

Advanced Poverty Research Methods Online Course

3rd December 2021

Multiple malnutrition and food poverty

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Dadabhoy Naoroji's poverty work

PUNJAB, 1876-7
Cost of Absolute Necessaries of Life of an Agricultural Labourer
FOOD—Man

Items	Quantity per day	Quantity for 1 year	Price for Re. 1	Cost for 1 year		Remarks	
				Rs.	As.		
Flour	1 Seers	365	25	14	9	The price in the Report is 20 seers for first sort; I have taken 25 per cent lower price for lower quality. The price in the Report is 10 seers for first sort; I take 30 per cent lower price for inferior quality. The price in the Report is 16 seers; I take it 12 per cent lower.	
Rice	1/4	91	13	7	0		
Dal	1/8	45	18	2	8		
Salt	1oz	11	9 1/4	1	3		
Ghee	1oz	11	3	3	11	The price of the Report, which is Government sale price. The price in the Report is less than 2 seers. In taking 3 seers, I lower it above 50 per cent, or rather to the price of oil. The quantity, 1 oz., is also rather lower for a Punjabee.	
Condiment	2 pies worth	3	13	These are regarded as under the mark.	
Tobacco	1 1/2	2	14		
Vegetables	1 pie	1	8		
				Total	37	2	Without any meat, sugar, milk, or any drink or any kind of luxury whatever.

Woman

All the above items will be nearly the same, except tobacco. Deducting tobacco, it will be Rs. 34.2 as; say Rs. 32.

Two More Members In A Family

One young person, say, between 12 and 18, say Rs. 26, though there will not be so much difference.

One young person, say under 12, say Rs. 0, though this cannot be the case generally.

PUNJAB, 1876-77
Cost of Absolute Necessaries of Life of an Agricultural Labourer—Continued.
CLOTHING FOR ONE YEAR

Man	Woman		Remarks		
	Rs.	As.			
2 Dhomes	1	0	No holiday clothing, nor for occasions of joy and sorrow are reckoned.		
2 pairs Shoes	2	0			
1 Turban	1	0			
2 Bunds for warm and cold weather	1	8			
2 Kamlees	4	0			
1 Small piece of cloth for Langootie, etc	0	4			
1 Chadar	0	12			
2 Pajamas	0	12			
Total		10	4	6	11

For one young person, say, Rs. 6; for the second, say nothing.

Family Expenses in Common

	Rs.	As.	
Cottage, Rs. 60; say	4	0	for one year
Repairs Rs. 60; say	3	0	for one year
Cooking and other utensils	3	8	for one year
Firewood, 1/4 anna per day	5	11	for one year
Lamp Oil, oz. per day, at 3 seers per Re.1	3	12	for one year
Total		19	15

Calculated on the lowest scale, with out any furniture, such as cost of mats, or stools or anything

TAKING FOUR IN THE FAMILY

	Food	Clothing	Family Expenses	Total	
	Rs.	Rs. As.	Rs. As.		
Man	37	10	4		
Woman	32	6	11		
Youth (12 to 18)	26	6	0		
Child (under 12)	0	0	0		
Total		95	22	15	137.14—say.

It will be seen, from a comparison of the above figures, that, even for such food and clothing as a criminal obtains, there is hardly enough of production even in a good season, leaving alone all little luxuries, all social and religious wants, all expenses of occasions of joy and sorrow, and any provision for bad season. It must, moreover, be borne in mind that every poor labourer does not get the full share of the average production. The high and middle classes get a much larger share, the poor classes much less, while the lowest cost of living is generally above the average share.

Such appears to be the condition of the masses of India. They do not get enough to provide the bare necessaries of life.

Outline

- Indicators
- Data
- Examples – CIAF, MM, DBM.

The challenge ahead...

*“...for every 1 million spent on public education, the food industry spends 1 billion on advertising. As revealed by a US consumers union report, US\$9.55 million is spent on communications for the Federal and California ‘5 A Day’ programs to encourage eating five or more servings of fruit and vegetables each day... In contrast, the food, beverage, and restaurant industries spent US\$11.26 **billions largely promoting energy dense Group 3 ultra-processed foods** in 2004, overwhelming the government’s health message”.*

(Shrimpton and Rokx, 2012: 25)

OXFORD INDIA PAPERBACKS

Poverty and Undernutrition



Theory,
Measurement,
and Policy

with a Foreword by Amartya Sen

PETER SVEDBERG

Indian Edition

Food Insecurity Experience Scale (FIES), consists of eight questions regarding people's access to adequate food:

During the last 12 months, was there a time when, because of lack of money or other resources:

1. You were worried you would not have enough food to eat?
2. You were unable to eat healthy and nutritious food?
3. You ate only a few kinds of foods?
4. You had to skip a meal?
5. You ate less than you thought you should?
6. Your household ran out of food?
7. You were hungry but did not eat?
8. You went without eating for a whole day?

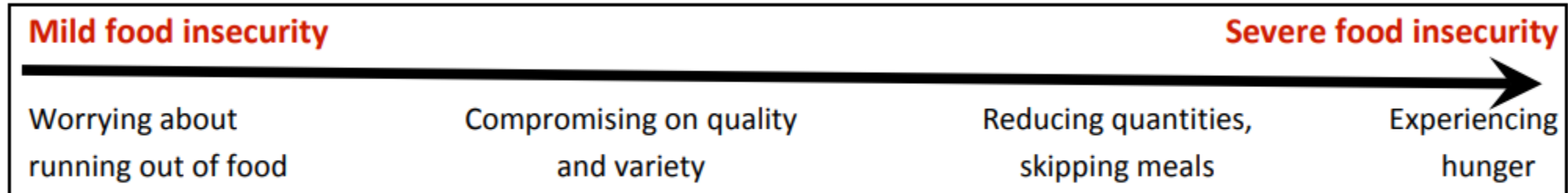


Figure 1: Food insecurity severity along a continuous scale of severity

-People experiencing **moderate levels of food insecurity** will typically eat low quality diets and might have been forced, at times during the year, to also reduce the quantity of food they would normally eat;

-**those experiencing severe levels** would have gone for entire days without eating, due to lack of money or other resources to obtain food.

