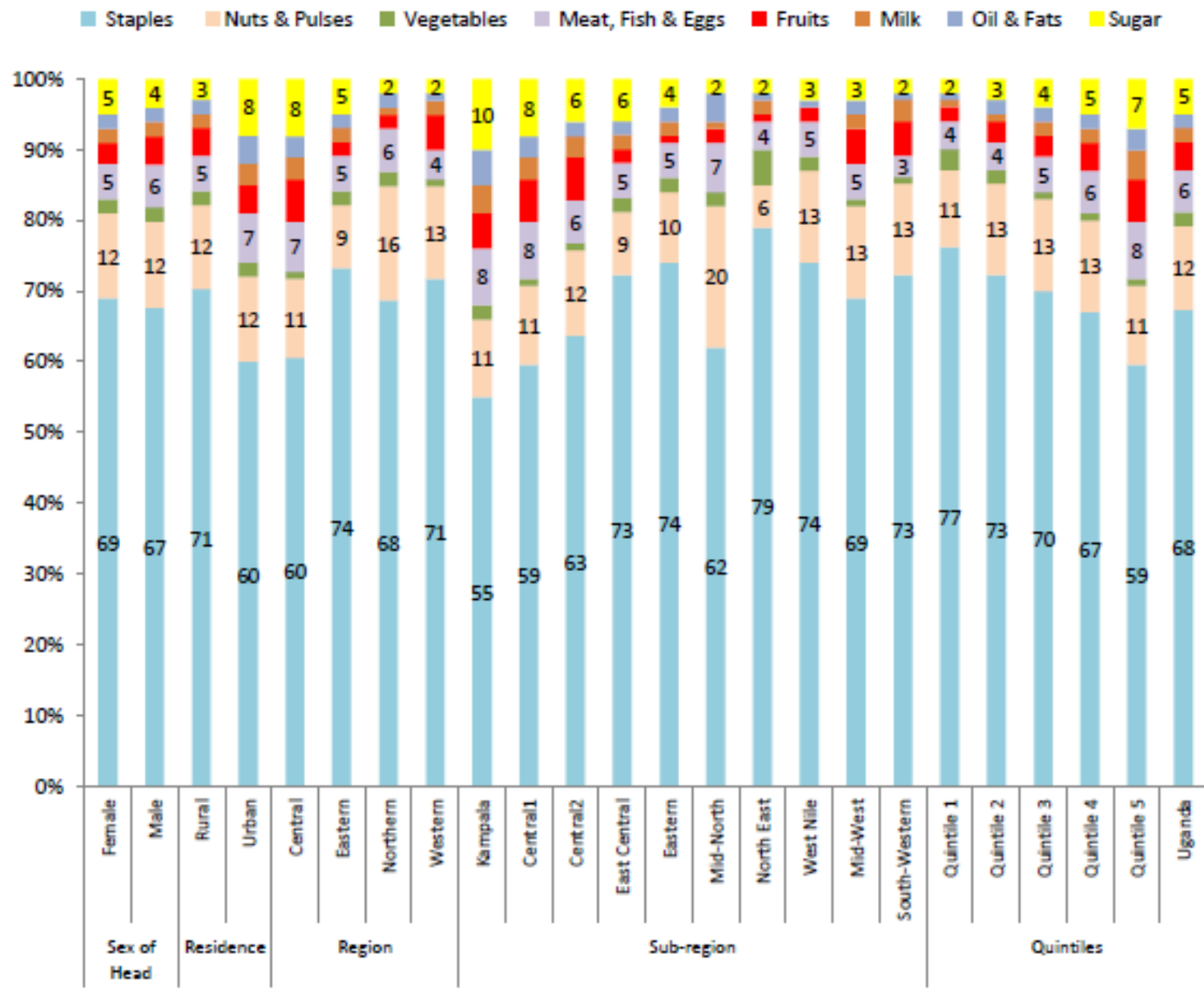




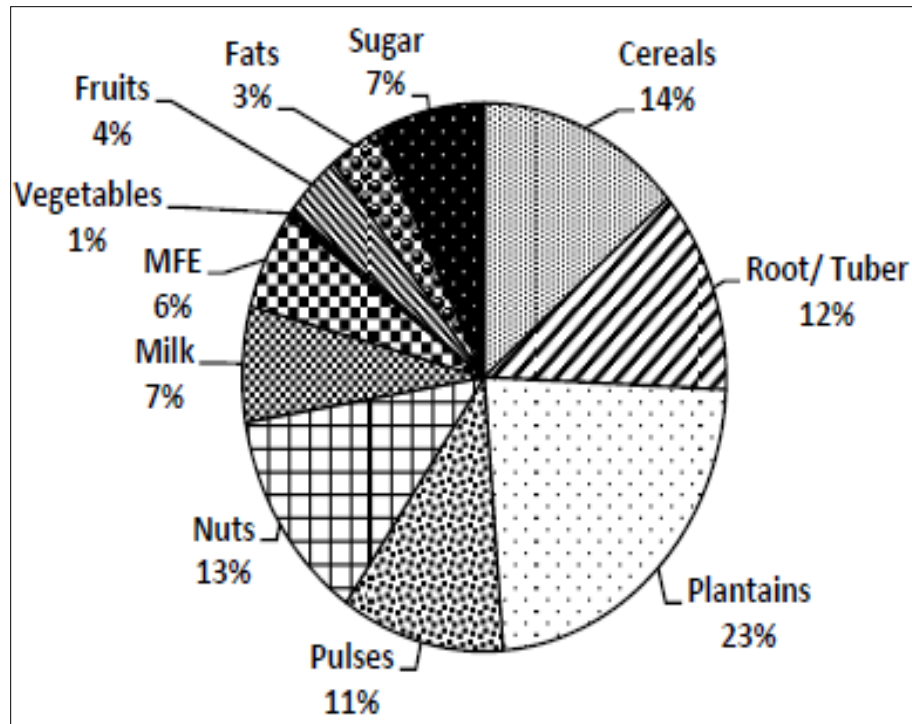
## FOOD FORTIFICATION IN UGANDA

# Food Consumption patterns by averages

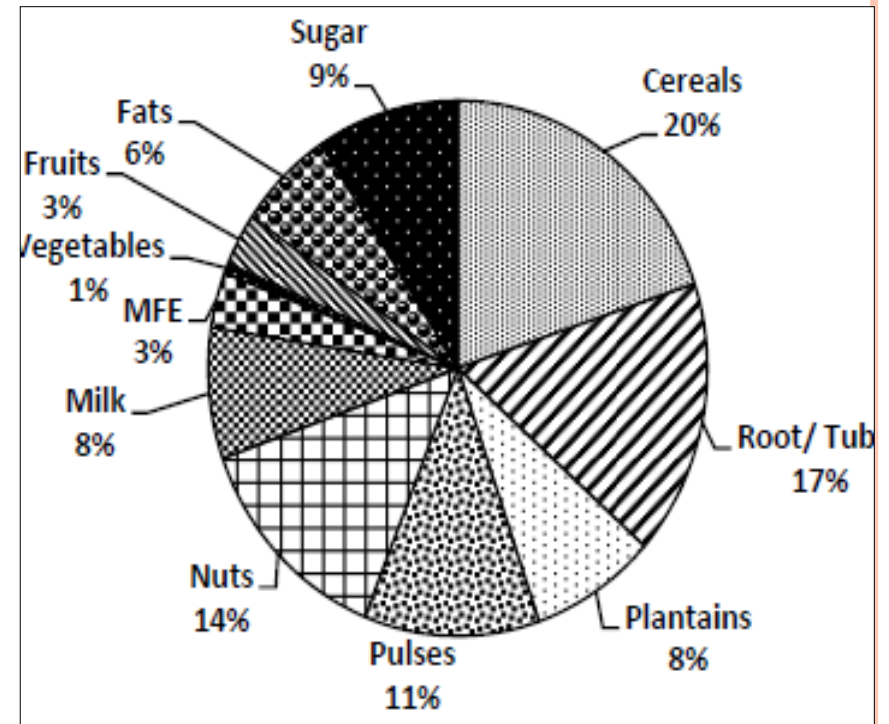


# FOOD CONSUMPTION AVERAGES BY REGION:

## Kampala



## South Western Uganda



# TOTAL FLOUR CONSUMED AND FOODS PRODUCTS CONTAINING THE FLOURS

Type of flour and products	Kampala		South-West		North	
	Median	Mean (SD)	Median	Mean (SD)	Median	Mean (SD)
Total wheat flour equivalent consumption*	n=198		n=24		n=12	
