

IMPROVING THE NUTRITION OF THE NIGERIAN CHILD THROUGH DIETARY MODIFICATIONS



Professor Adenike Addo
Department of Nutrition and Dietetics,
University of Agriculture, Abeokuta
Ogun State, Nigeria.



INTRODUCTION

- Who is a child?
- Population of Nigerian children
- National and International agreements on the right of the child.
- Hunger, protein energy malnutrition and micronutrient deficiency constitutes denial of the rights of the children
- Socio economic cost of malnutrition



Objectives of the paper

- a. To examine the state of global child nutrition
- b. To examine the nutrition and food consumption of the Nigerian child
- c. To identify the causes of malnutrition
- d. To appraise the role of change agents in improving child nutrition
- e. To propose dietary modifications for improved child nutrition
- f. To project the importance of dairy foods in the diet of children



State of world child nutrition

- Under nutrition in children is a global phenomenon which is characterized by wasting, stunting and underweight. The high level of stunting in developing countries indicate chronic hunger.
- **Table one**



Table 1: national wasting, stunting and underweight in pre-school children 0-5 yrs

Country	Year of survey	Wasting %	Stunting	Underweight
Ghana	1998-99	9.5	25.9	24.9
Iraq	2000	5.9	22.1	15.9
Kenya	1998	6.1	33.0	22.1
Mauritania	2000-2001	12.8	34.5	31.8
Netherlands	1980	0.7	0.8	0.7
Niger	2000	13.6	39.7	40.1
Nigeria	1999	15.6	33.5	30.7
Nigeria	2001-2003	9.0	42.0	25.0
Peru	2000	0.9	25.4	7.1
Togo	1998	12.3	21.7	25.1



State of world child nutrition

- A shift in level of global malnutrition has been reported in the last decade. Africa rather than Asia now has more underweight preschoolers
- Micronutrient deficiencies in vitamin A, iodine and iron also exist globally.
- Table 2
- Table 3
- Figure 1
- The high level of under nutrition in the world demands that human and material resources must be mobilized at all level to solve the problem



Table 2: Global prevalence of pre school child vitamin A deficiency

Table 2: Global prevalence of preschool child vitamin A deficiency

Region	Population <5 years	%	No of cases (X 10 ³)
Africa	103,934	32.1	33,406
Eastern Mediterranean	59818	21.2	12664
South and East Asia	169,009	33.0	55,812
Western Pacific	122,006	14.0	17128
Region of the America	47,575	17.3	8,218
Europe	152	29.5	45