6.2. CALORIE AVAILABILITY IN SUB-SAHARAN AFRICA

6.2.1. *The FAO Estimation Method*

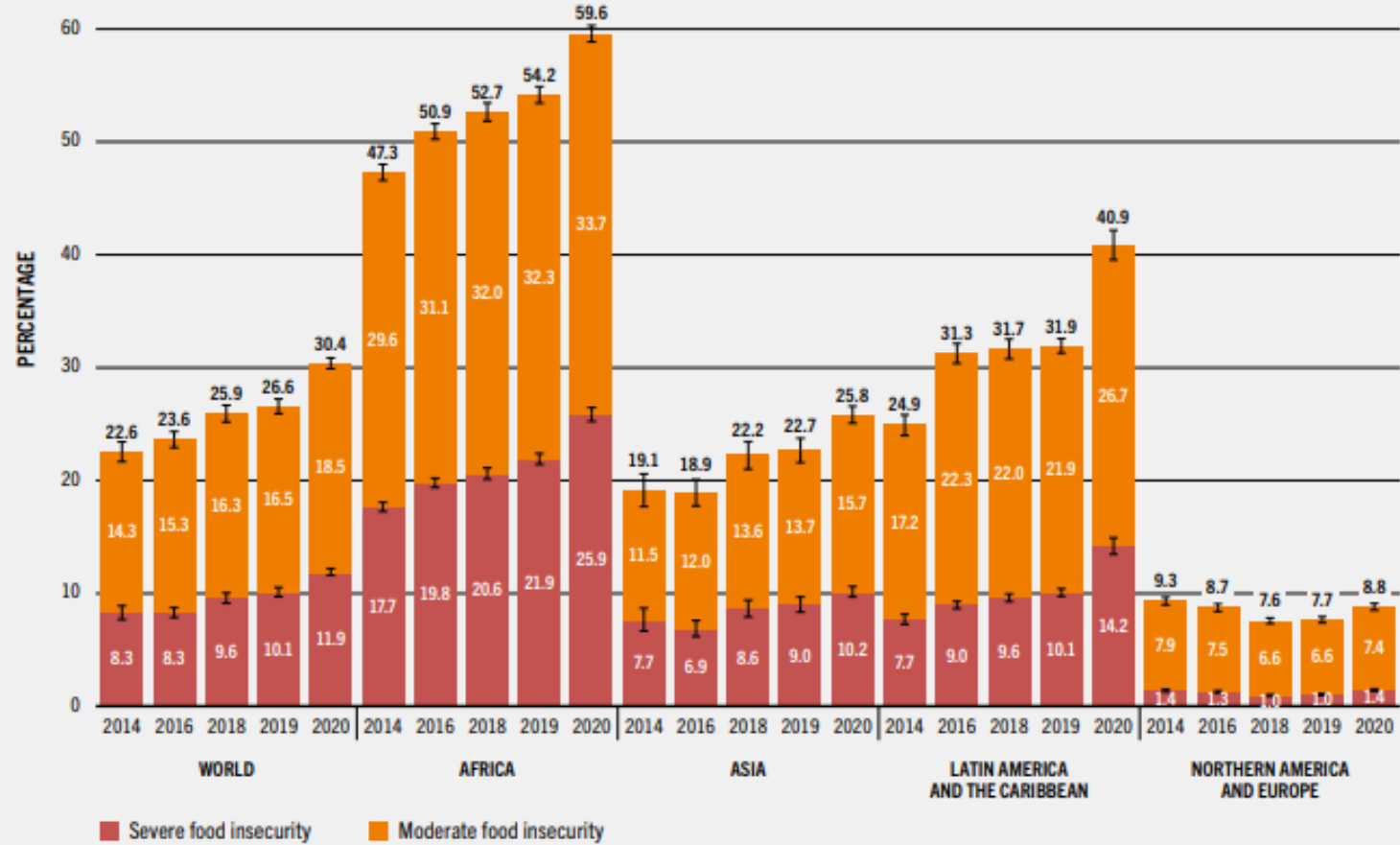
The FAO describes its estimation method as follows:

The total quantity of foodstuffs produced in a country added to the total quantity imported and adjusted for any change in stocks that may have occurred since the beginning of the reference period gives the supply available during that period. On the *utilisation* side, a distinction is made between the quantities exported, fed to livestock, used for seed, put to industrial and other non-food uses, or lost during storage and transportation, and food supplies available for human consumption at the retail level, i.e. in the form food leaves the retail shop or otherwise enters the household. The

per-caput supply of each food item available for human consumption is then obtained by dividing the food supplies available for human consumption by the related data on the population actually taking part of it. Data on per-caput food supplies are expressed in terms of quantity and also, by applying appropriate food consumption factors, in terms of nutrient elements (calories, protein, . . .)' (FAOe 1993: p. 9).

The estimates of the number of calories 'available for human consumption' on a per-capita and per-day basis are reported in the so-called *Food Balance Sheets (FBS)*, which are published regularly and revised and updated concurrently (FAOe 1980, 1984, 1991, 1994, 1996). The food production data that underlie the FAO calorie-availability estimates have been supplied by national governments in 'the form of replies to annual FAO questionnaires'. Wherever no official or semi-official figures are available from the countries themselves, the FAO obtains its own estimates. The calorie content of the various 'available' food items is derived from standardized conversion tables that the organization has produced.

FIGURE 4 MODERATE OR SEVERE FOOD INSECURITY HAS BEEN CLIMBING SLOWLY FOR SIX YEARS AND NOW AFFECTS MORE THAN 30 PERCENT OF THE WORLD POPULATION



Anthropometric measures

“...well-to-do (Indian) children have roughly the same height as Caucasian children at the age of 5... (and)... there is an enormous gap between child height within India, correlated with the economic/social status of families...”

(Svedberg, 2002, p176)

Data

- Demographic and health surveys (DHS), www.dhsprogram.com
- UNICEF's Multiple Indicator Cluster Surveys (MICS), <https://mics.unicef.org/>

Conventional Indicators of (child) undernutrition

- **Wasting** – low weight for height (W/H)
 - Reflects recent/acute undernutrition
- **Stunting** – low height for age (H/A)
 - Reflects longer term/chronic undernutrition
- **Underweight** – low weight for age (W/A)
 - MDG1 target indicator

SDG 2.2

By 2030 end all forms of malnutrition, including achieving by 2025 the internationally agreed targets on stunting and wasting in children under 5 years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women, and older persons

Indicators

Prevalence of stunting and wasting in children under 5 years of age

<http://indicators.report/indicators/i-10/>

Prevalence of Undernutrition among Indian children, U5 yrs.

Previous work analysed data from India (2005):

62 million had low height for age (48%,stunting),

55 million had low weight for age (43%, underweight)

26 million had low weight for height (20%, wasting).

Using Svedberg's CIAF showed around 80 million children (62%) experienced either stunting, wasting and/or underweight.

→ roughly 18-25 million malnourished children were missed when stunting or underweight were used.

CIAF disaggregated, Indian children 0-5 yrs

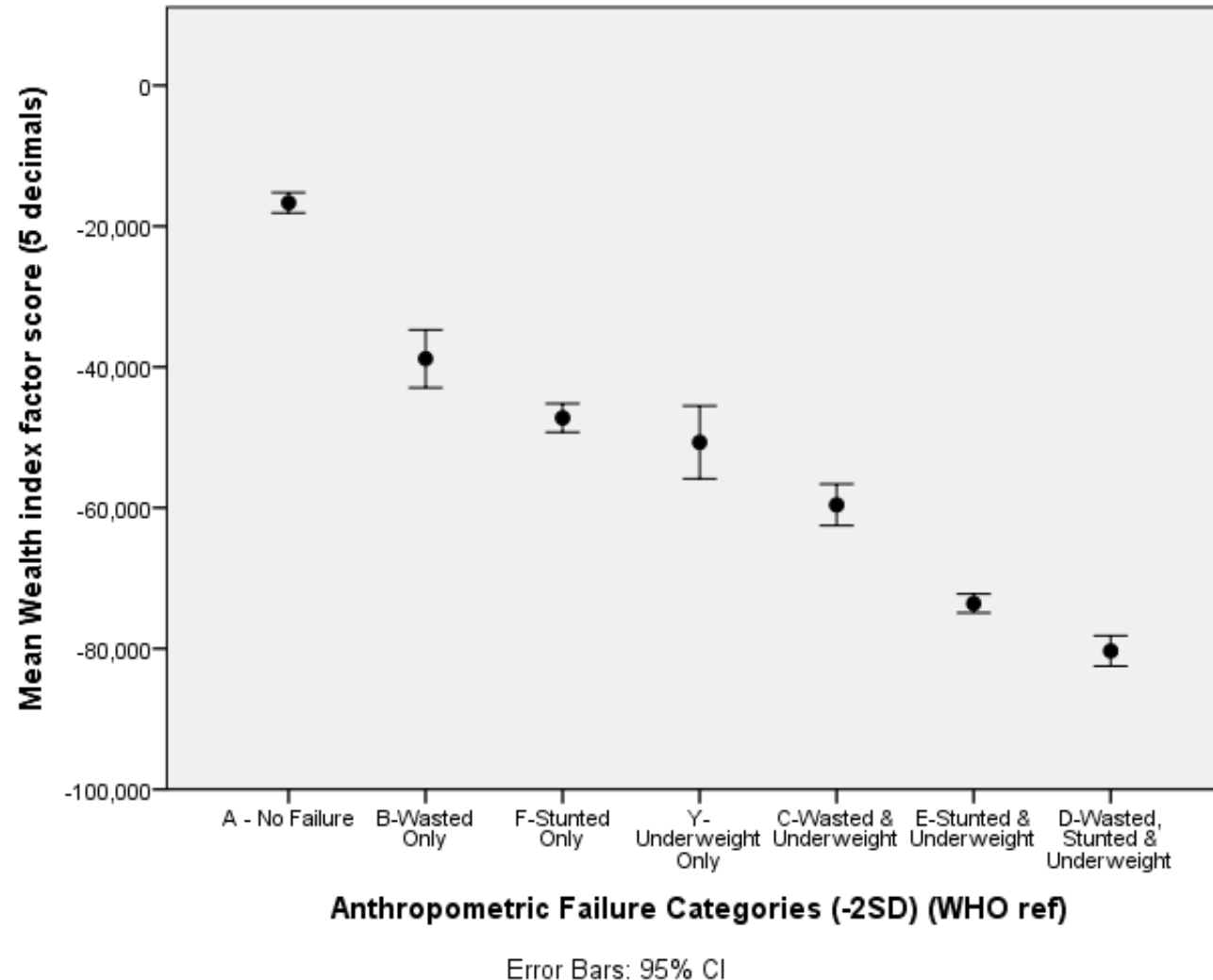
	Estimate
A - No Failure	38%
B-Wasted Only	4%
C-Wasted & Underweight	7%
D-Wasted, Stunted & Underweight*	9%
E-Stunted & Underweight	25%
F-Stunted Only	15%
Y-Underweight Only	2%
Total	100%

