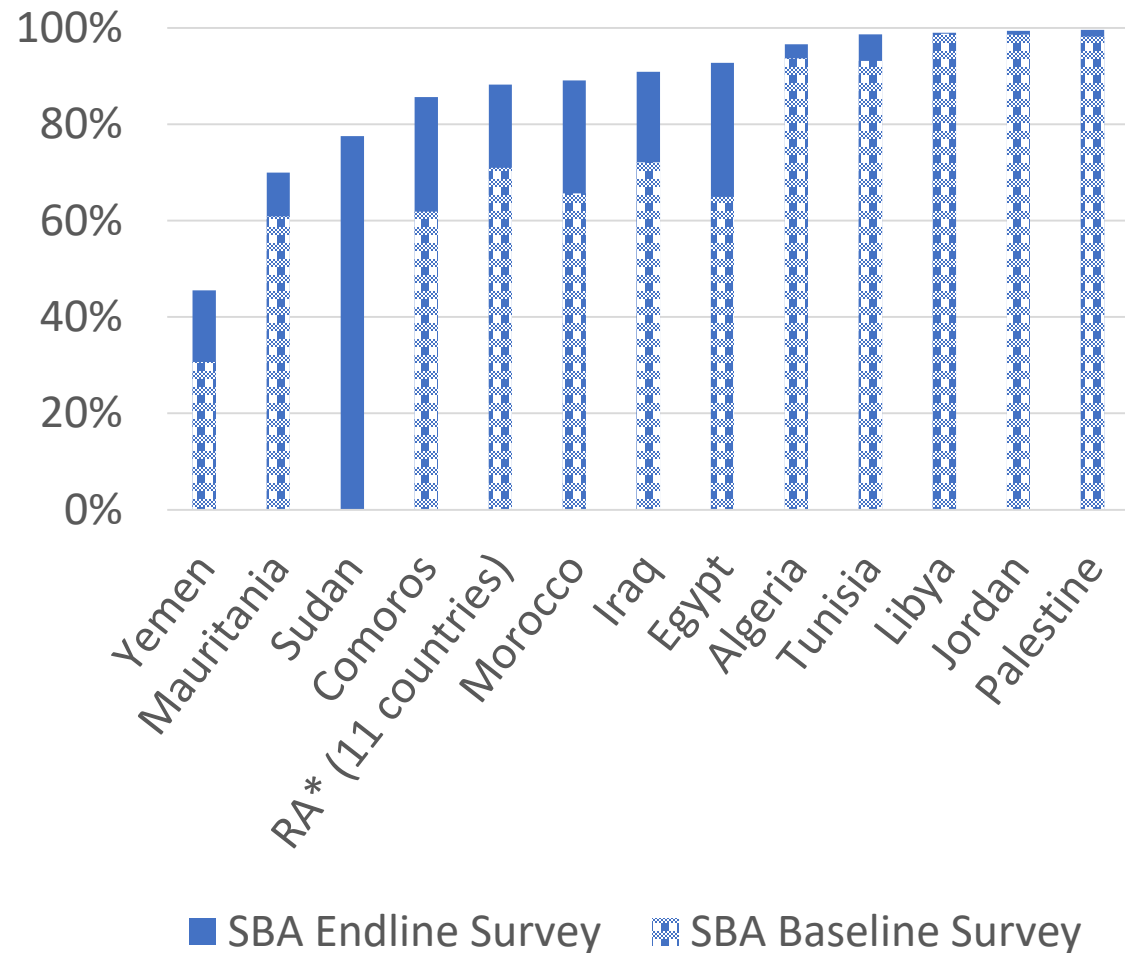


Overweight (2000-2015)

