

# Benchmarking welfare outcomes in PNG

Sharad Tandon and  
Darlan Naidoo

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# Our motivation: wellbeing and welfare in PNG.

## What material challenges and hardships do people face?



- ❖ **There are many ways to investigate socio-economic hardship and deprivation. We can consider PNG at the national level, and at the level of households and individuals...**
- ❖ **Measuring income and the economy at the national level**
  - For example, GDP growth, GDP per capita, inflation.
  - PNG ranked just outside of the top 100 countries by the size of its economy in nominal terms (GDP= \$31.6 billion in 2022). Real GDP growth was 4.3% in 2022. ...*what will that mean for households?*
- ❖ **The broad question about wellbeing and welfare has many dimensions at the household level**
  - Consumption/income, food security
  - Education- who is finishing school? What are they learning?
  - Health care access and health outcomes
  - Access to water and sanitation, and electricity

# Is there change in welfare over time? To investigate, we use **household survey data** at different time points



*There is a range of insightful data that just hasn't been connected yet*

- ❖ **The 2009 Household Income and Expenditure Survey (HIES) is a nationally representative household survey-** our starting point, which we then build a picture with:
- ❖ **The Demographic and Health Survey from 2016-2018**
  - Allows a broad estimation of how well-being in multiple welfare dimensions has changed
  - Allows an imputation of monetary poverty- the latest such estimate since the 2009 HIES
- ❖ **A series of random digit dialing phone surveys were conducted during COVID-19 and beyond**
  - Allow a partial investigation of how welfare has evolved since 2018
- ❖ **A new nationally representative households survey was fielded in 2022- the Socio-Demographic and Health Survey**
  - Summary statistics of many key welfare indicators have been released
  - Allow a partial understanding of changes in many broad well-being indicators

In 2009, about 2 out of 5 people were consuming less than US\$2.15 a day (adjusted for purchasing power)

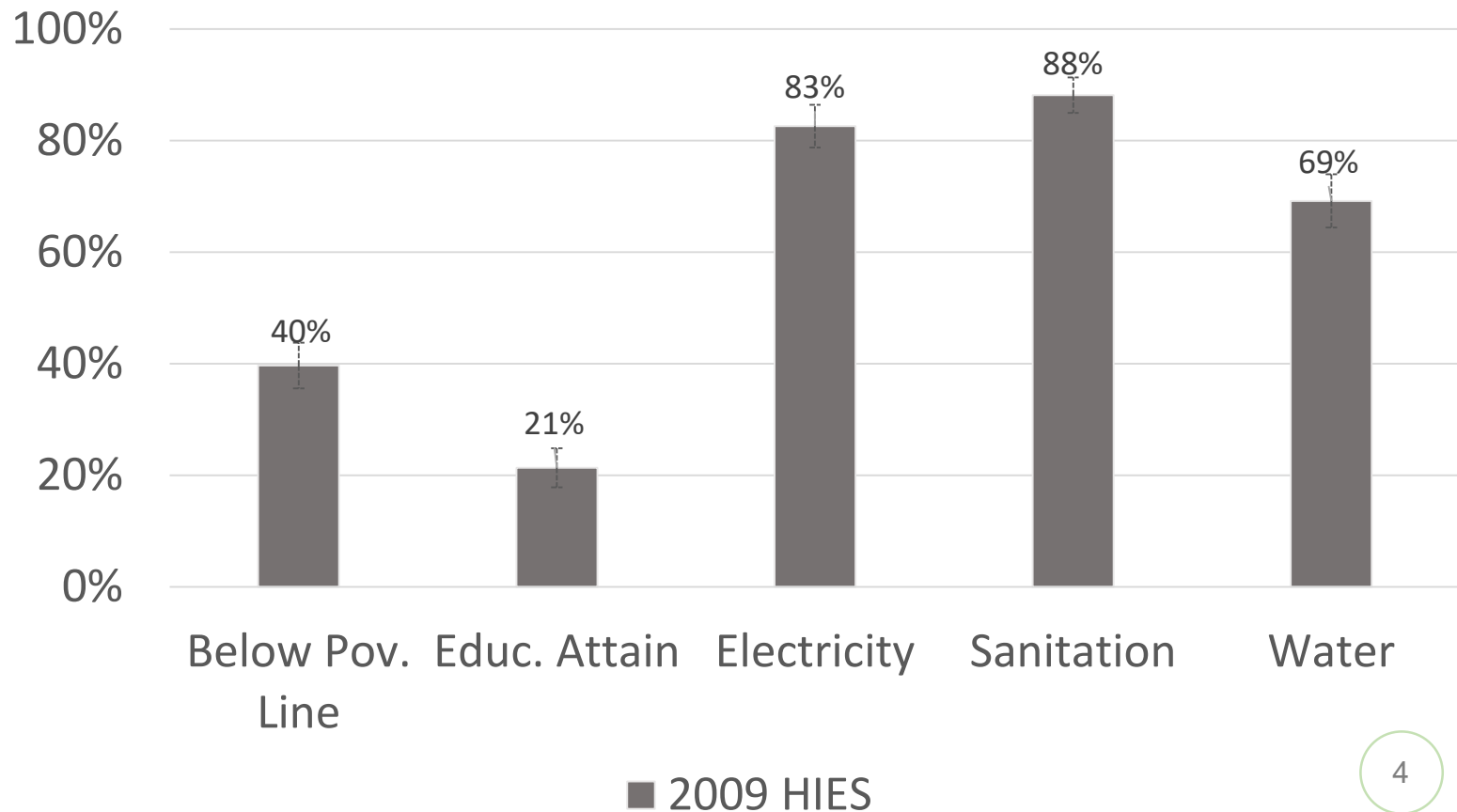


❖ The 2009 HIES is the **only (recent) survey** from which BOTH monetary deprivation (poverty) and a range of non-monetary deprivation can be estimated directly