Source: SCN 5th report on the world nutrition situation



Table 3: Prevalence of iodine deficiency in school age children

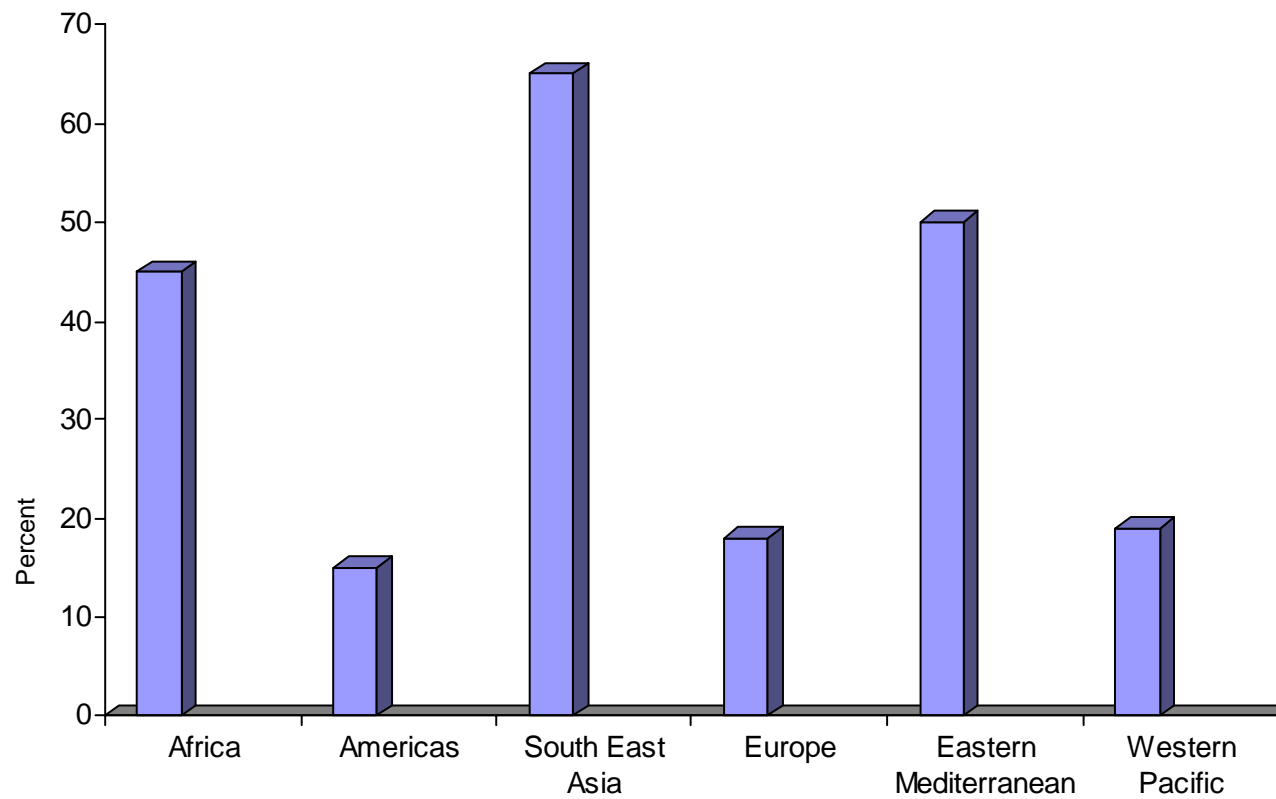
Region	Iodine deficiency (UI < 100 ug/L)			
	General %	Population Total number million	School age children %	Total number millions
Africa	43.0	342.2	42.7	59.7
Asia	35.6	1239.3	38.3	187.0
Europe	52.7	330.8	53.1	26.7
Latin America & Caribbean	10.0	47.4	10.3	7.1
Caribbean	66.2	13.2	69.8	1.7
North America	9.5	27.6	9.5	2.8
Oceania	64.5	19.2	59.4	2.1

Source:SCN 5th report on the world nutrition situation.



Figure 1: Prevalence of anaemia in children 0-5 years by WHO region 1998

Source: Food Consumption and Nutrition Survey 2001 - 2003





Nutrition and food consumption of the Nigerian child

- Protein calorie malnutrition's continues to be the most important problem of under nutrition in the Nigerian child
- Most recent national survey (2001-2003) show that 42% of preschool children were stunted, 25% were underweight and 9% were wasted. (table 1)
- **Figure 2**
- Varying levels of micronutrient deficiencies were also reported.
- Figure 3
- Figure 4