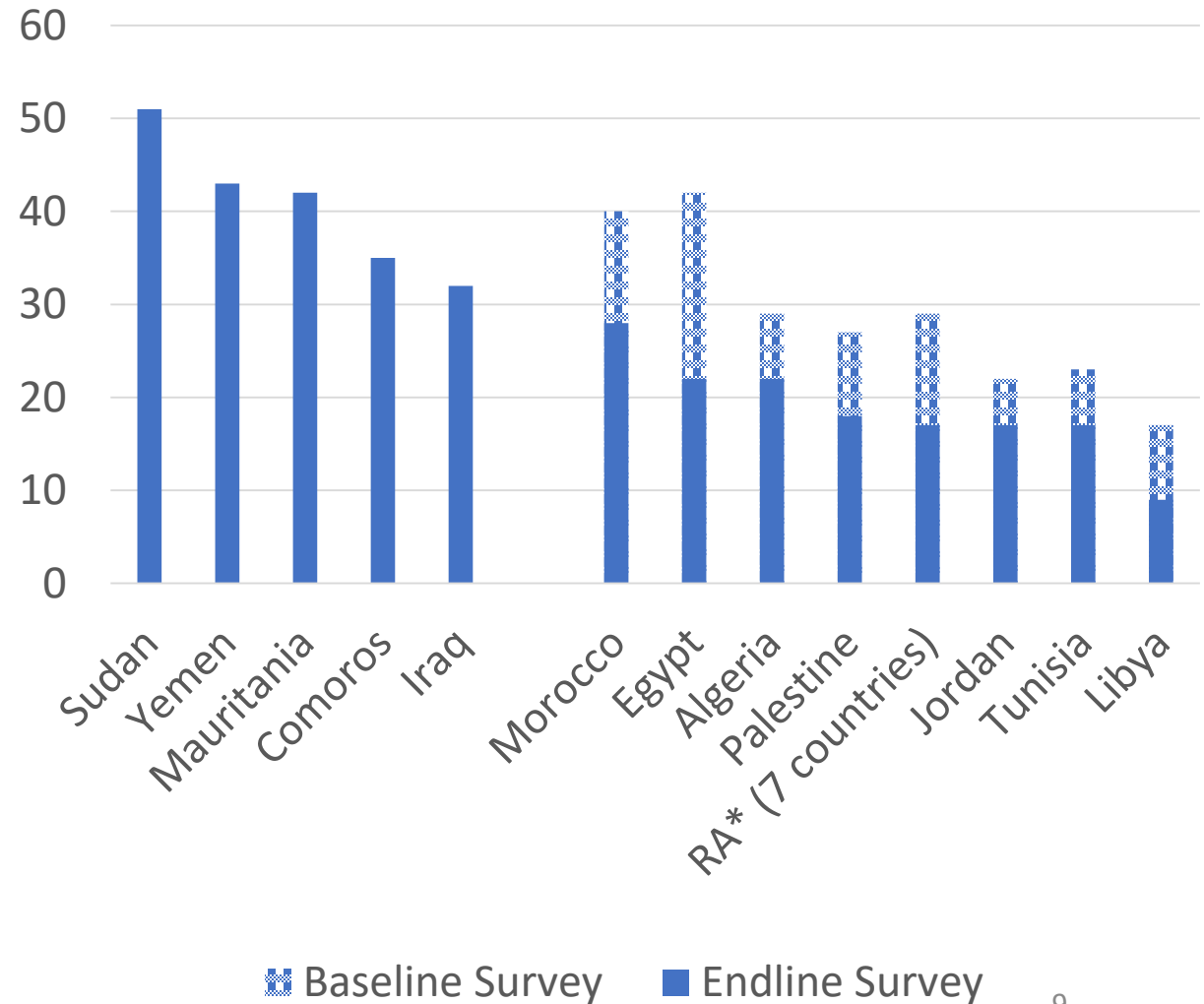


Health Indicators: SBA and IMR

Skilled Birth Attendance (SBA), 2000-2015

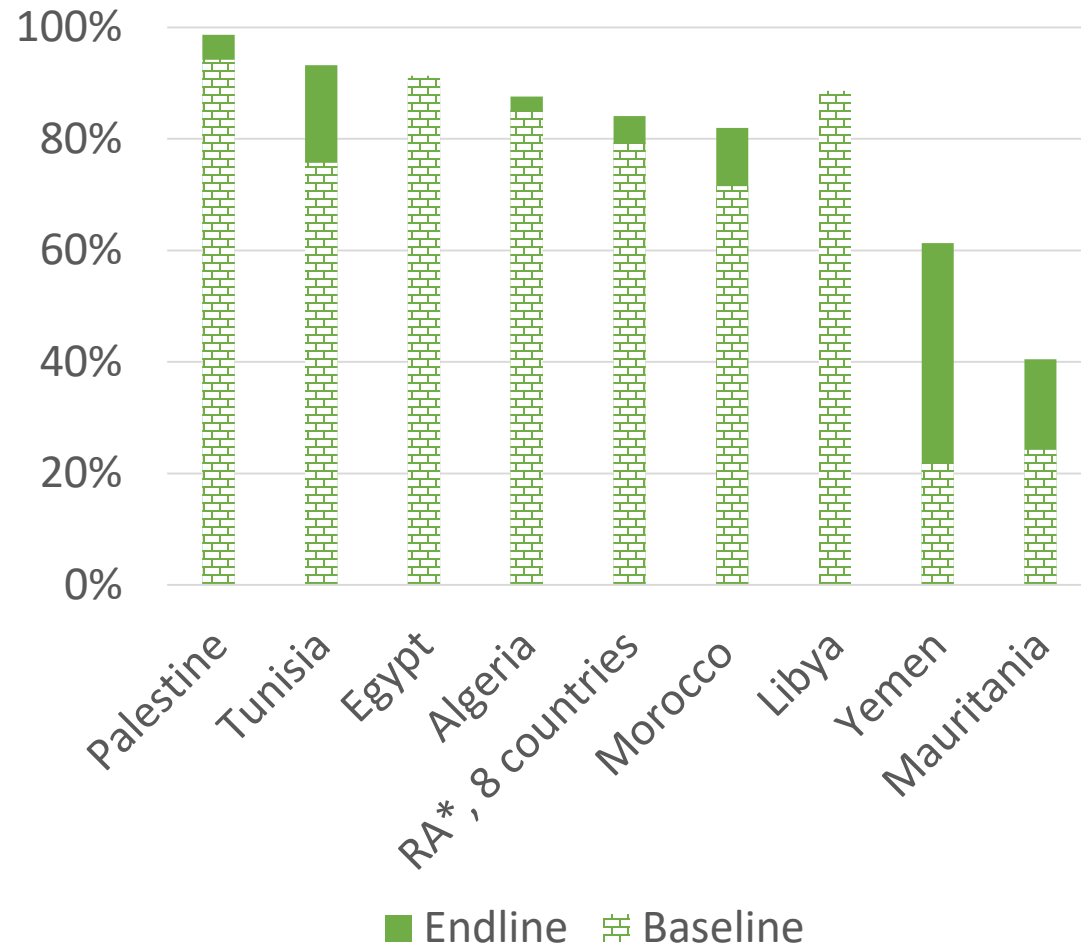


Infant Mortality Rate (IMR), 2000-2015

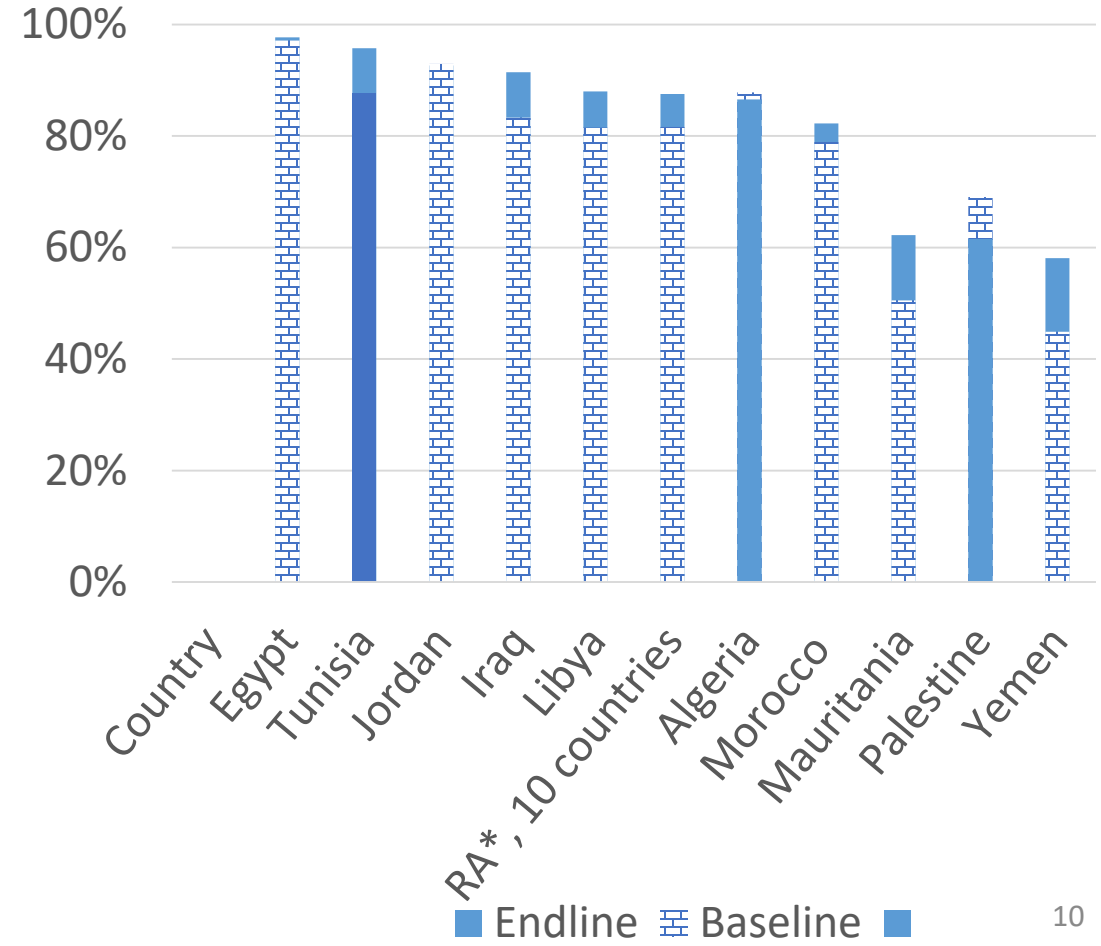


Water and Sanitation Indicators

Sanitation Indicator



Water Indicator



Overall results

- Progress in most indicators on a national level
 - Only stunting and overweight show a mixed result, not all countries managed to decrease the number of malnourished children
- Expected variation between national averages of the groups of the Least Developed Countries (LDCs) and Middle-Income countries (MICs)
- But what about disparities within the countries that are concealed by the national average?