❖ **Indicators include**

- In household with no adult with primary educ. or higher
- No electricity grid access
- No access to limited standard sanitation
- No access to limited standard drinking water

Figure 1: Share of population deprived...



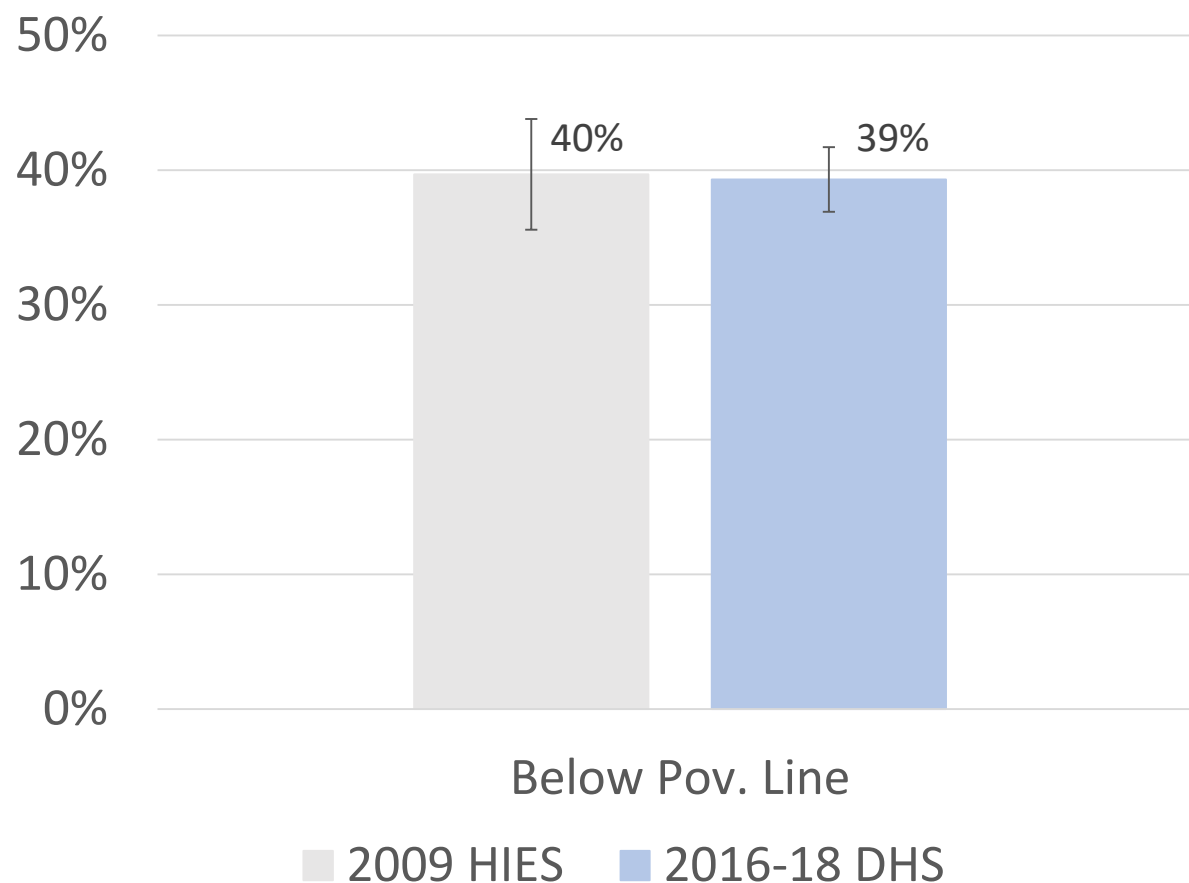
# Estimations... Imputations... Projections...

- ❖ **We employ a range of methods to make the best use of data over time taking into consideration differences in survey questions and samples**
  - Focus on **comparable data** across surveys
- ❖ **Estimating food security which is a proxy for hardship/poverty...**
  - Use the sample from the DHS to estimate severe food security for the population in 2017
  - Based on the food insecurity experience scale (FIES), which consists of 8 questions.
- ❖ **Imputation of the proportion of households below the international poverty line**
  - We look at the 2009 HIES survey non-monetary indicators and their relation to consumption
  - We then use the same variables that are common to the DHS 2016-2018 to impute a rate of household below the line
- ❖ **Projection of the proportion of households below the international poverty line**
  - Based on the HIES data for estimates of poverty in 2009, and economic growth

# Share of population with consumption level under US\$2.15 is the same in 2009 and 2017



Figure 2: Share of population...