Source: Calculated from NFHS-3 data (2005/06);

** → equates to around 11 million children under 5*

Multiple malnutrition (MM), poverty, morbidity and mortality

Clear relationship between poverty and pattern of malnutrition (Children U5 yrs, India NFHS, 2005 data)



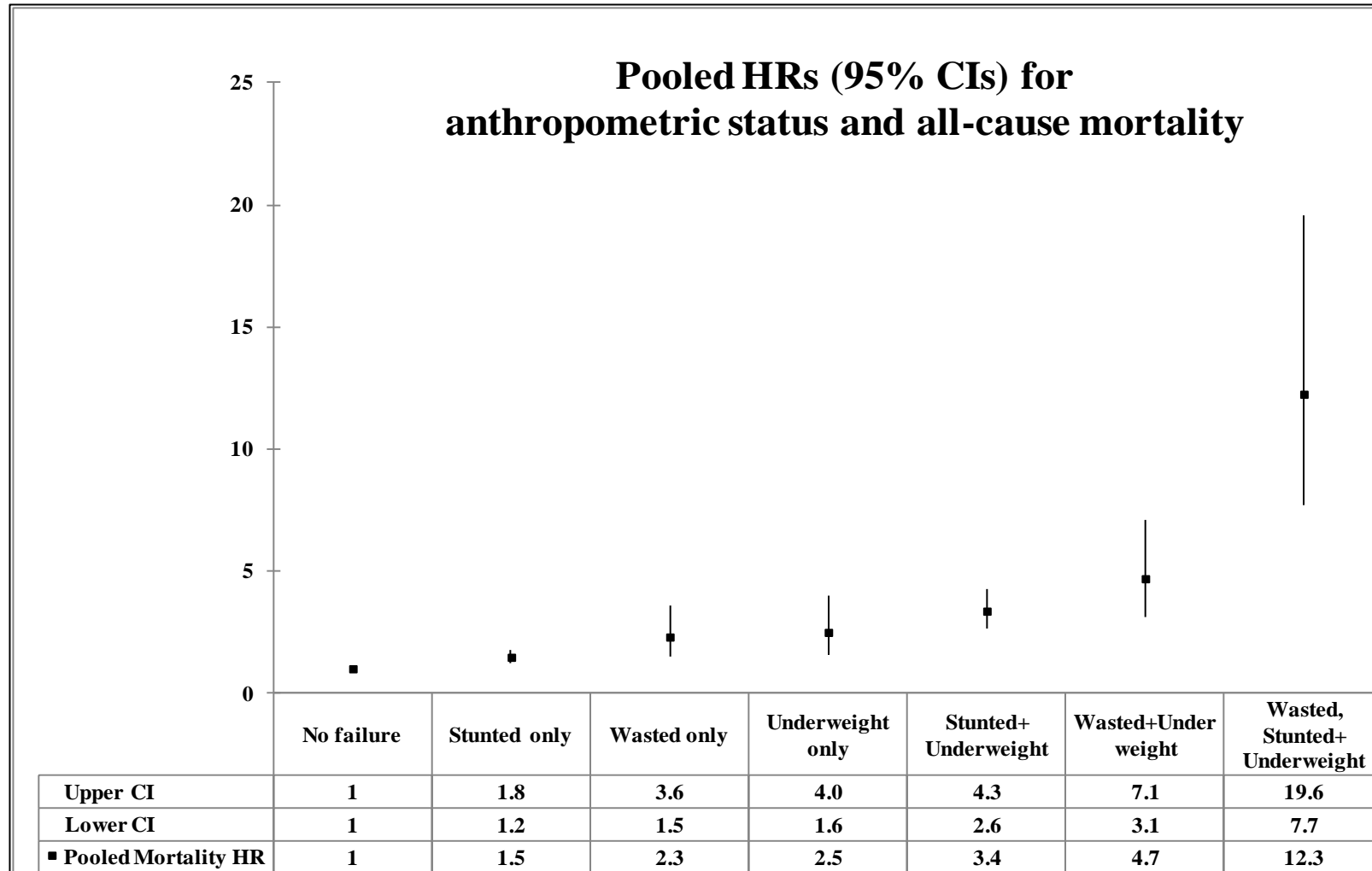
**Multiple Malnutrition and Morbidity [Odds of having dysentery],
Indian children 0-5 yrs**

	B	Standard error	Sig.	Odds Ratio [Exp (B)]	95% C.I.	
					Lower	Upper
A - No Failure (Referent)			.003			
D-Wasted, Stunted & Underweight	.575	.169	.001	1.8	1.3	2.5
E-Stunted & Underweight	.492	.127	.000	1.6	1.3	2.1
Y-Underweight Only	.398	.317	.211	1.5	0.8	2.8
C-Wasted & Underweight	.336	.203	.099	1.4	0.9	2.1
F-Stunted Only	.319	.155	.040	1.4	1.0	1.9
B-Wasted Only	.066	.278	.811	1.1	0.6	1.8
Constant	-4.952	.091	0.000	0.0		

Source: NFHS-3 data (2005/06)