	58.3	63.6 (43.3)	35.3	52.5 (40.0)	35.6	41.9 (26.9)
Total maize flour equivalent consumption*	n=134		n=61		n=55	
	116	125 (87.4)	78.6	84.9 (48.7)	147	178 (129)
Total rice consumption	n=102		n=26		n=6	
	90.2	115 (80.7)	116	132 (108)	121	120 (19.5)
Total maize grain consumption	n=86		n=110		n=143	
	106	126 (91.7)	201	289 (262)	191	237 (164)
Total sorghum consumption	n=2		n=7		n=182	
	17.4	17.4 (18.4)	10.8	20.9 (16.1)	165	202 (161)
Total millet consumption	n=0		n=2		n=1	
			16.09	16.09 (16.29)	59.13	59.13 (0.00)

# CONSEQUENCES OF HIGH RATES OF MALNUTRITION IN UGANDA

- **Malnutrition significantly reduces agricultural productivity.**
  - The agriculture sector, lost more than US\$34 million worth of productivity in 2009 due to iron-deficiency & anaemia in the adult population.
  - Other losses to agriculture occurred as a result of time lost due to illnesses associated with other types of malnutrition.



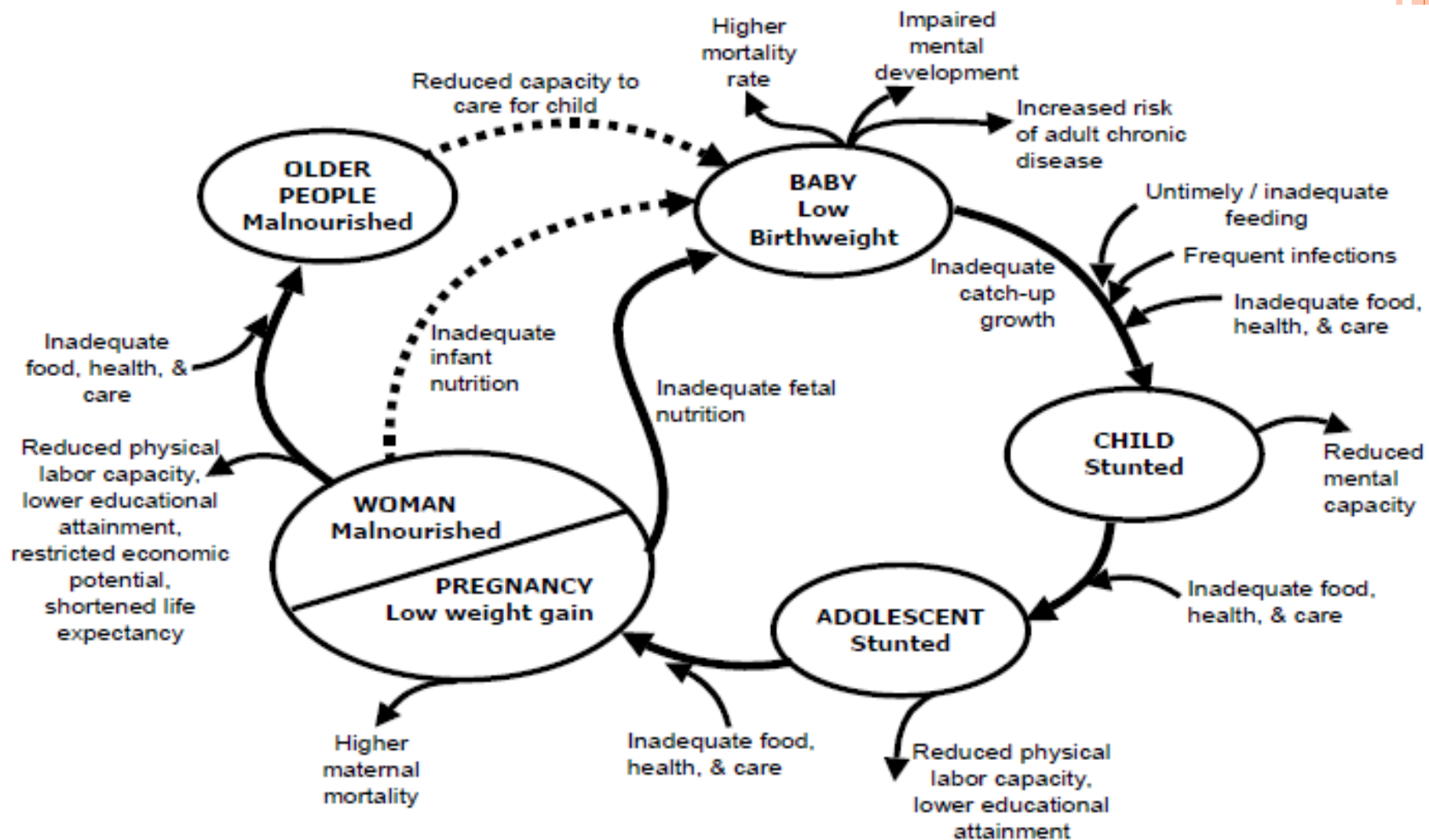
# CONSEQUENCES OF HIGH RATES OF MALNUTRITION IN UGANDA