❖ Food security estimates using DHS 2016-18 suggest deprivation is 30.6 percent [28.5- 32.7]

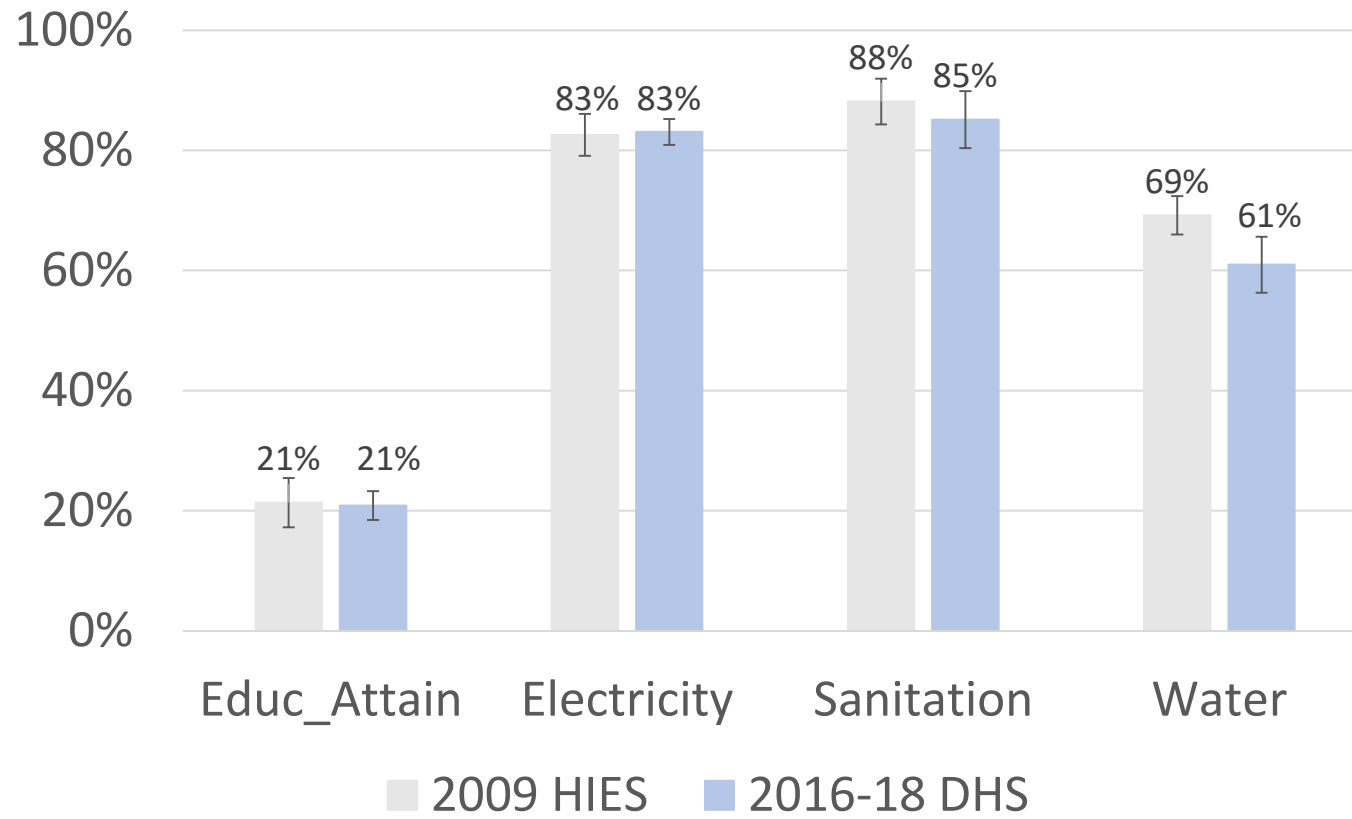
❖ Projections to 2017 based on real per capita economic growth suggest 28.2 percent [24.3-32.1] poverty rate

- Assumes 85% of economic growth passes through to households and is evenly distributed
- These assumptions might not be accurate

# Little change in nearly all dimensions of welfare/wellbeing between 2009 and 2016-2018



Figure 3: Share of population...



- ❖ These indicators can be directly compared across surveys without imputation. Are components of the multi-dimensional poverty index “MPI”, which is about 75 percent (very high).
- ❖ Why hasn't access to services improved?
- ❖ Initial SDES statistics from 2022 suggest little change since

# Many indicators of well-being warrant urgent consideration- PNG could improve and ranks close to the least developed countries

**Table 1. Share of the Population Deprived in Each Indicator in the World Bank's Multidimensional Poverty Measure**

	Monetary Poverty- Imputation	Monetary Poverty- Severe Food Insecurity	Monetary Poverty- Projection	Educational Attainment	Educational Enrollment	Electricity	Sanitation	Drinking Water
Share Deprived	39.3	30.6	28.2	20.8	41.8	83.1	85.1	61.0
International Rank	113 Out of 122 Countries	108 Out of 122 Countries	106 Out of 122 Countries	89 Out of 122 Countries	84 Out of 88 Countries	118 Out of 120 Countries	93 Out of 99 Countries	112 Out of 112 Countries
Comparator Countries	Angola, Lesotho, Eswatini, Zimbabwe, Uganda, and Tanzania	Togo, Kenya, Burkina Faso, Nigeria, Chad, Angola	Ethiopia, Liberia, Togo, Kenya, Burkina Faso, Nigeria	Lesotho, Sao Tome and Principe, Tunisia, Timor-Leste, Pakistan, Bangladesh	Mozambique, Chad, The Gambia, Yemen, Burkina Faso, Liberia	Zambia, Niger, Liberia, Malawi, Chad	Ghana, Benin, Togo, Niger, Chad, Sierra Leone	Mozambique, Ethiopia, Sudan