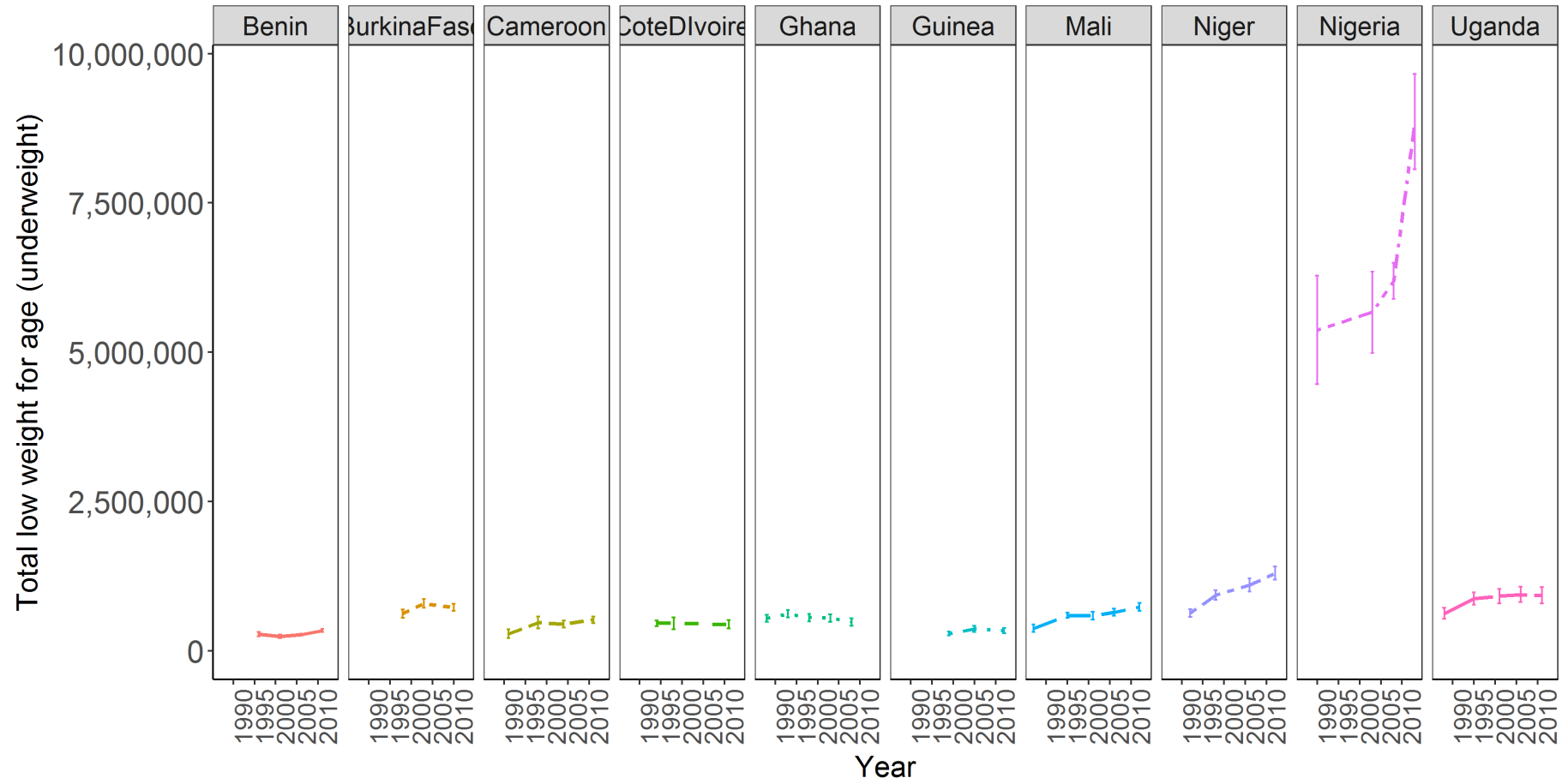
Multiple Malnutrition and Mortality

McDonald et al. (2013) show experience of multiple anthropometric deficits has a raised mortality risk, up to 12x for triple failure (compared to no failure).

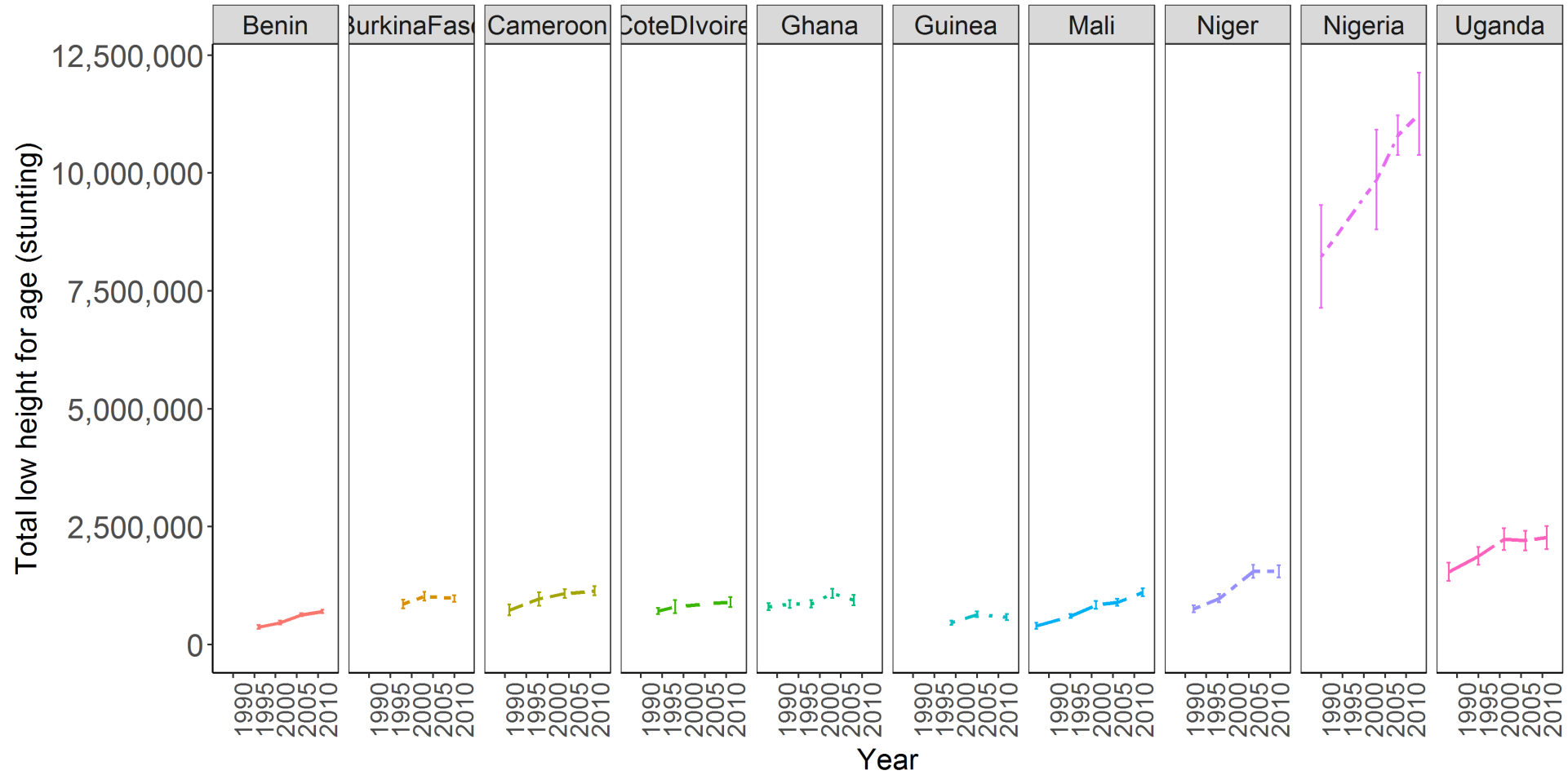


Source: McDonald, C.M., et al. (2013), *The effect of multiple anthropometric deficits on child mortality: meta-analysis of individual data in 10 prospective studies from developing countries. American Journal of Clinical Nutrition, 97(4): p. 896-901.*