## ○ **Malnutrition kills**

- More than 16,000 children who were born weighing less than 2.5 kg (Low birth weight) died in 2009.
- Other forms of malnutrition were associated with more than 67,500 child deaths in 2009.

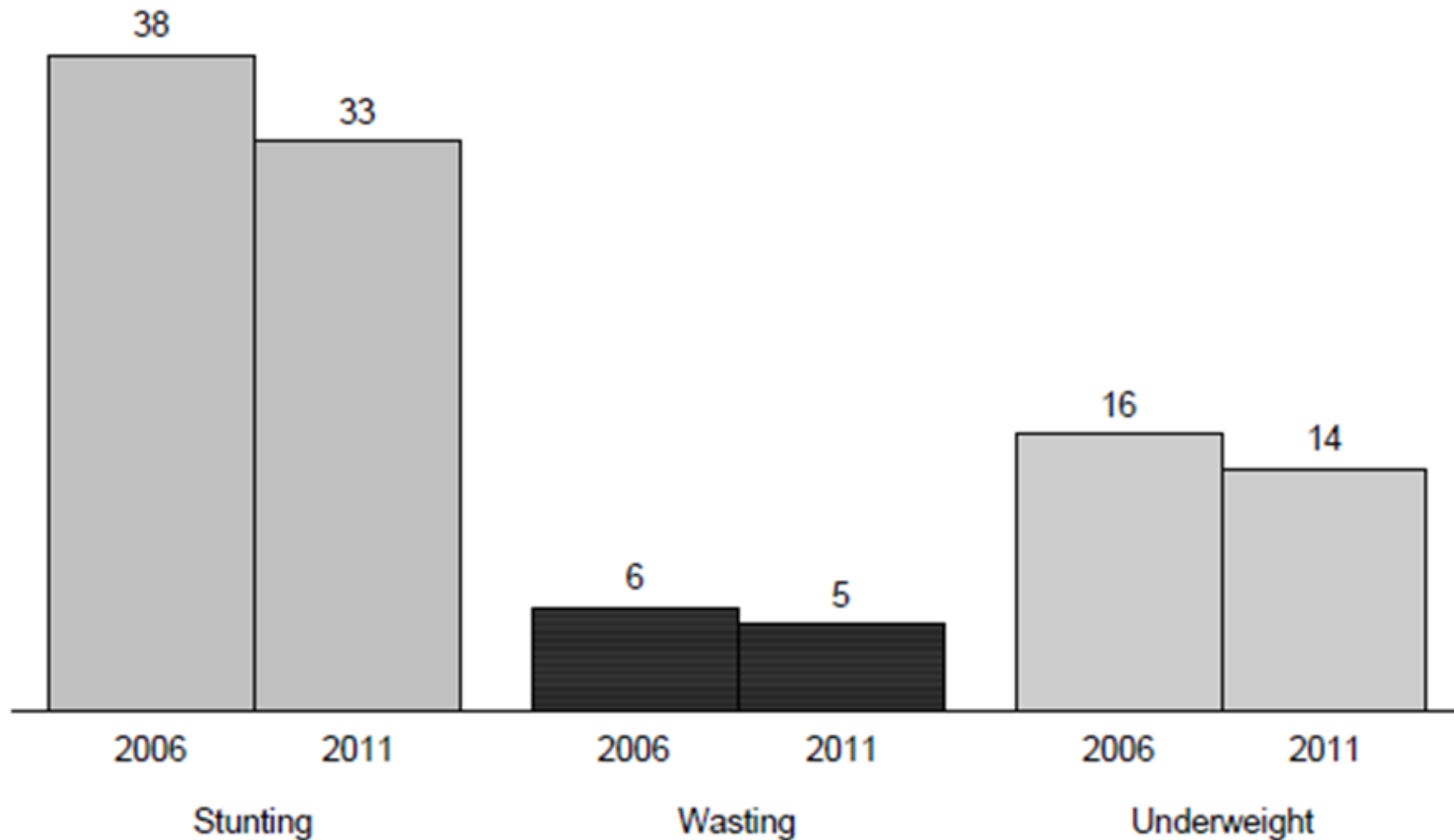