Notes: All estimates aside from the imputation and projection of monetary poverty were constructed using the 2016-18 Demographic and Health Survey (DHS) alone; the imputation of monetary poverty was constructed with household-level variables from the 2016-18 DHS, using the average relationship between total household expenditure and these variables in the 2009 Household Income and Expenditure Survey (HIES); and the monetary poverty projection was constructed using total per capita expenditure in the 2009 HIES, multiplied by 85 percent of the real GDP growth that occurred between 2009 and 2018. Rankings of the share deprived are relative to the figures reported in the World Bank's Poverty and Inequality Platform, using data collected between 2014 and 2020. Comparator countries are the three countries with the closest shares deprived, both above and below (listed in order from least deprived to most deprived).



# Even among the richest households the level of deprivations is high

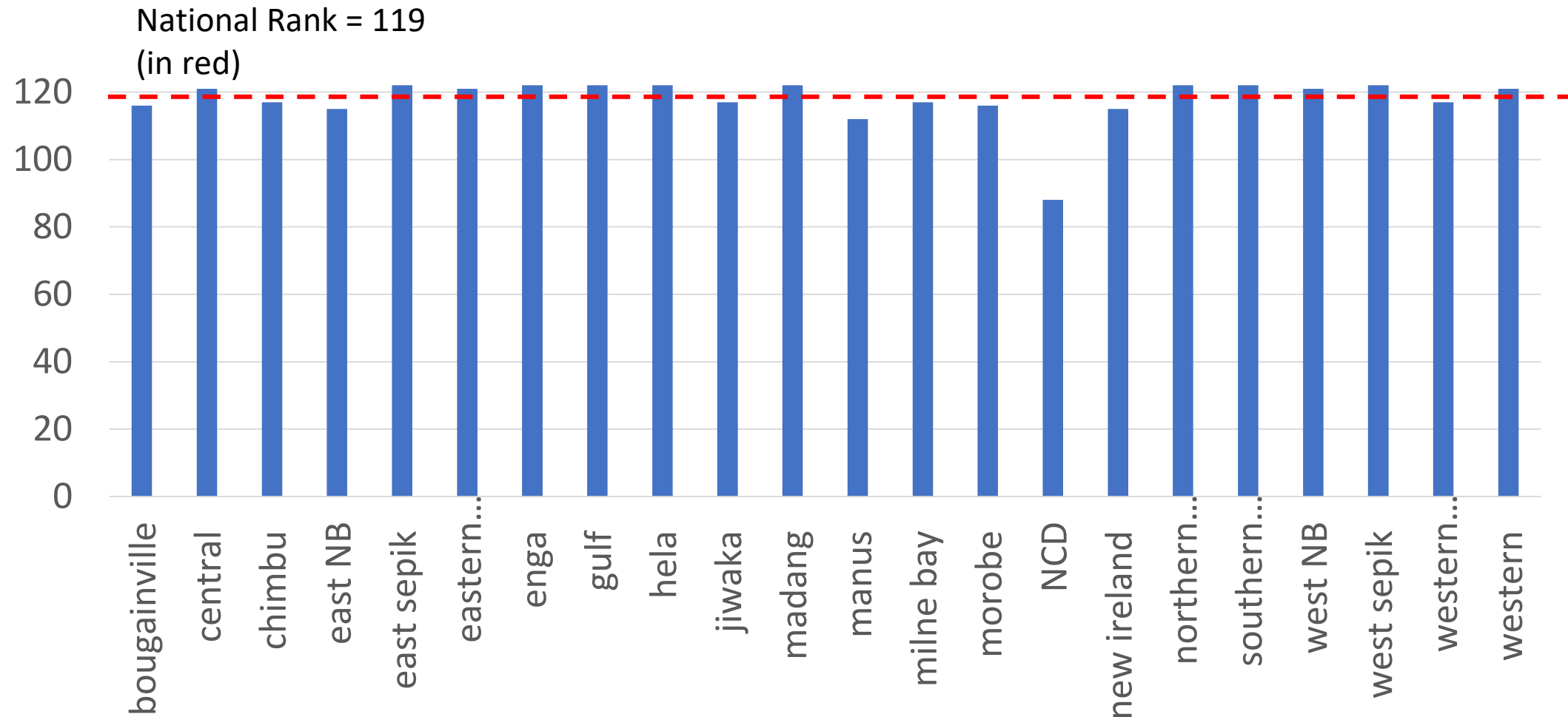
**Table 2: Comparing the Households in the Top Decile of Expenditure in Papua New Guinea to the Average Population in the Rest of the World**