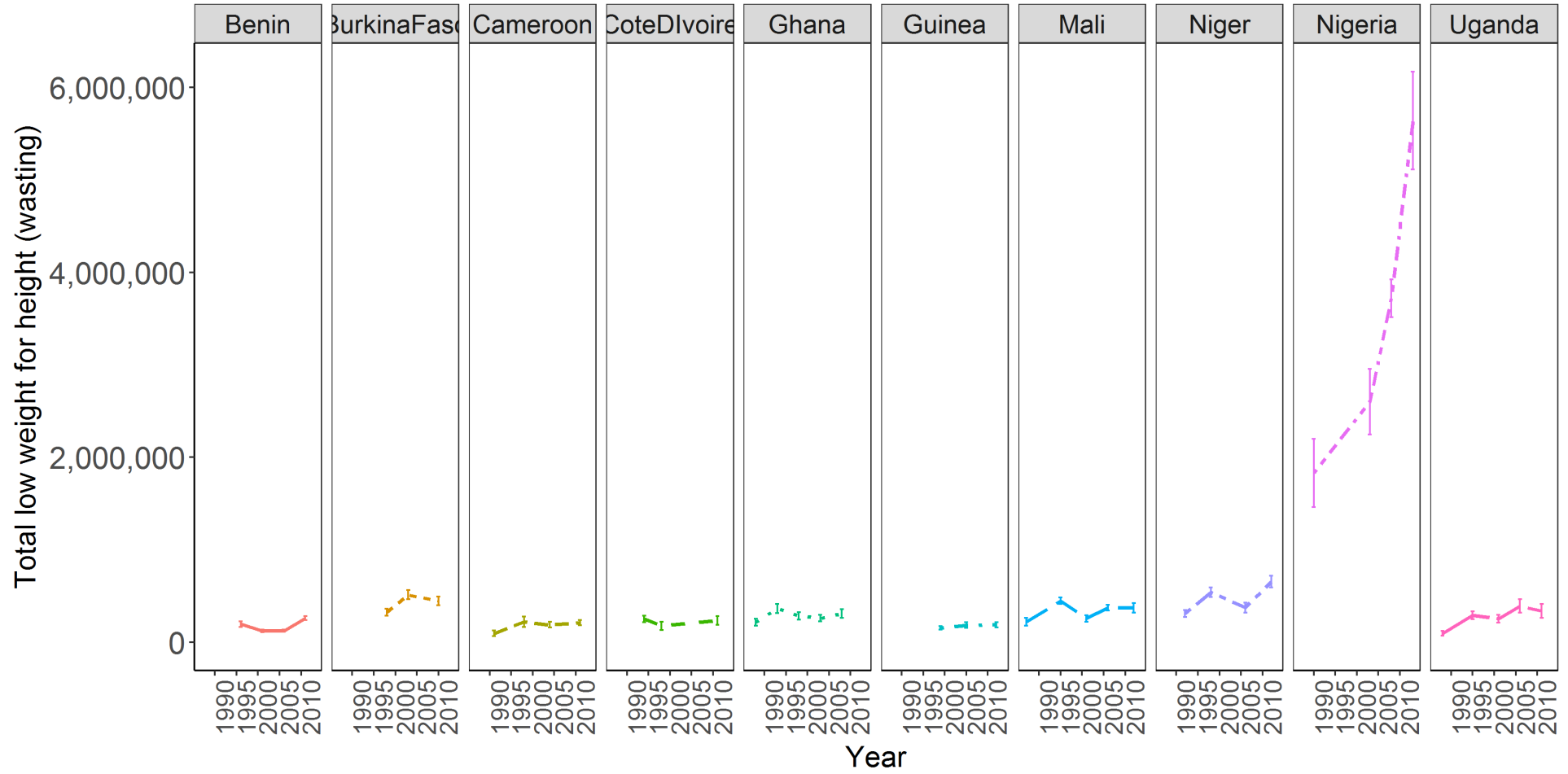
Underweight trends



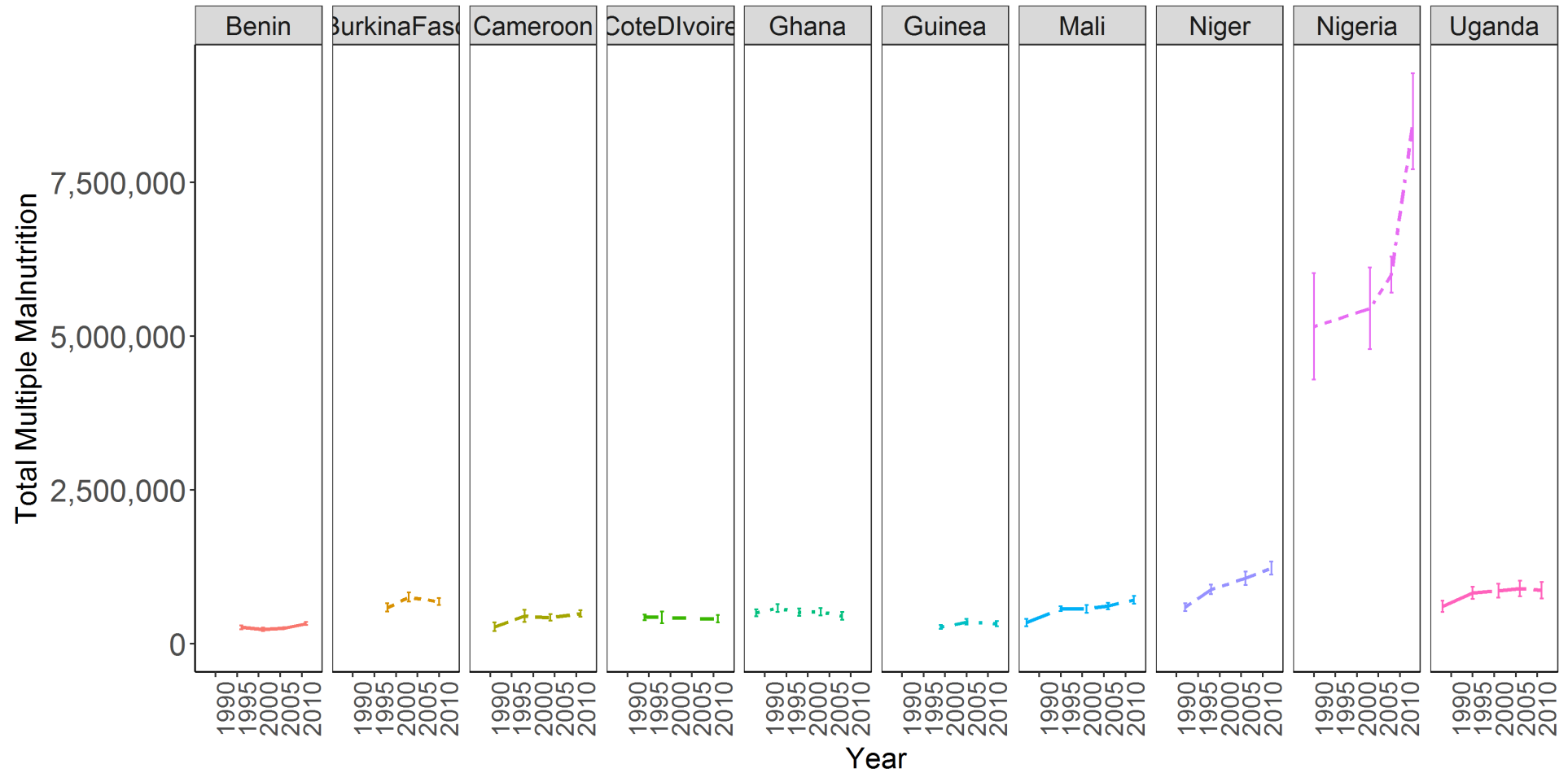
Stunting trends



Wasting trends

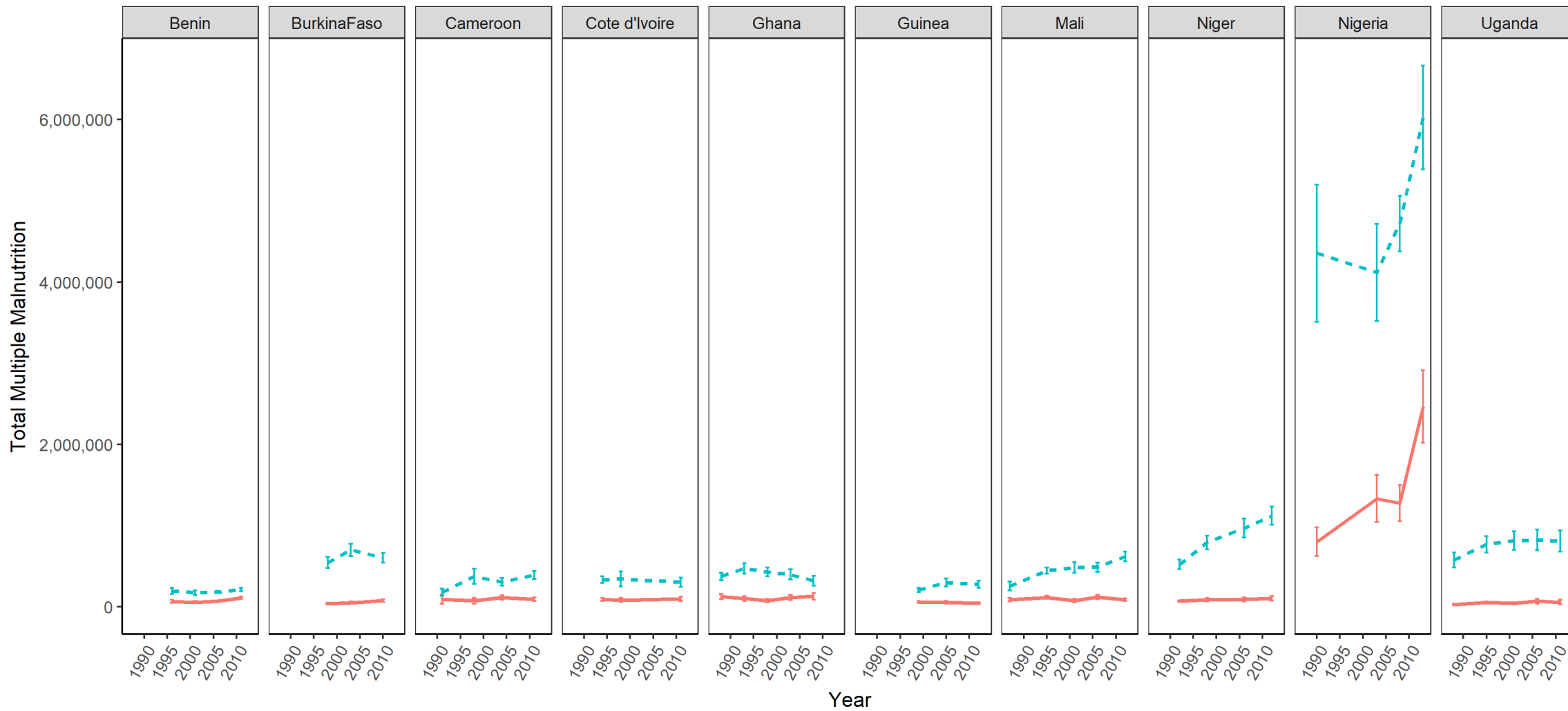


Multiple Malnutrition trends



Place of residence

Urban Rural



What's the Picture for Uganda?

UNICEF Uganda's 2015 *Situational Analysis of Children in Uganda* makes explicit that nutrition is on the policy agenda...

- UNCRC Arts. 4, 6, 27
- African Charter on the Rights and Welfare of the Child
- Uganda Constitution
- Uganda Children Act ...

“Any member of the community who has evidence that a child’s rights are being infringed, or thatany person having custody of a child is able to but refuses or neglects to provide the child with adequate food, shelter, clothing, medical care or education shall report the matter to the local government council of the area”

- Uganda Nutrition Action Plan (2011-16)- *reduce malnutrition, focus public resources and national efforts to bring about improvements in nutrition among young children*

Uganda's story...1988-2011 Prevalence (%) and Number of children U5

	1988	1995	2001	2006	2011
Low Weight for Age (Underweight)	19	21	18	16	14
Low height for age (Stunting)	48	45	45	37	34
Low Weight for height (Wasting)	3	7	5	7	5
CIAF	50	50	48	42	38
Multiple Malnutrition	19	20	17	15	13
	1988	1995	2001	2006	2011
Low Weight for Age (Underweight)	626,059	872,566	913,696	940,095	927,487
Low height for age (Stunting)	1,542,032	1,876,990	2,232,793	2,200,892	2,265,372