## Cycle of micronutrient deficiency consequences

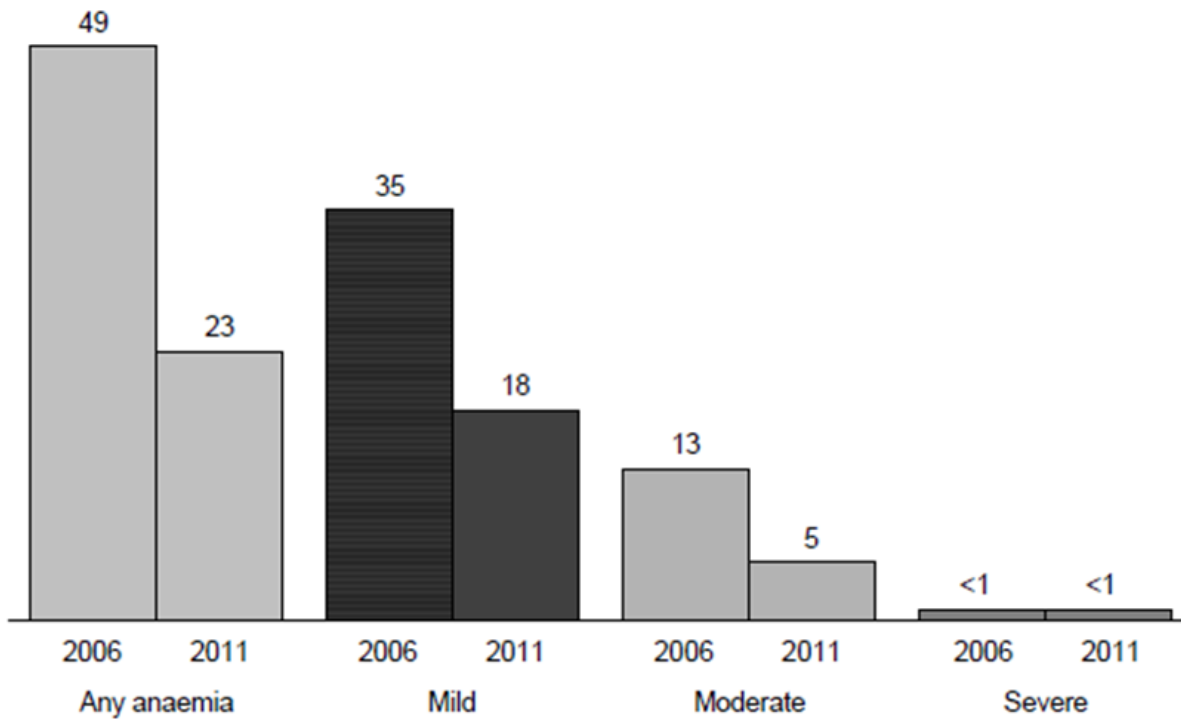
**Figure 11.2 Trends in nutritional status of children under 5 years**



low weight-for-height (wasting), low height-for-age (stunting) low weight for age (underweight) Source: UDHS 2011