	Educational Attainment	Educational Enrollment	Electricity	Sanitation	Drinking Water	Average International Rank of Across the 5 Indicators in Table 7 (rounded to nearest digit)	Median International Rank of Across the 5 Indicators in Table 7
Share Deprived	13.8	14.2	52.1	63.0	34.4	85	79
International Rank	79 Out of 122 Countries	61 Out of 88 Countries	105 Out of 120 Countries	78 Out of 99 Countries	104 Out of 112 Countries	100 Out of 122 Countries	92 Out of 122 Countries
Comparator Countries	Dominican Republic, Tanzania, Thailand, Bolivia, Nicaragua, Ghana	Uganda, Vanuatu, Togo, Cameroon, Timor-Leste, Djibouti	Burkina Faso, Togo, Sudan, Angola, Namibia, Mauritania	Zambia, Liberia, Sao Tome and Principe, Guinea-Buissau, Cote d'Ivoire, Comoros	Nigeria, Sierra Leone, Zambia, Chad, Niger, Mauritania	Senegal, The Gambia, Ghana, Malawi, Tanzania, Kenya	Pakistan, Lesotho, Sao Tome and Principe, Senegal, Comoros, Cote d'Ivoire

Notes: All estimates were constructed using the 2016-18 Demographic and Health Survey (DHS). Rankings of the share deprived are relative to the figures reported in the World Bank's Poverty and Inequality Platform, using data collected between 2014 and 2020. Comparator countries are the three countries with the closest shares deprived, both above and below (listed in order from least deprived to most deprived).

# Multidimensional Poverty Index: Some regional variation, but no province would rank well internationally

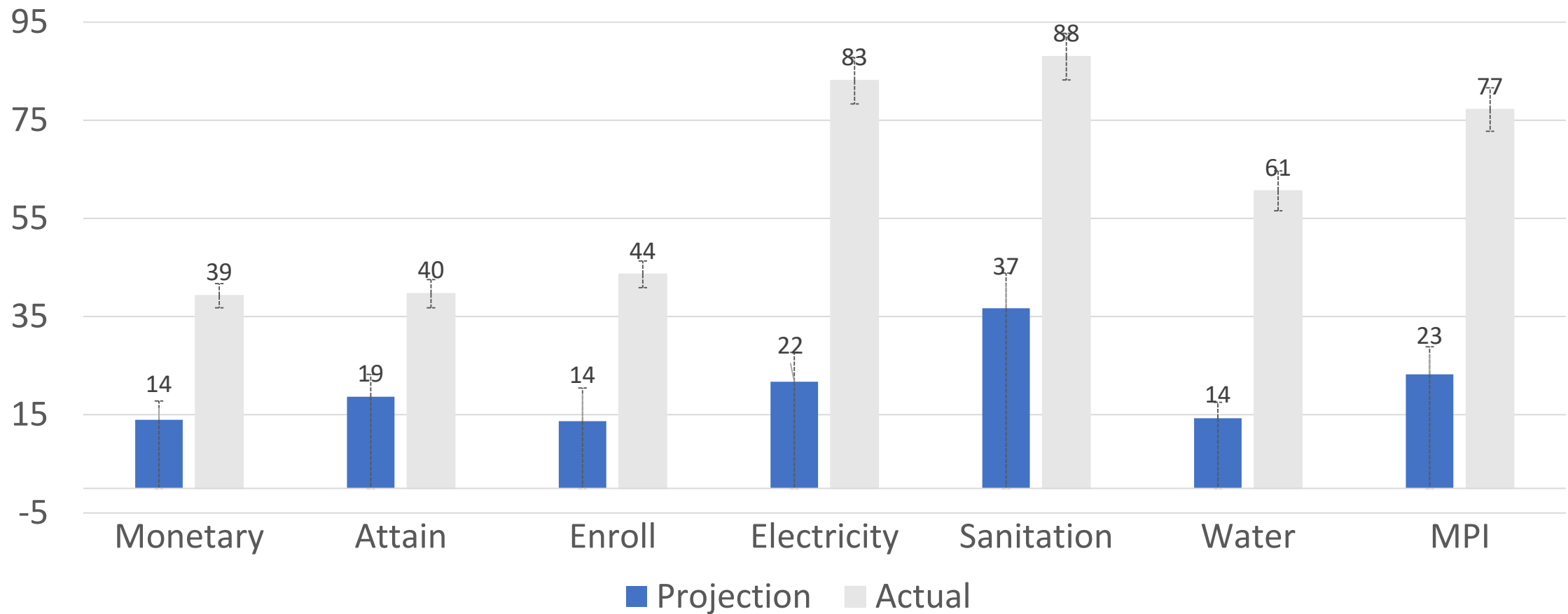
Figure 4. International Rank based on Share of the Population Deprived in Each Indicator in the MPI