Figure 2: Stunting, wasting and underweight

Source: Food Consumption and Nutrition Survey 2001 - 2003

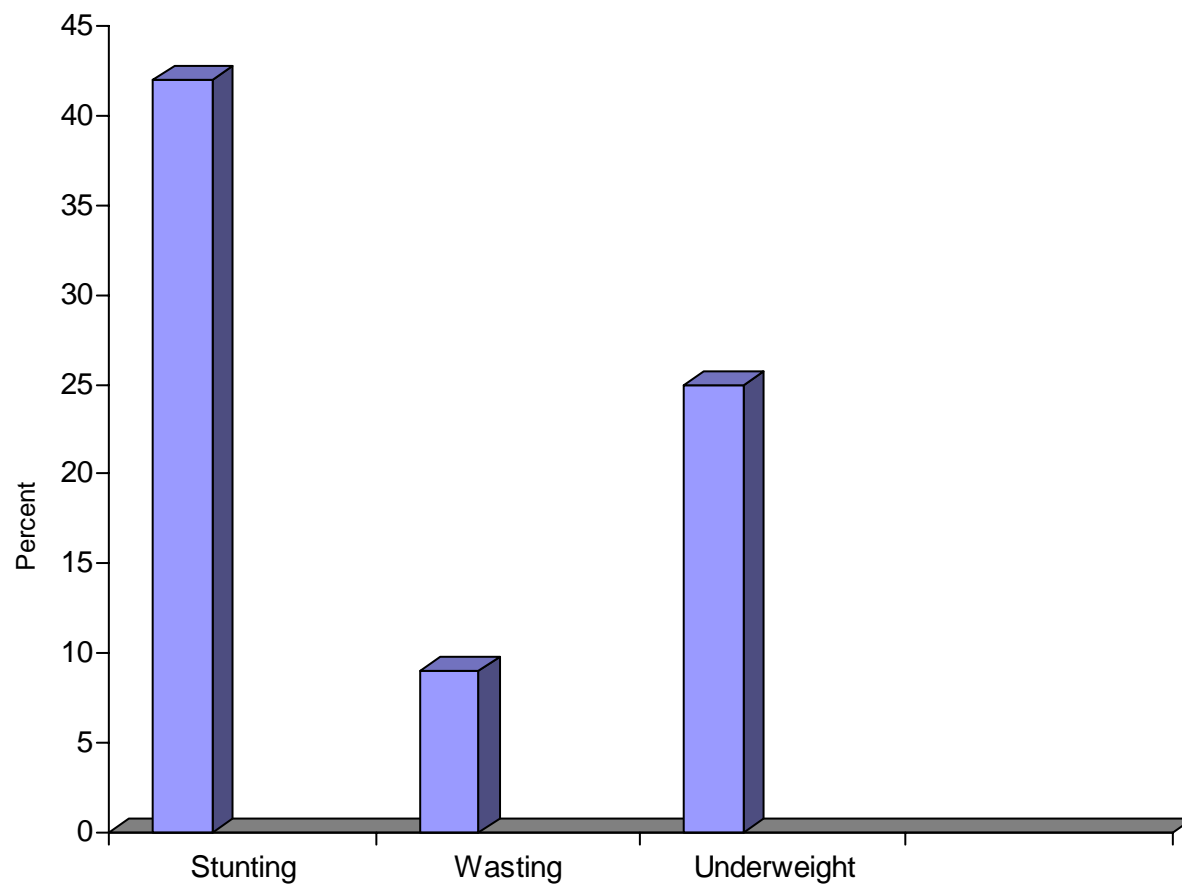




Figure 3: Vitamin A status