Inequality between whom?

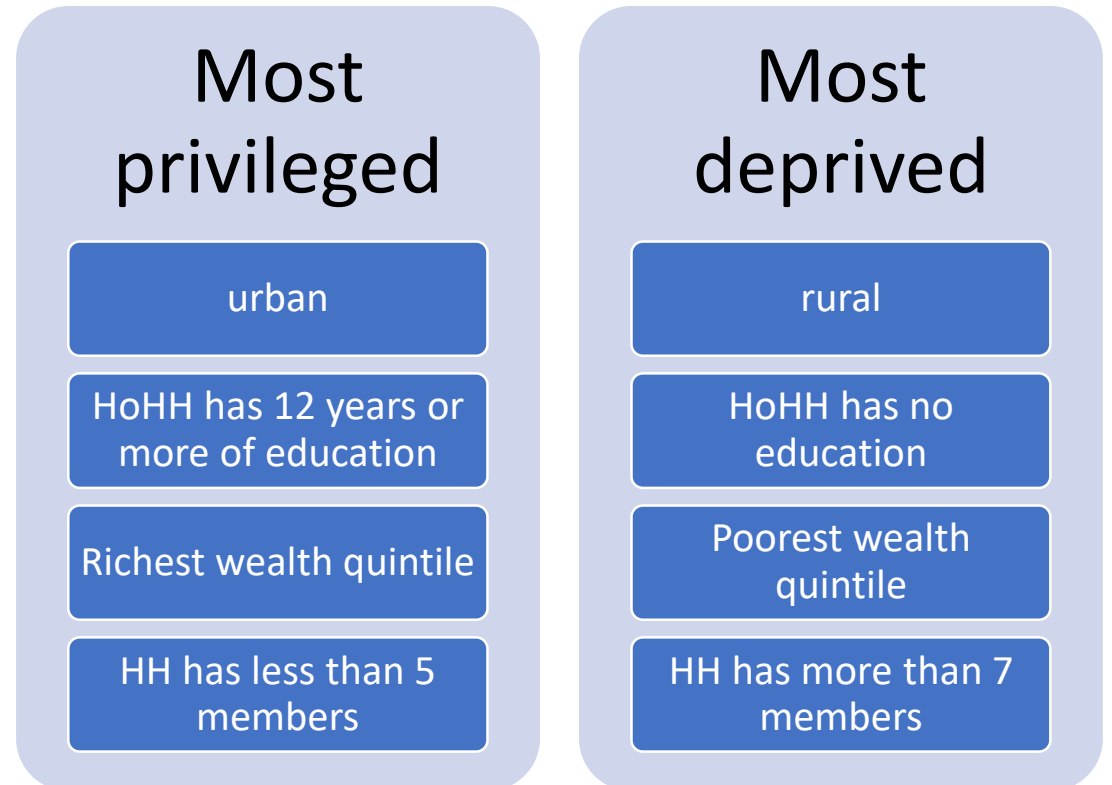
- Disaggregation of data by:
 - Area (Rural and urban, camp in Palestine)
 - Education of the head of household (No education and 12 years or more of education of the head of household)
 - Wealth Quintile (constructed using the Wealth Index, poorest and richest quintile)

Groups holding several characteristics:

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Groups holding several characteristics:



Ratio Analysis

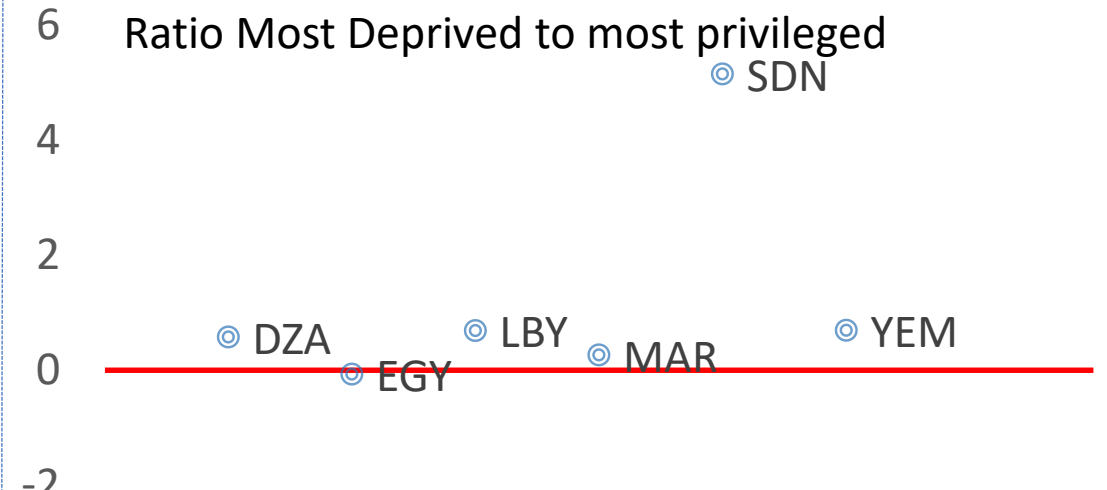
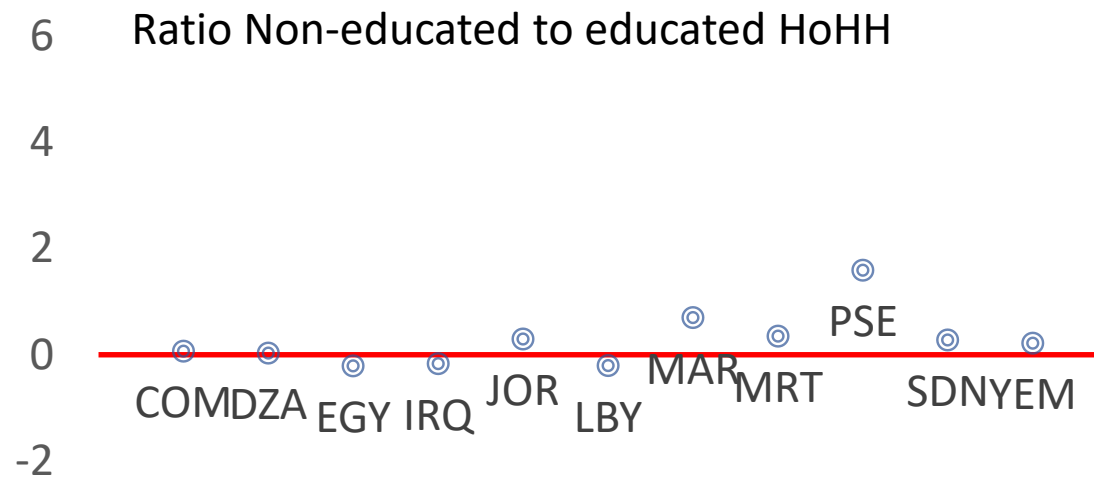
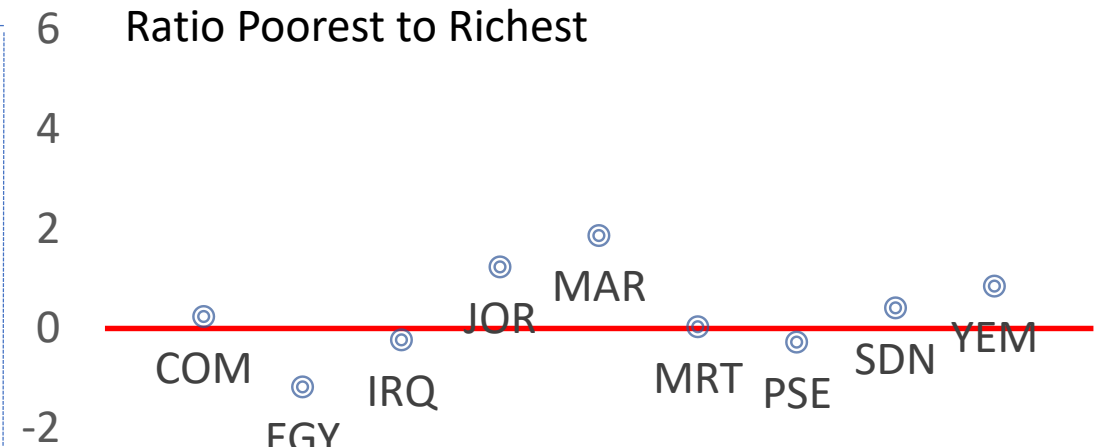
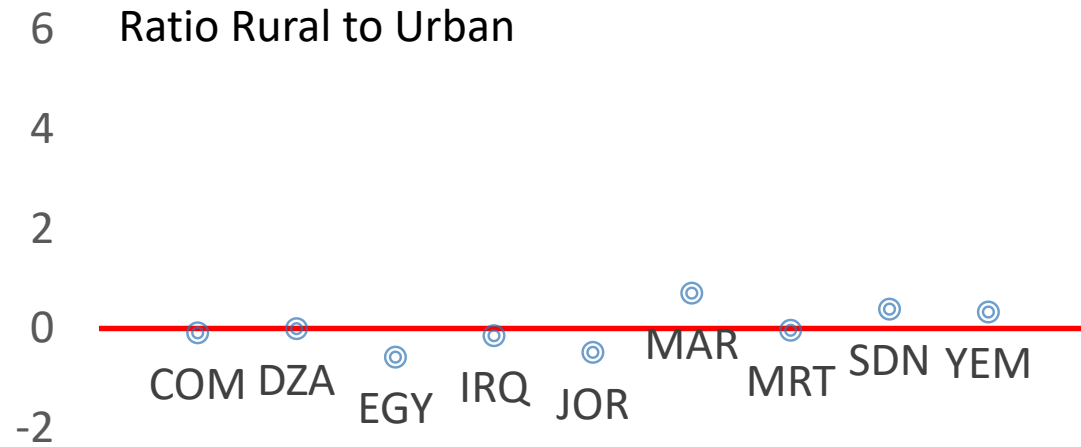
- We analyze the changes in the ratio over time of the following characteristics:
 - Rural/urban
 - No education/Educated head of household
 - Poorest/richest
 - Most deprived/most privileged
- If indicator is presented as achievement, the ratio flips
- For some countries, wealth index cannot be constructed