# The lag in wellbeing is more than would be predicted by size of the economy...



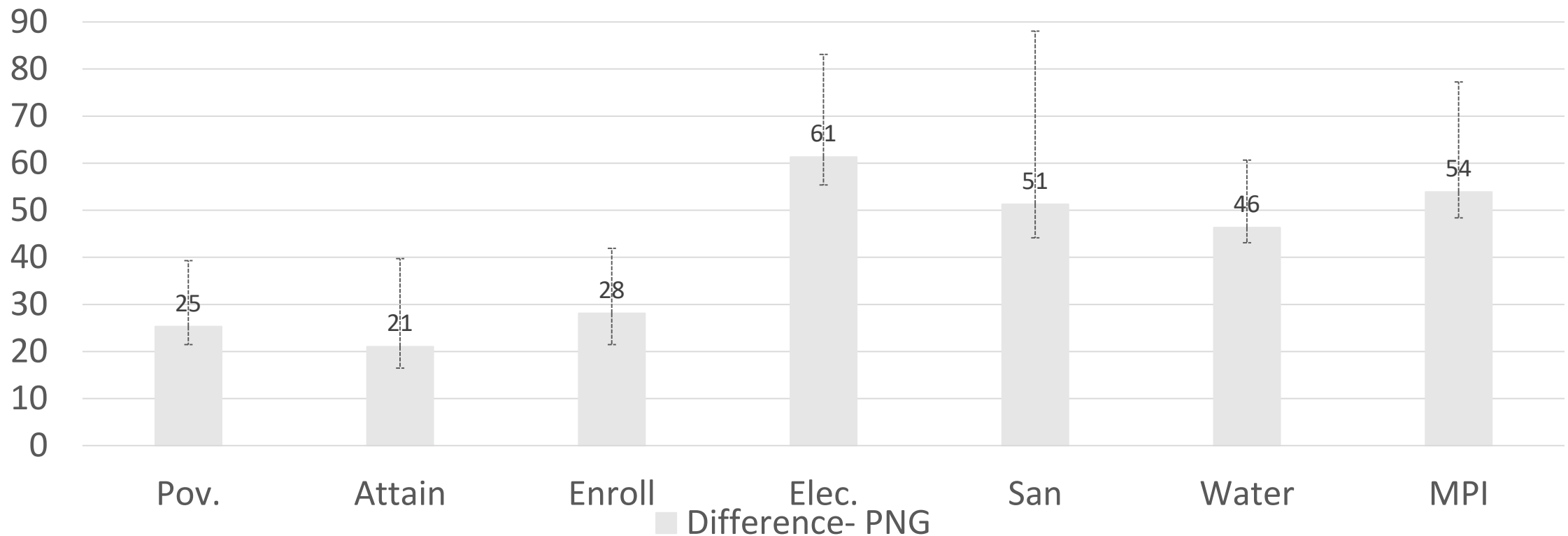
**Figure 5: Differences between Actual and Projected Levels of Deprivation based on Economic Activity**



# The lag in wellbeing is more than would be predicted by size of the economy...



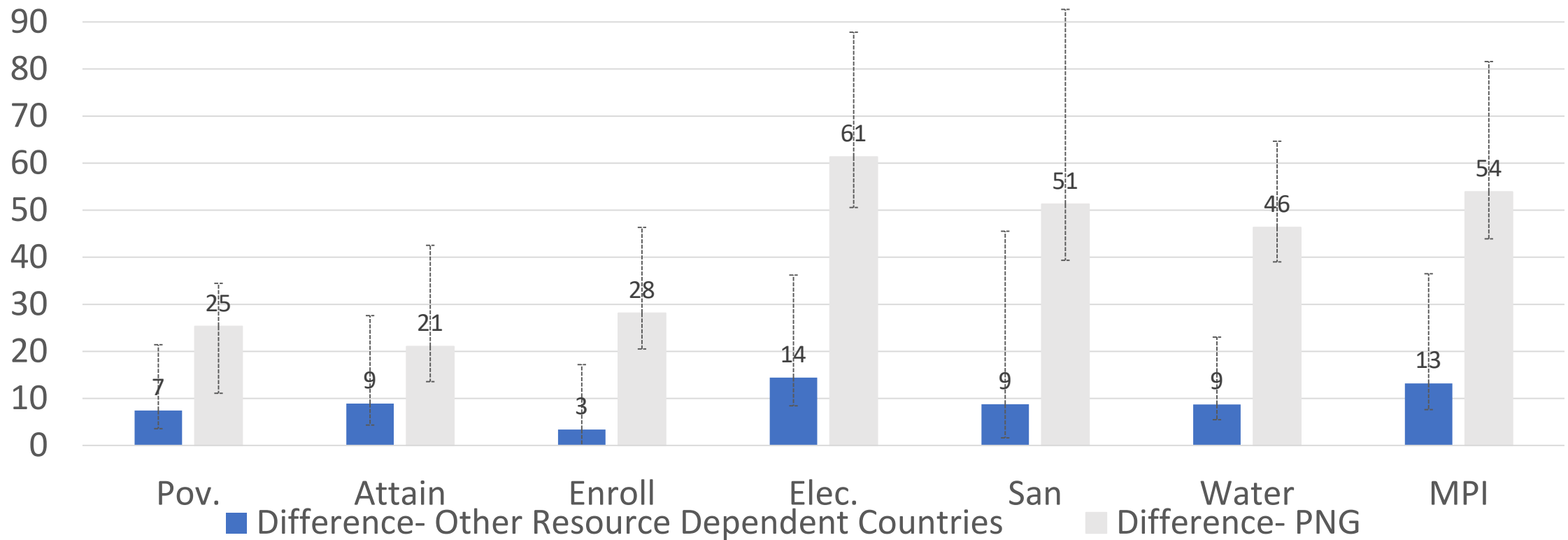
**Figure 6a. How Much Larger the Differences Between GDP Projections and Actual Deprivations are in PNG**