of all surveyed children under 5

Source: Food Consumption and Nutrition Survey 2001 - 2003

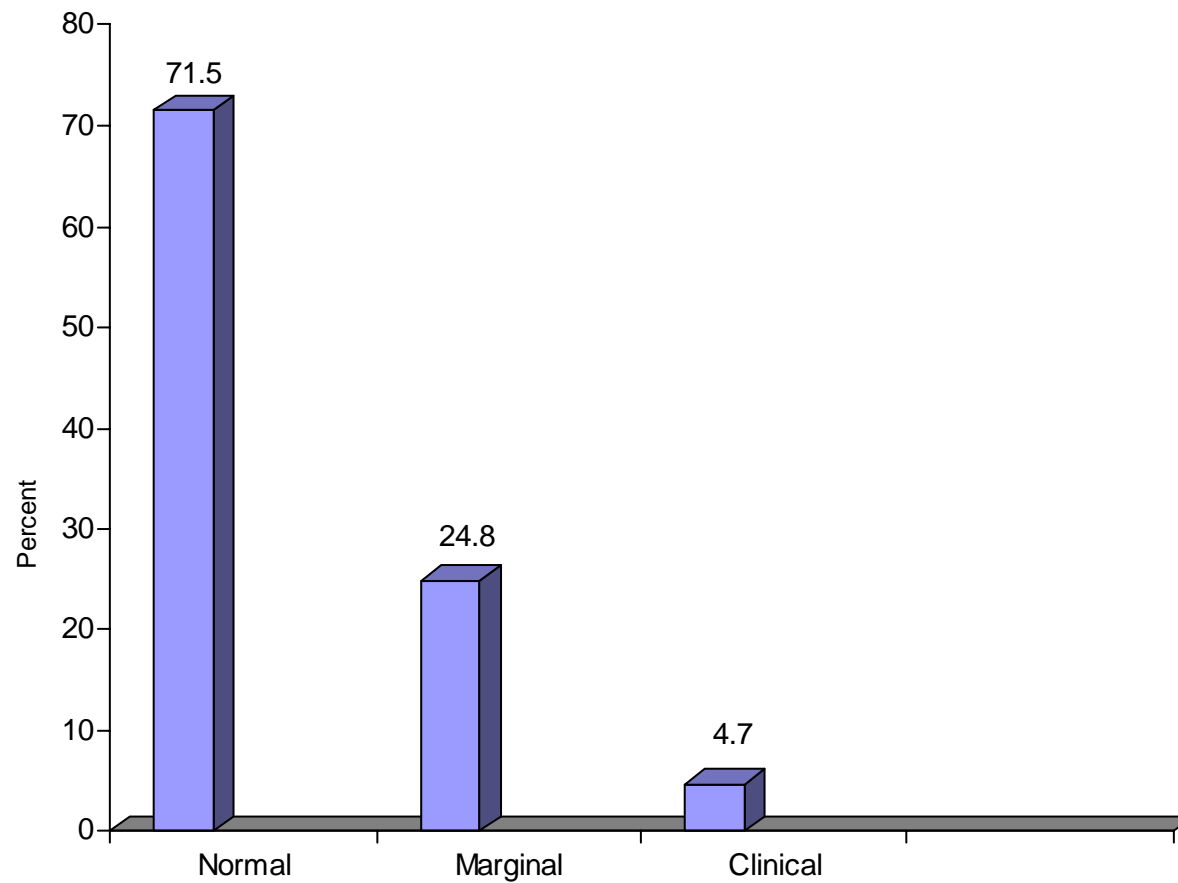
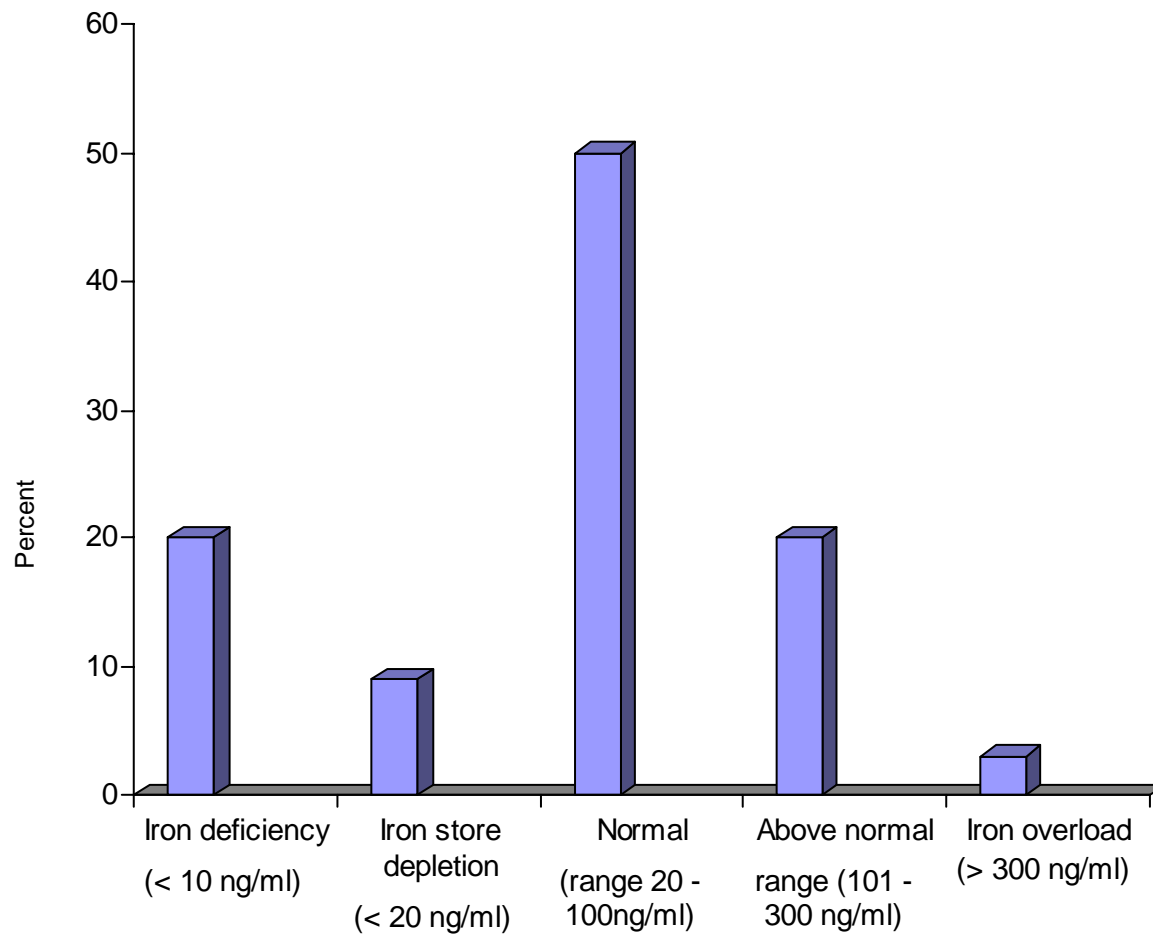