Ratio Analysis: Example

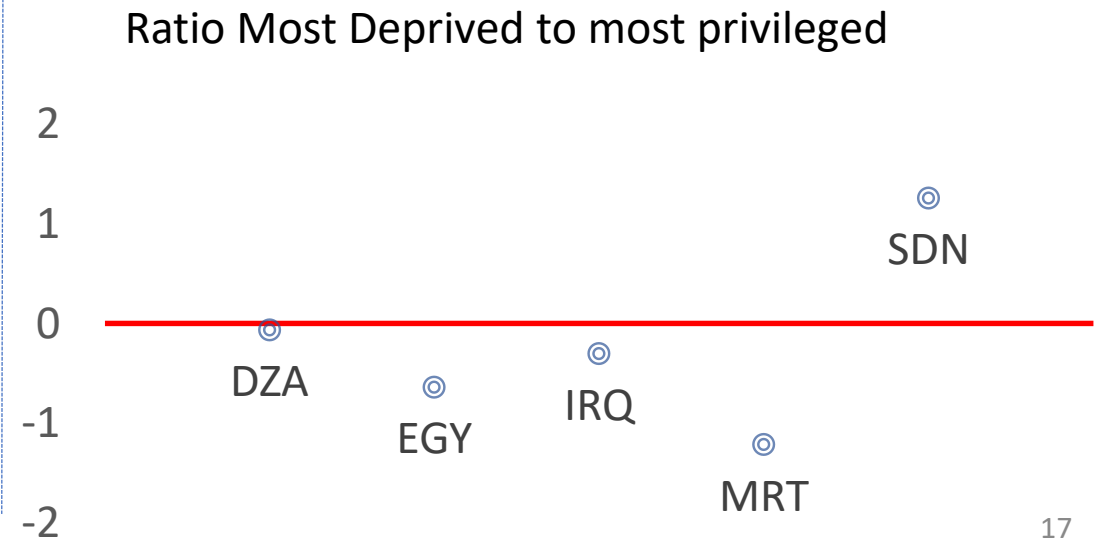
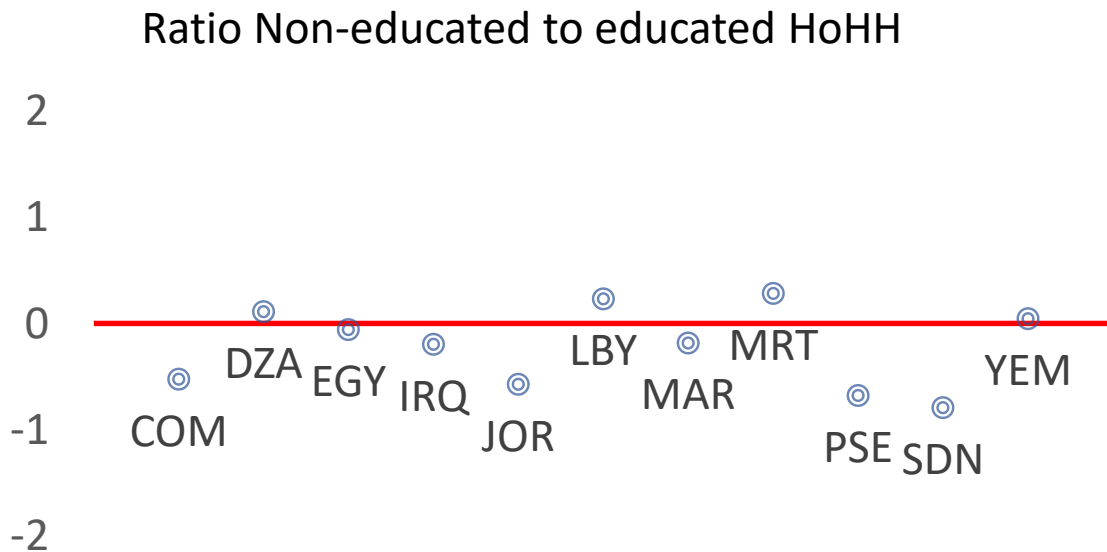
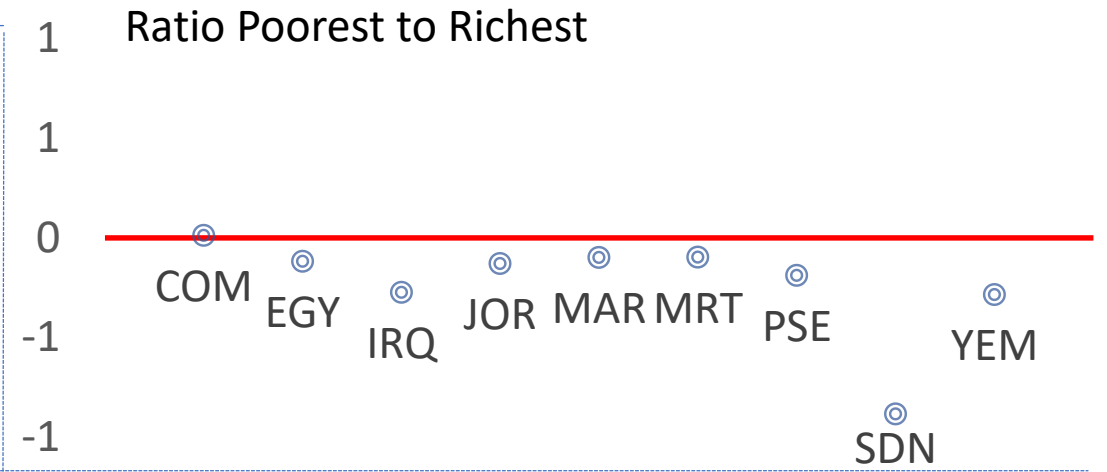
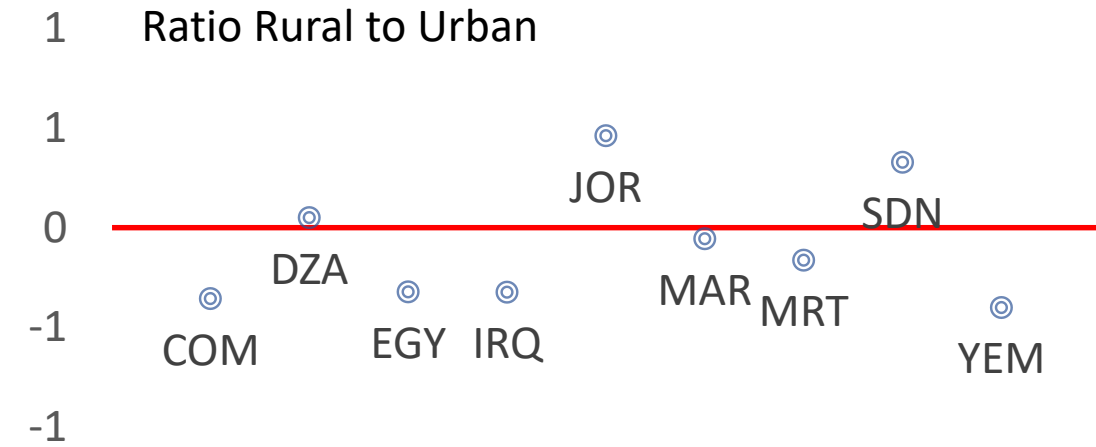
Indicator	Country	Year	Survey	Total	Urban	Rural	Ratio Rural/Urban	Change in Ratio
STUNTING	COM	2000	MICS	46.52%	36.96%	49.32%	1.33	
	COM	2012	DHS	30.19%	25.65%	31.89%	1.24	-0,09

- If change in ratio is negative → decrease in inequality
- If change in ratio is positive → increase in inequality