Low Weight for height (Wasting)	94,027	290,268	253,313	389,448	337,817
CIAF	1,602,796	2,067,916	2,412,329	2,499,207	2,571,284
Multiple Malnutrition	603,933	824,752	859,743	892,975	865,185
<i>Number of children missed by Stunting measure</i>	<i>60,764</i>	<i>190,926</i>	<i>179,535</i>	<i>298,315</i>	<i>305,912</i>
<i>Number of children missed by Underweight measure</i>	<i>976,737</i>	<i>1,195,351</i>	<i>1,498,632</i>	<i>1,559,112</i>	<i>1,643,798</i>

CIAF Disaggregated data, Uganda, Number of children U5

Type	1988	1995	2001	2006	2011
A - No Failure	1,613,640	2,087,379	2,578,532	3,392,126	4,190,554
B-Wasted Only	15,801	50,120	48,261	118,587	125,436
C-Wasted & Underweight	22,837	92,993	77,320	132,609	118,174
D-Wasted, Stunted & Underweight	55,389	147,155	127,731	138,253	94,207
E-Stunted & Underweight	525,707	584,604	654,692	622,114	652,804
F-Stunted Only	960,936	1,145,231	1,450,371	1,440,525	1,518,362
Y-Underweight Only	22,126	47,813	53,954	47,120	62,302

Supplementing poverty data

Uganda NHS2016-2017

- 96% respondents report '3 meals a day for children' as being 'essential'
- Average number of meals taken by household members per day in the last 7 days:
One=6%, Two=48%, Three=45%

But...

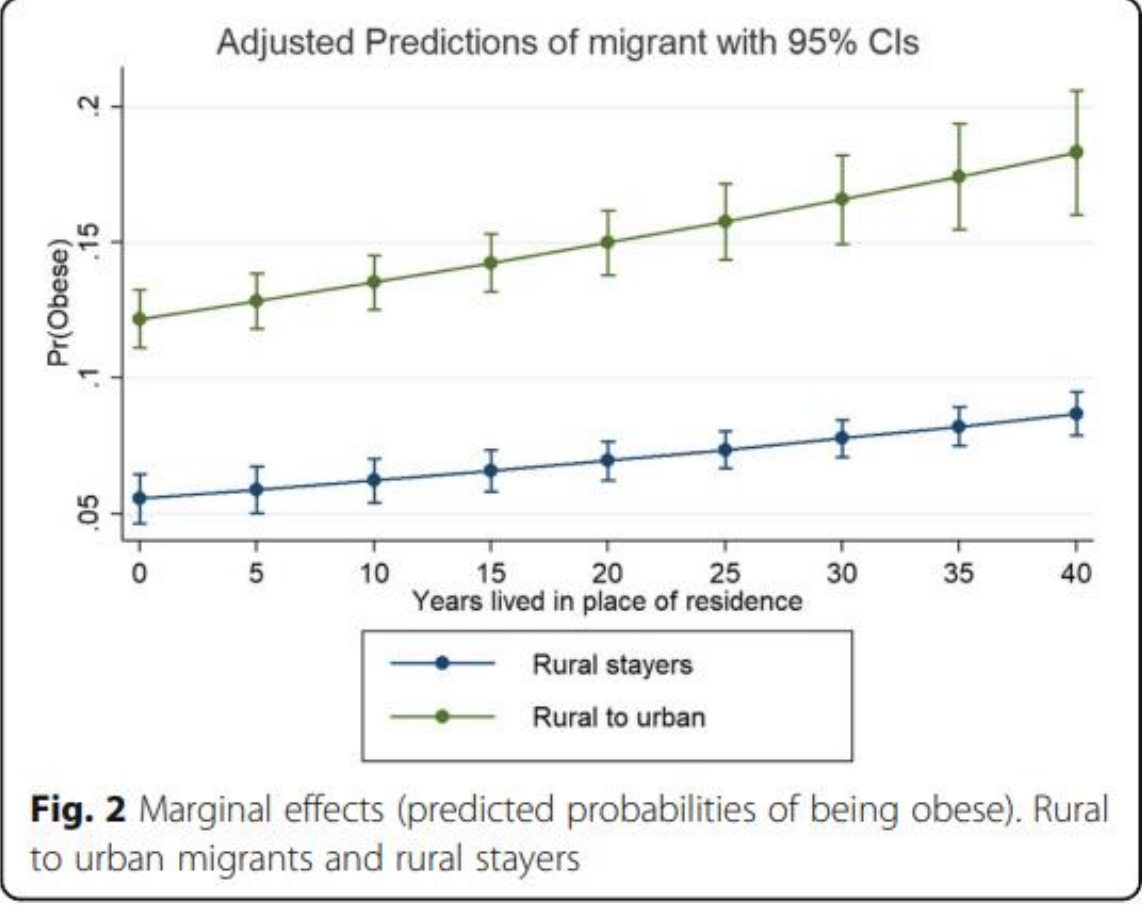
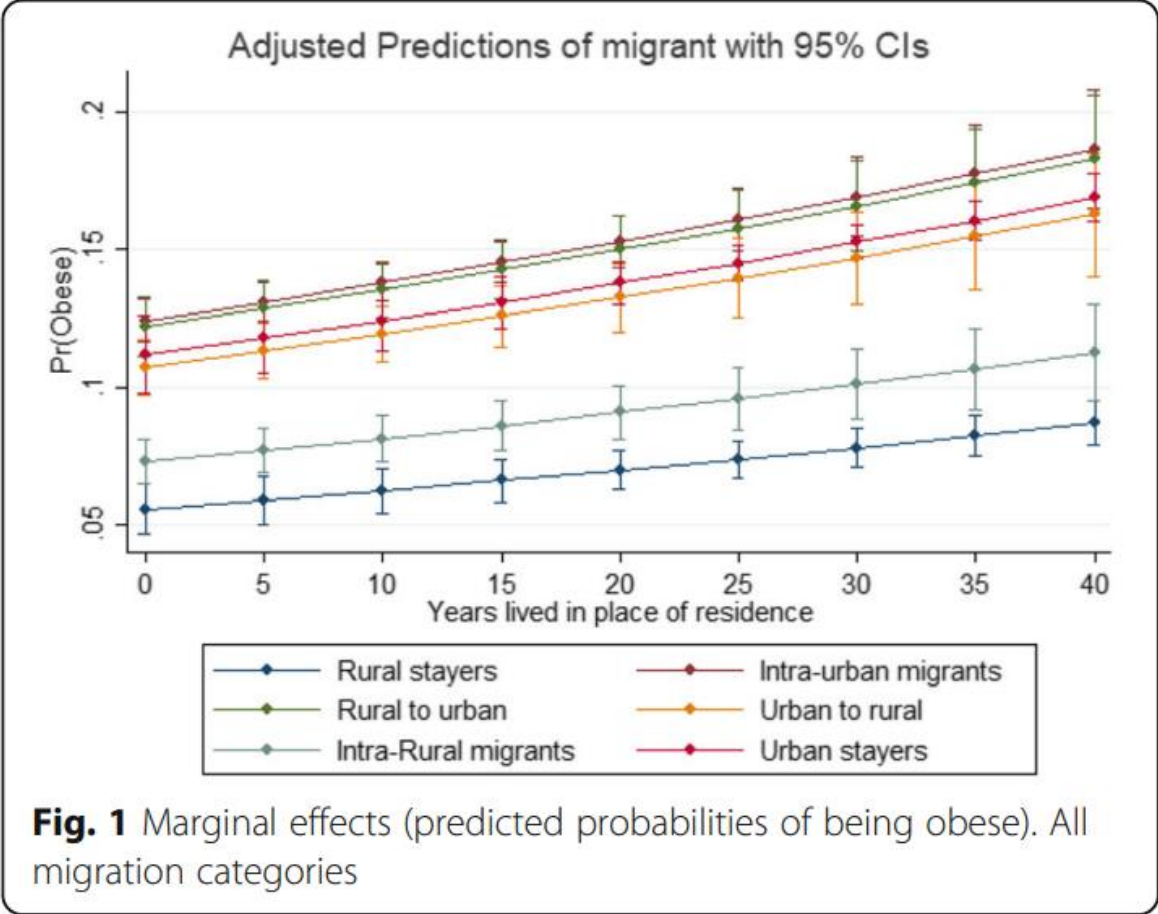
- 48% children (10.3 million U18) lacked 3 meals a day because they could not afford them.
 - 30% of urban children, 53% of rural children