... even compared to resource rich countries



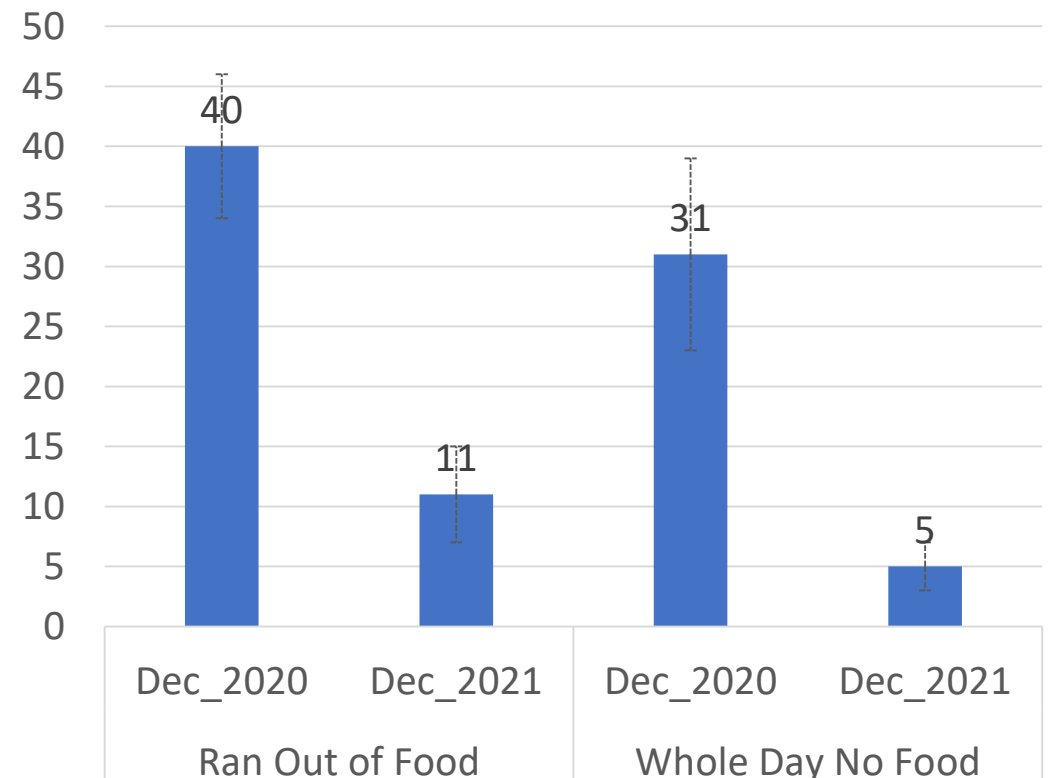
**Figure 6b. How Much Larger the Differences Between GDP Projections and Actual Deprivations are in PNG Relative to Other Resource-Dependent Countries**