Summary: Stunting

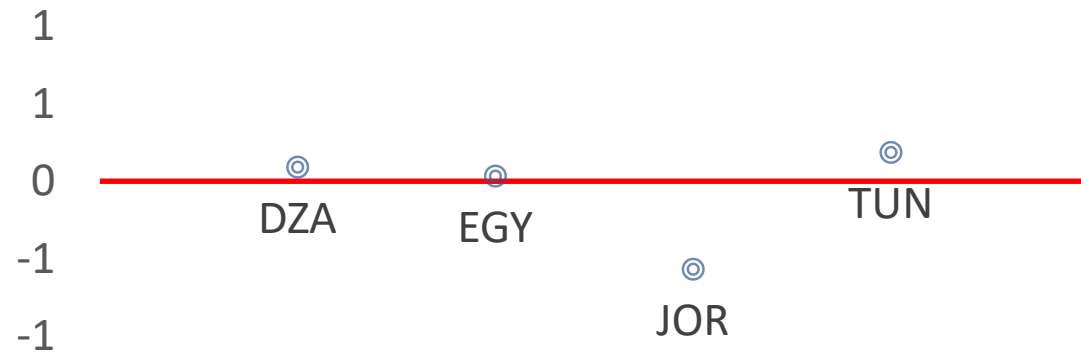


Summary: Overweight



Summary: Infant Mortality Rate

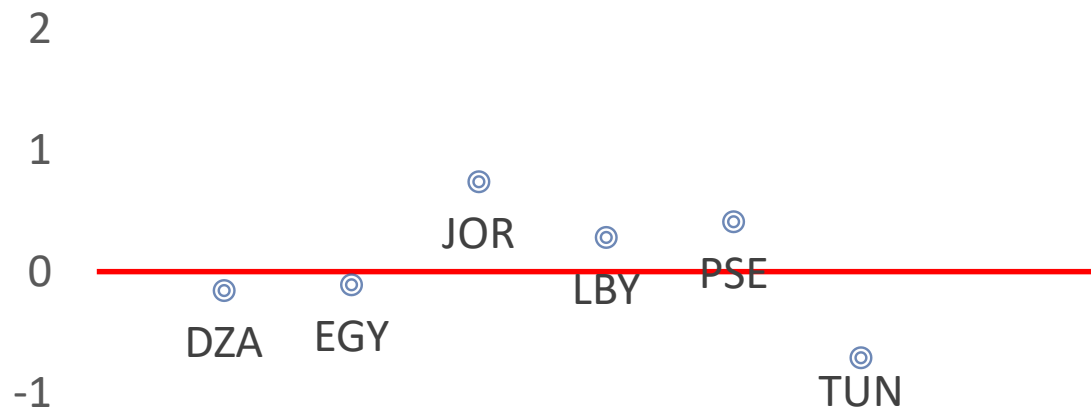
Ratio Rural to Urban



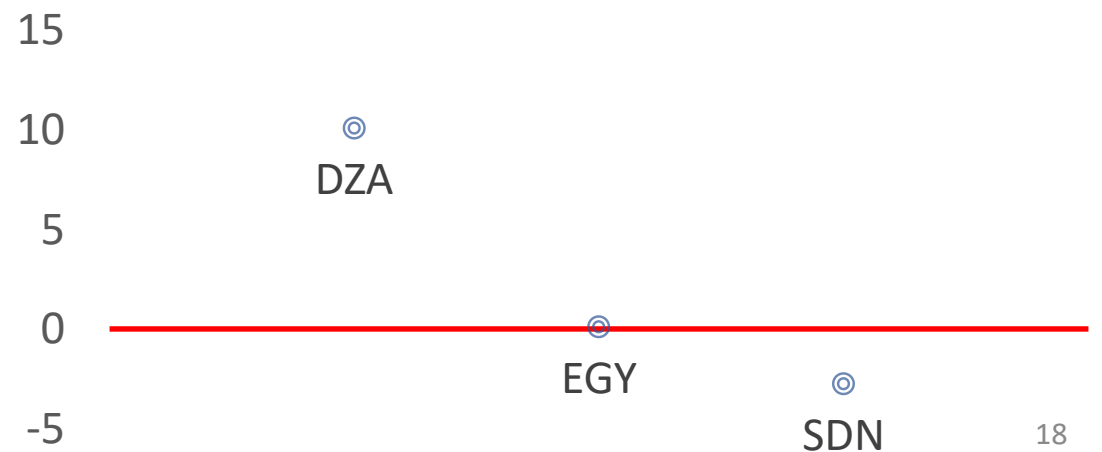
Ratio Poorest to Richest



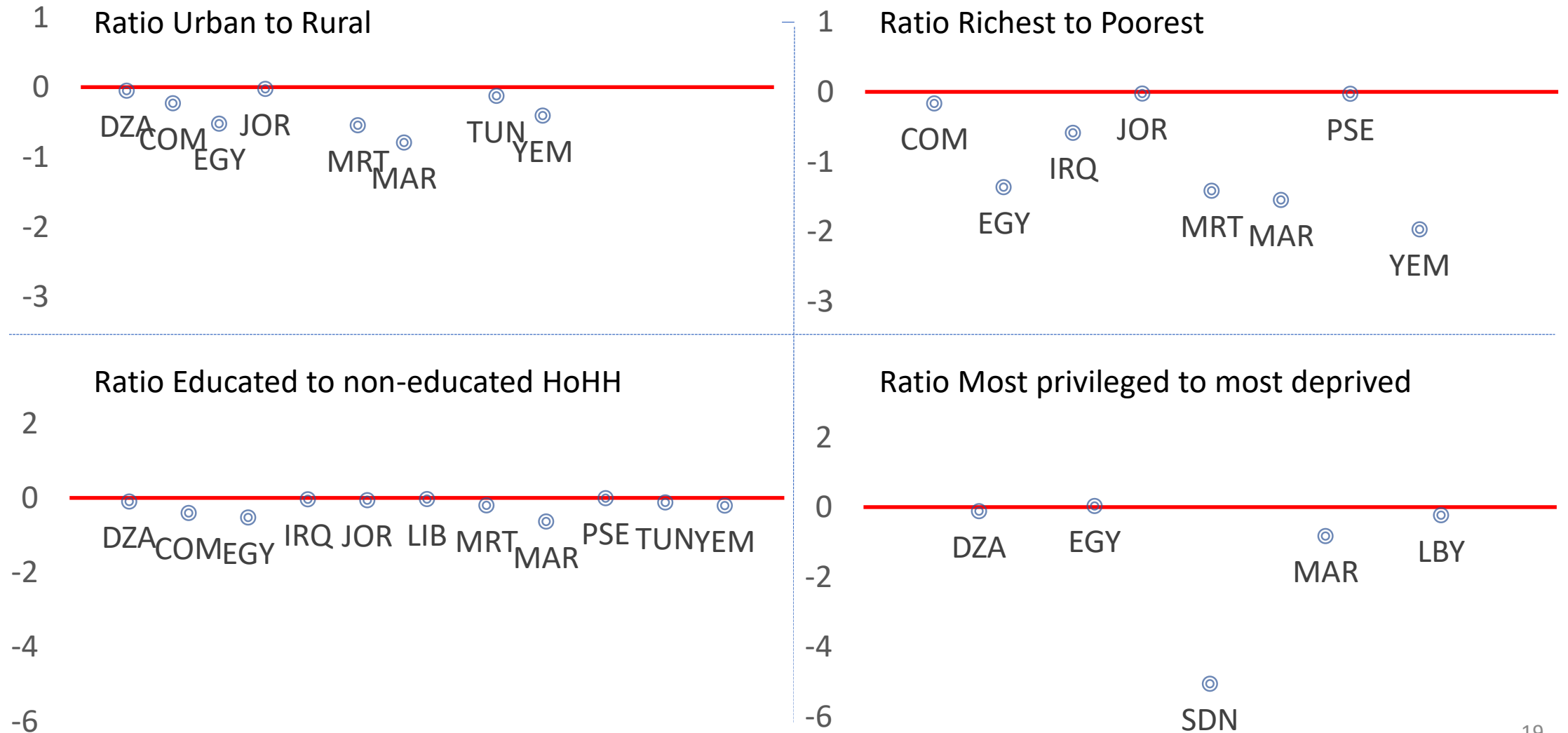