REGION	Three meals a day Don't have, can't afford
Karamoja	86%
Acholi	70%
Bukedi	64%
Teso	60%
Lango	59%
Busoga	52%
Bugishu	51%
Ankole	49%
West Nile	48%
Kigezi	41%
Central2	40%
Bunyoro	35%
Tooro	34%
Central1	32%
Kampala	30%
Uganda	48%

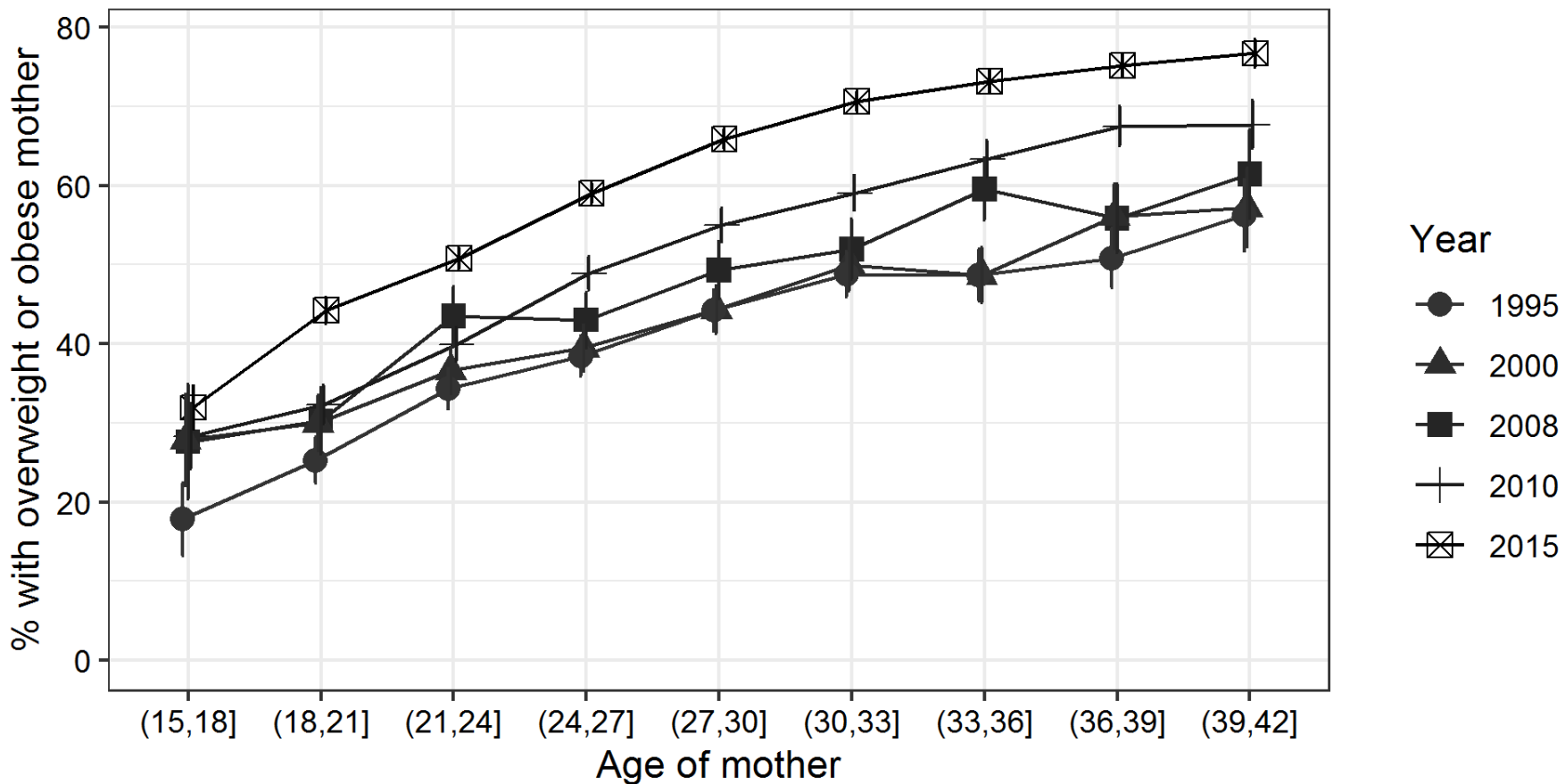
Nutrition Dynamics and the Double Burden