# Food Insecurity likely worsened over the COVID-19 pandemic, but then rebounded.

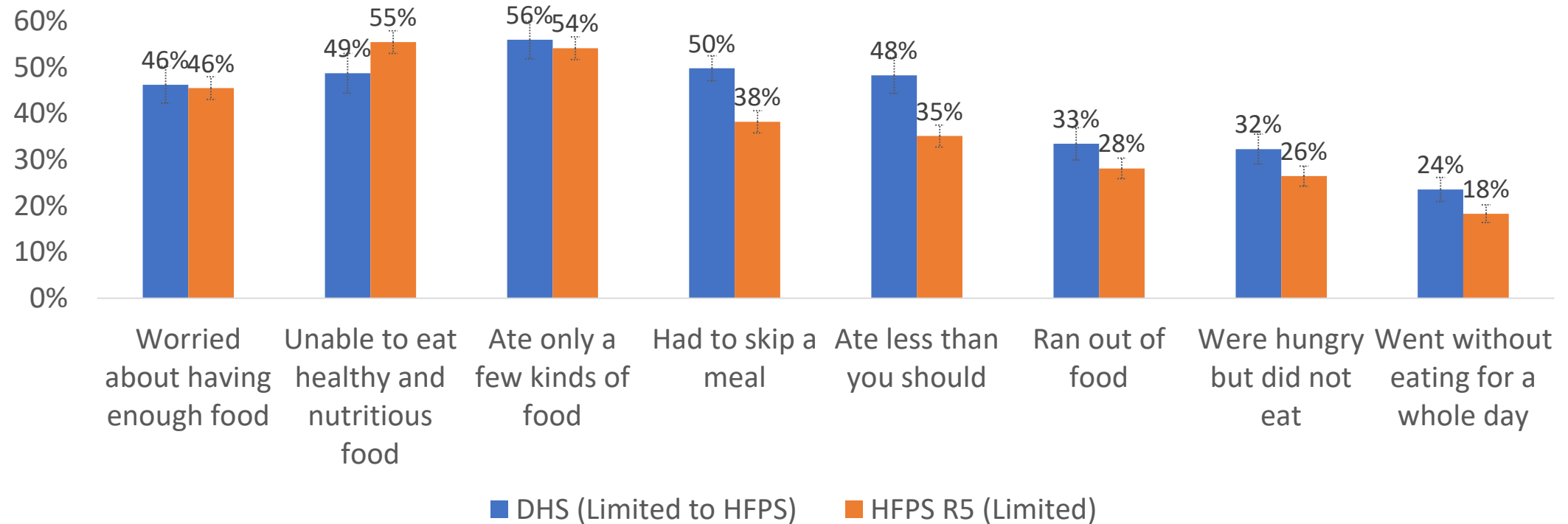


**Figure 7. Change in the Share Experiencing Food Insecurity the Week Before the Mobile-Phone Survey During the COVID-19 Pandemic, December 2020-December 2021**



# Food Insecurity in the DHS 2016-18 compared to a 2022 Mobile-Phone Survey, seem similar when comparing similar subsamples

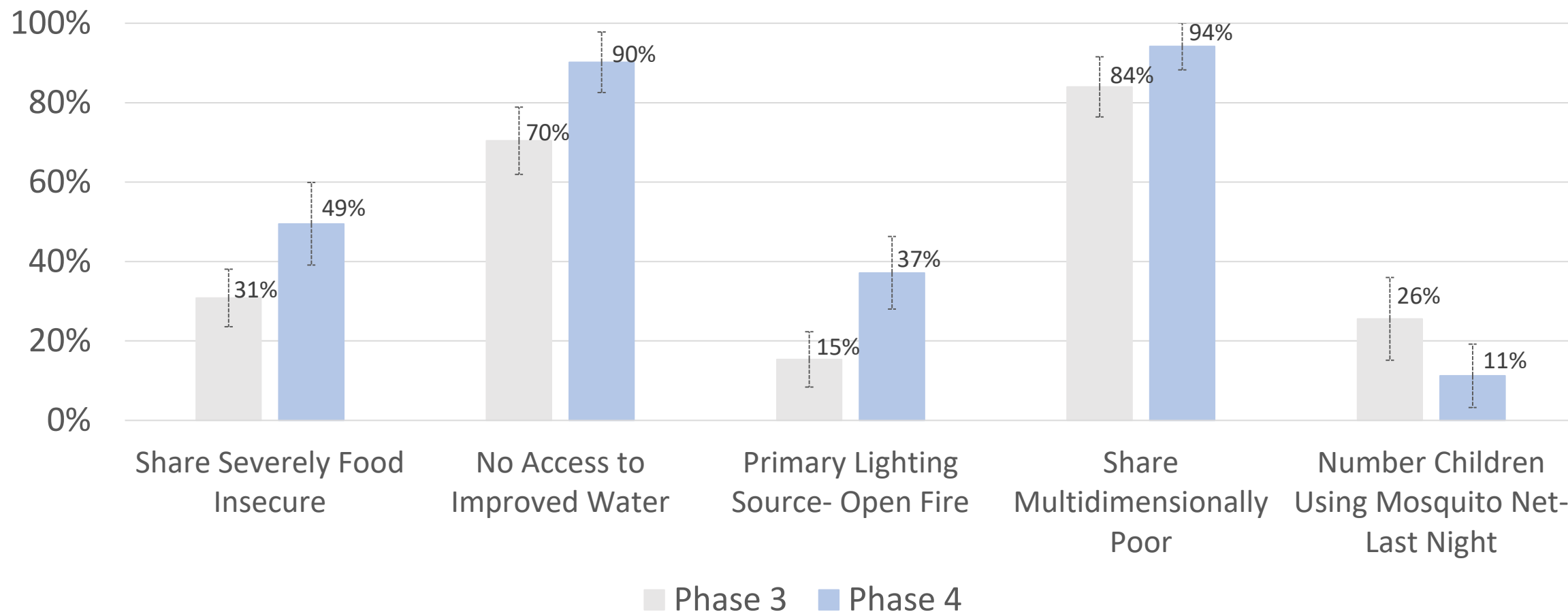
**Figure 8. Share of households reporting food insecurity in the past 12 months for all eight food insecurity questions- HFPS and DHS subsamples\***



\*Note: Samples in both surveys limited to households with mobile phones, household head with at least primary school education and in the top 80 percent of the DHS wealth index. This doesn't however, completely solve the problem of mobile-phone surveys having biased samples.

Some evidence that the pandemic and other common shocks, can have broad impacts, which may be long term implications...

**Figure 9. Changes in Food Security and Service Access Following the Earthquake in 2017 (DHS 2016-18)**





# Implications

- 1. PNG is clearly a global outlier when it comes to both the:**
  - a) depth of deprivations across dimensions and;**
  - b) the lack of any improvement over time.**

*this highlights the urgency with which the population needs support*
- 2. The results demonstrate that economic growth has not benefitted most of the population.**
- 3. The results illustrate concrete ways to fill critical data and knowledge gaps. Specifically, there are potential uses for the 2022 SDES, when that becomes publicly available.**
- 4. Lastly, the results illustrate the need to more thoroughly investigate the causes of poor welfare outcomes in the country.** Distinguishing between the causes are important when prioritizing and designing interventions that will have the largest impact