Ratio Non-educated to educated HoHH



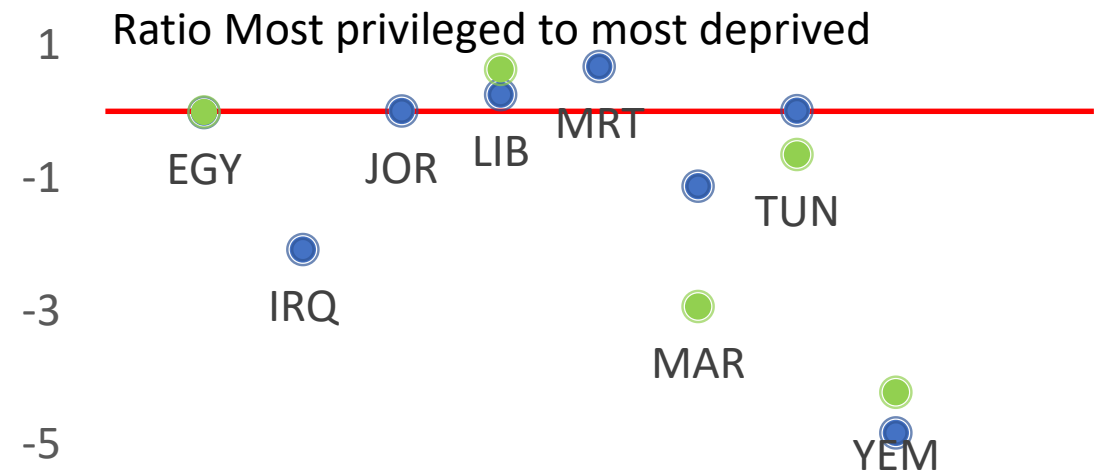
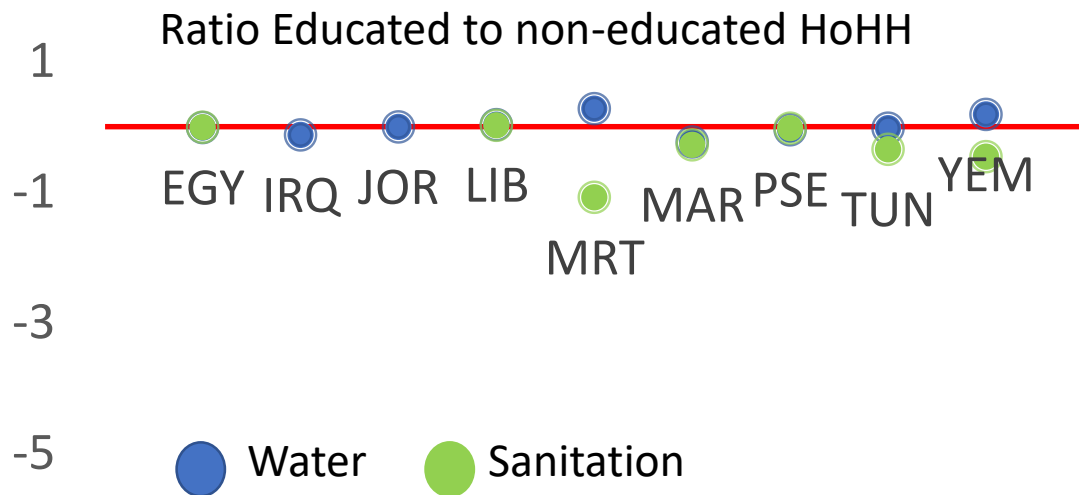
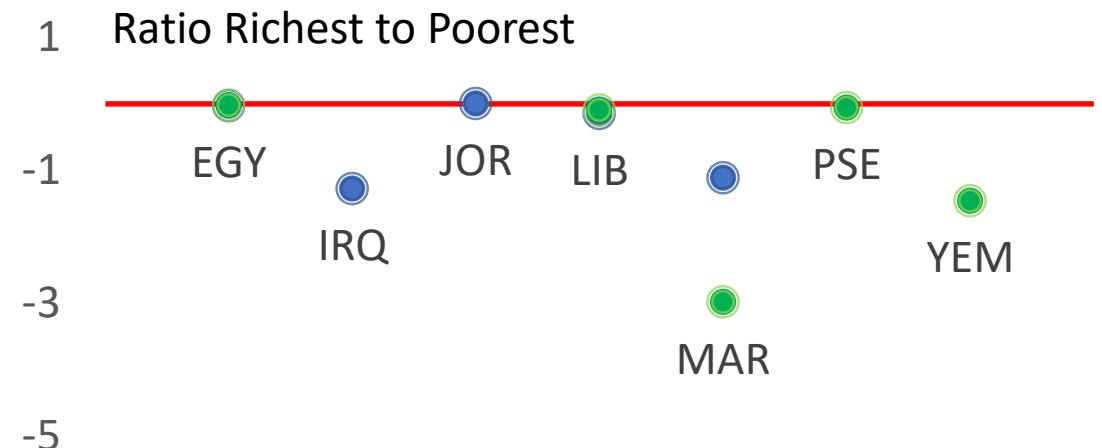
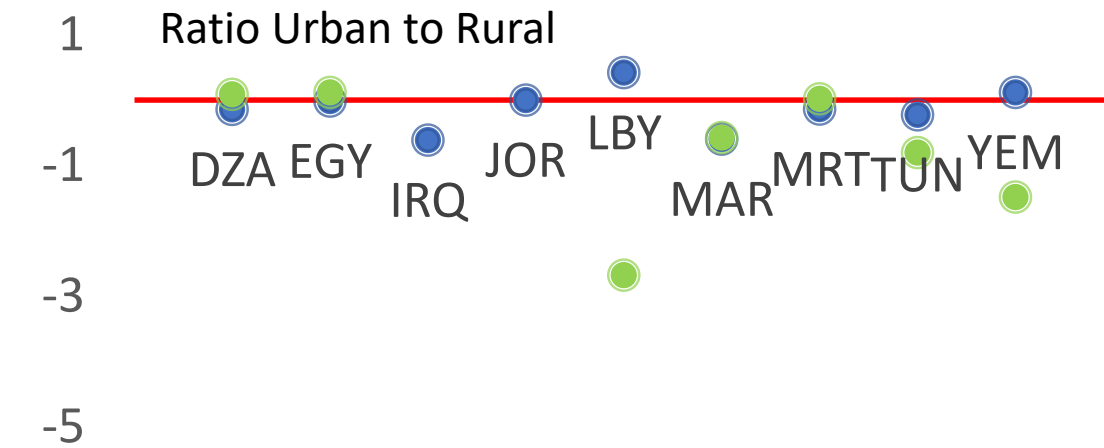
Ratio Most Deprived to most privileged



Summary: Skilled Birth Attendance (SBA)