Migration and Obesity, Peru

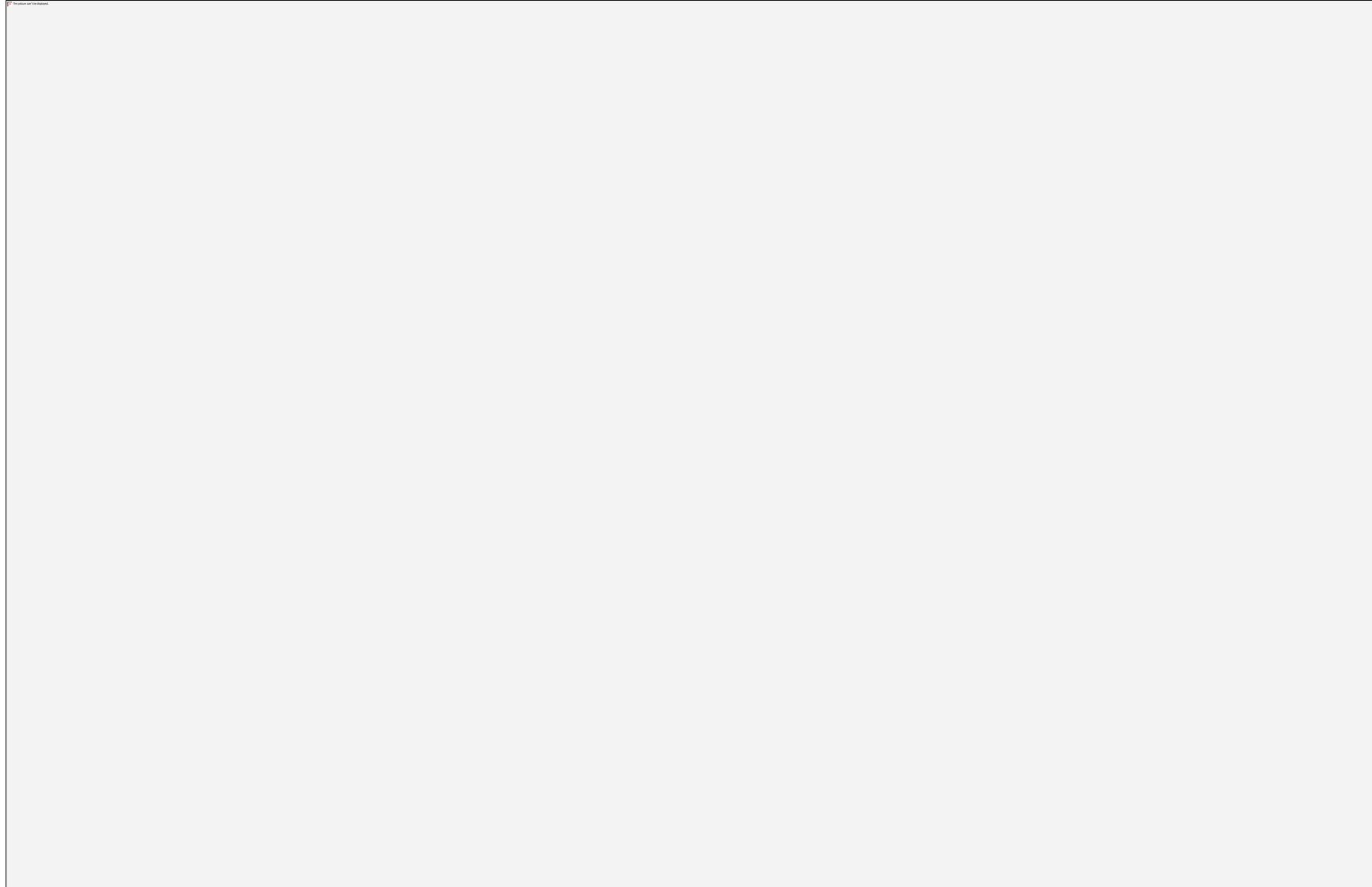
Assessing the rate of increase in obesity among Peruvian women, aged 15-49. (DHS data)



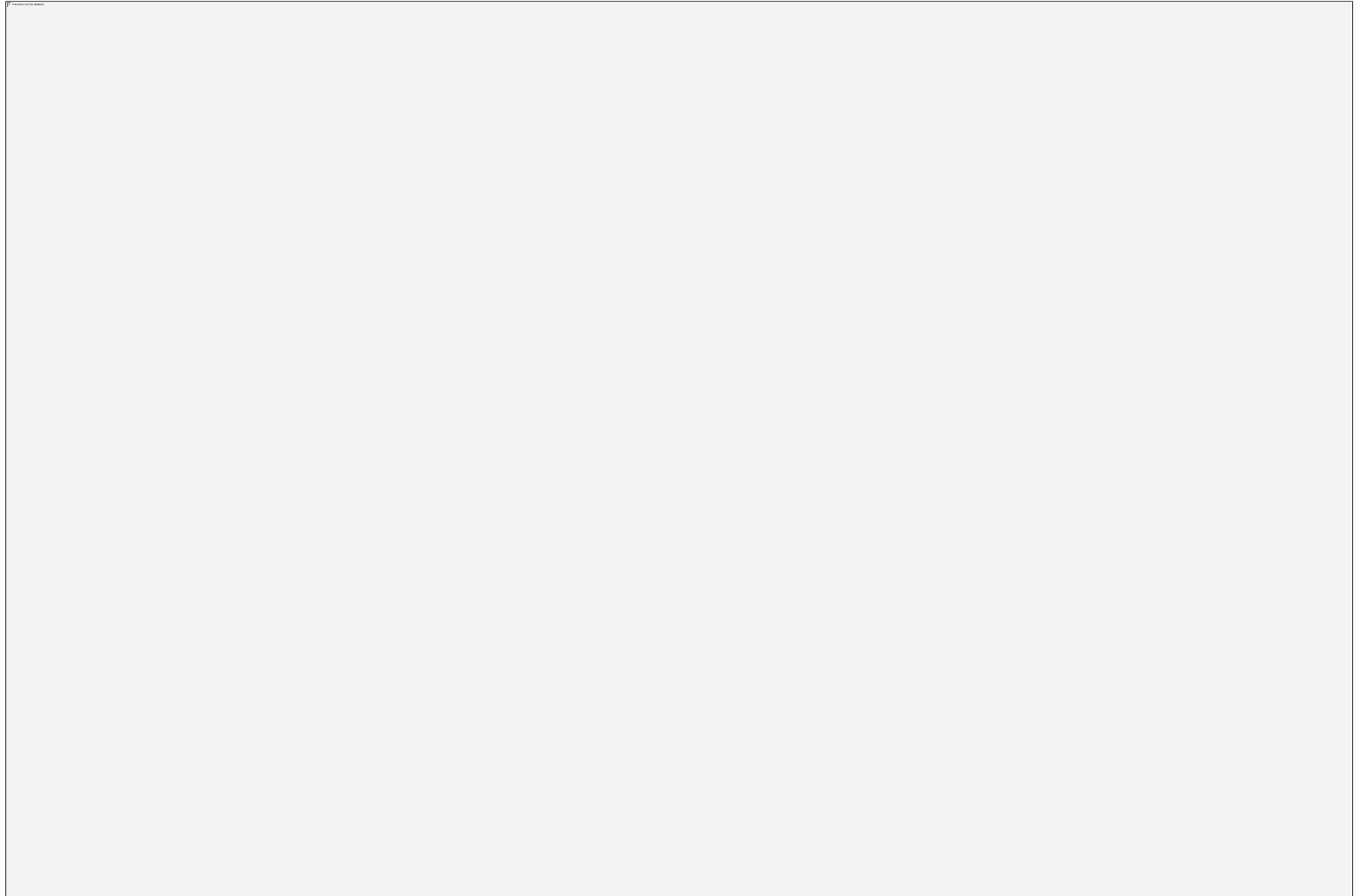
Percentage of children with overweight or obese mothers by age of mother



Flowchart showing the relationship between child and mother's nutritional status (pooled data from 2014, 2015 and 2016)



Percentage of children by anthropometric status and nutritional status of their mother, by rurality and wealth index (1996-2015, Peru)



Conclusions

- Food/nutrition elements have long been a part of poverty measures, initially to justify restrictive thresholds but increasingly because of a wider view of wellbeing and what we want to reflect.
- Examining nutrition dynamics (with the indicators discussed) provides a useful lens with which to assess poverty.
- Ongoing need for better measures (and data) on nutritional outcomes for older children. Growing issue of child obesity and non-communicable disease, esp. in Latin America, Asia, north/southern Africa.
- FAO reports the world is not on track to meet hunger related targets by 2030 – and Covid 19 disruptions + Climate Change + Insecurity make success unlikely.