**Figure 11.8 Trends in anaemia status among women age 15-49 years**



# OVERVIEW ON NATIONAL FOOD INTERVENTION PROGRAMMES

- Universal Vitamin A supplementation
- Fe/Folic acid supplementation
- Food fortification
- Food/diet diversification
- Nutrition education
- Behaviour change communication
- Bio fortification (trials done for vitamin A in sweet potatoes and cassava, iron in beans)



# PERFORMANCE OF THE PROGRAMMES: FORTIFICATION

- 1994: The Universal Salt Iodization programme
- 2000: Expanded to include commonly consumed foods
- 2004: Launch of voluntary fortification
- 2011: Legislation passed for mandatory fortification
- 2013: Enforcement of mandatory regulations

## **Compliance:**

8 of 10 wheat millers are fortifying, 3 of 5 maize millers are fortifying, 5 of 5 oil producers are fortifying

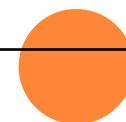


# OVERVIEW ON NATIONAL FOOD INTERVENTION PROGRAMMES

Fortified Food/Micronutrient	Addition at Factory <sup>5</sup> (mg/100 g)	Estimated Losses (%) <sup>1</sup>	Level in Household (mg/100 g)
<b>Vegetable Oil</b>			
Vitamin A	3.5	30	2.5
<b>Sugar</b>			
Vitamin A	1.0	30	0.7
<b>Wheat Flour</b>			
Vitamin A	0.3	20	0.24
Vitamin B-1	1.3	30	0.91
Vitamin B-2	0.7	15	0.60
Niacin	9.0	15	7.7
Vitamin B-6	0.7	15	0.6
Folic Acid*	0.3	15	0.43
Vitamin B-12	0.0015	15	0.0013
Iron (as ferrous fumarate)	4.0	0	4.0
Zinc	5.0	0	5.0
<b>Maize Flour</b>			
Vitamin A	0.1	20	0.08
Vitamin B-1	0.5	30	0.35
Vitamin B-2	0.4	15	0.34
Niacin	4.0	15	3.4
Vitamin B-6	0.0	0	0.0
Folic Acid*	0.1	15	0.14
Vitamin B-12	0.0005	15	0.0004
Iron (as NaFeEDTA)**	1.5	0	3.0
Zinc	4.0	0	4.0

# KEY NUTRITION OUTCOME INDICATORS

<b>Indicators</b>	<b>Baseline* (%) UDHS 2006/FAO 2008</b>	<b>UDHS 2011 (%)</b>	<b>UNAP target 2016 (%)</b>
Iron-deficiency anemia: prevalence in under-5s	73	49	50
Iron-deficiency anemia: prevalence in women 15–49 years old	43	23	30
Vitamin A deficiency: prevalence in under-5s	19	38	13
Vitamin A deficiency: prevalence in women 15–49 years old	20	36	12



# GLOBAL TARGETS 2025

To improve maternal, infant and young child nutrition



# GLOBAL TARGETS<sup>2025</sup>

To improve maternal, infant and young child nutrition



4 NO INCREASE IN CHILDHOOD OVERWEIGHT



5 INCREASE THE RATE OF EXCLUSIVE BREASTFEEDING IN THE FIRST 6 MONTHS UP TO AT LEAST 50%



6 REDUCE AND MAINTAIN CHILDHOOD WASTING TO LESS THAN 5%





## SUPPORTIVE POLICIES IN PLACE

- The National Health Policy
- The Health Sector Strategic Plan (HSSP)
- The Food and Nutrition Policy
- The Uganda Nutrition Action Plan (UNAP)
- Food fortification communication strategy



## FOLLOW-UP OR GOAL

- Design, set up and implement a sustainable M&E system for food fortification
- Assign responsibilities
- Address challenges to fortification



# CHALLENGES & CONSTRAINTS

## ○ Challenges

- Weak market surveillance
- Limited capacity of both regulatory bodies and producers
- Inconsistency in the labeling of fortified foods
- Inadequate monitoring of premix at importation
- There is still lack of consumer awareness on benefits of fortified foods
- Poor purchasing power because of poverty
- Poor enforcement of regulations and standards

## ○ Constraints

- Maize flour – still voluntary as many millers do not make up 20MT/Day.
- Variation in food consumption patterns regarding intake of fortified foods
- Large number of small scale millers



Thank you