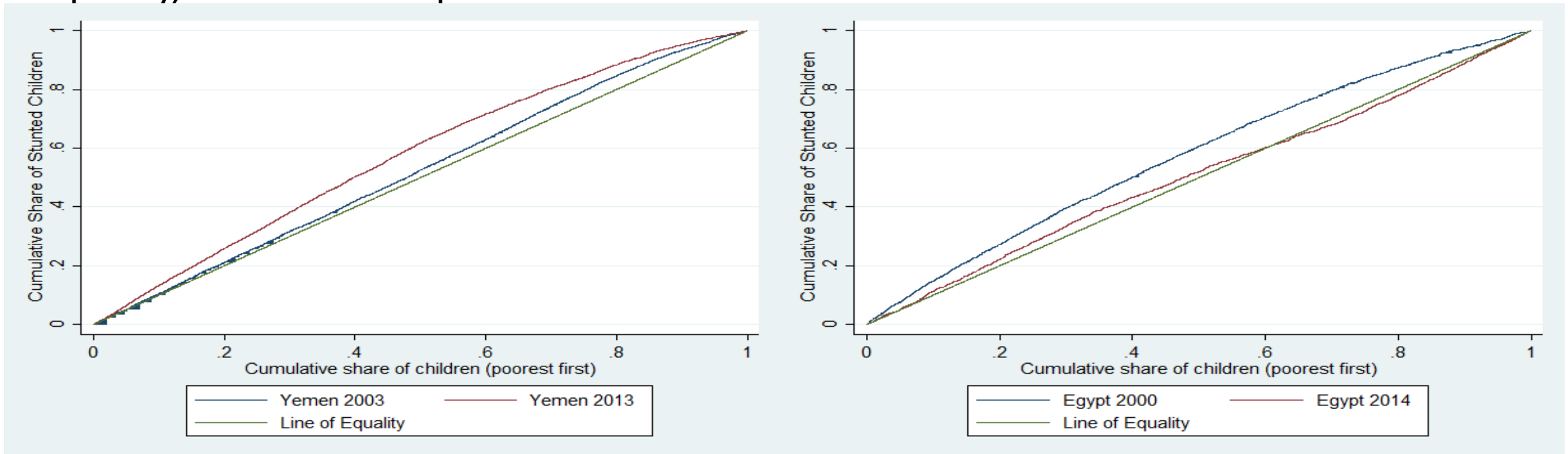


Summary: WASH



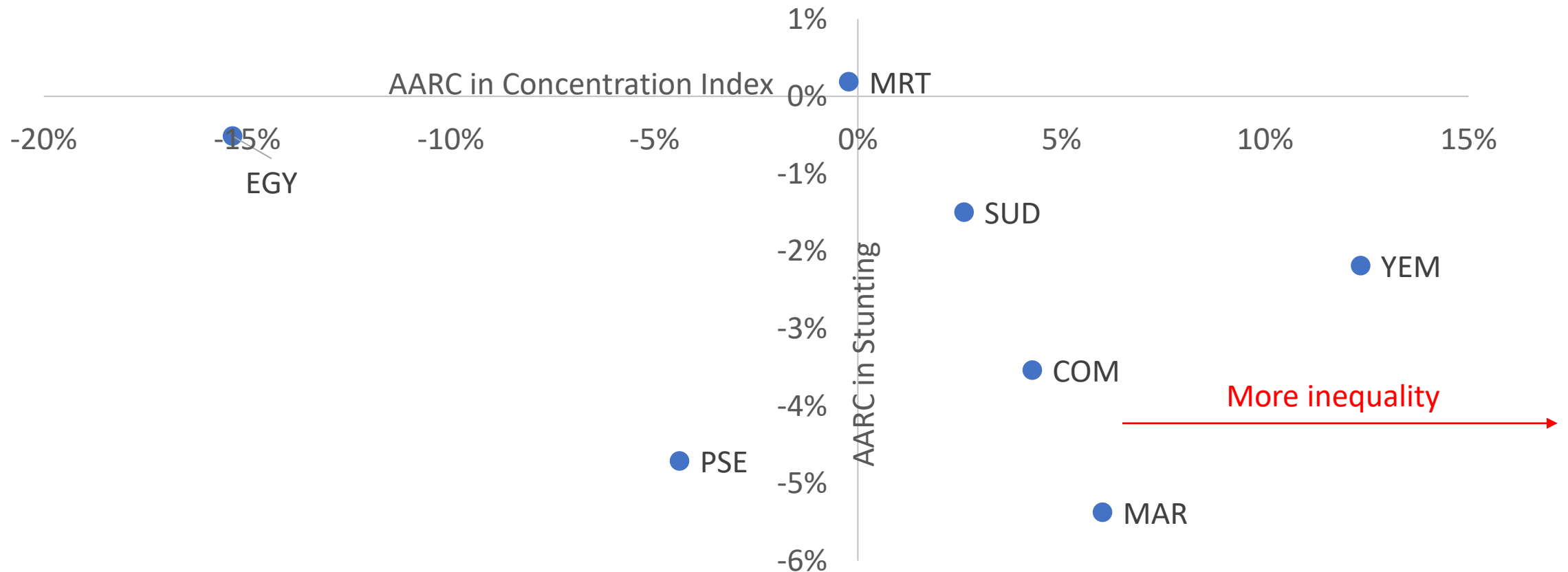
Concentration Curve Analysis

The concentration curve (CC) ranks the health outcome by socioeconomic status, in our case by the wealth index. The horizontal axis of the CC begins with the poorest individual and progresses through the wealth distribution to the richest individual. This relative ranking of wealth is then plotted against the cumulative proportion of health outcome on the vertical axis. The further away the CC from the line of equality, the more unequal.



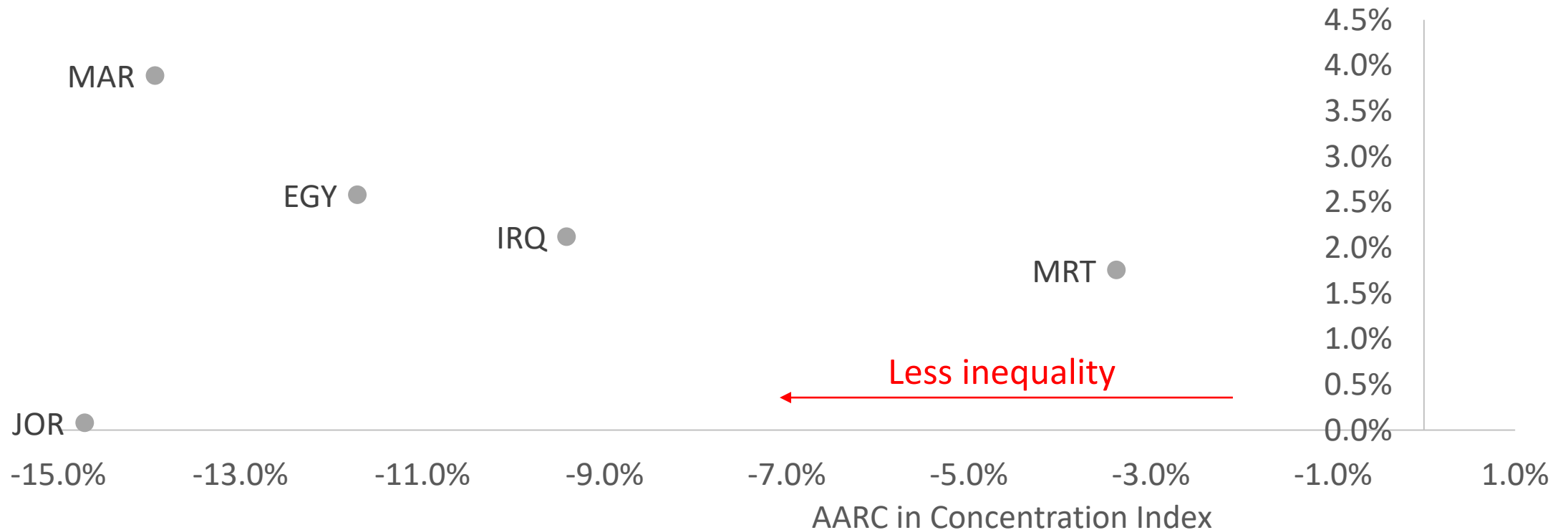
Concentration Index: Stunting

The concentration index (CI) summarizes the magnitude of inequality and is defined as twice the area between the concentration curve and 45-degree-line. The graph below shows the changes in CI (modified by Wagstaff (2005)) and average annual changes in the rate of stunting.



Concentration Curve: Skilled birth attendance

Generalized concentration index (CI) summarizes the magnitude of inequality and is defined as twice the area between the concentration curve and 45-degree-line. The graph below shows the changes in CI (generalized CI) and average annual changes in the rate of stunting.



Conclusion

- There is only one health outcome for which inequalities have decreased across all countries and characteristics: Skilled birth attendance (SBA)
- Inequalities across child mortality also persist in most countries, but not for all characteristics.
- Child nutrition indicators show persisting or even increasing inequalities across socio-economic characteristics in many countries.
- Water and sanitation indicators show persisting inequalities mainly between rural and urban areas.

Thank you for your
attention!

Questions for discussion

- How do we define inequality?
- What are suitable characteristics of the most privileged/most deprived groups?