Figure 4: Profile of national iron status in all surveyed kids under 5

Source: Food Consumption and Nutrition Survey 2001 - 2003





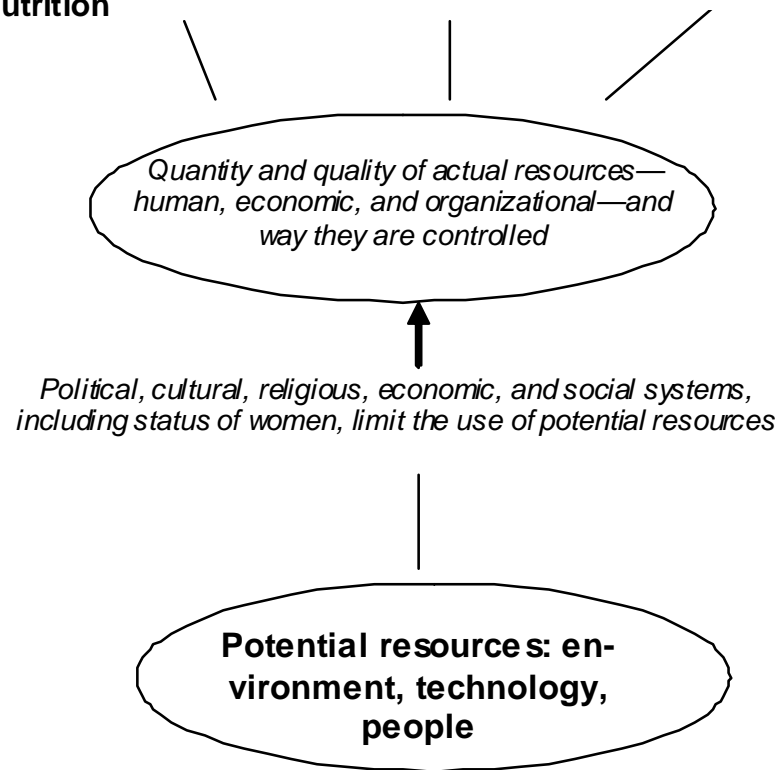
Causes of malnutrition

- Figure 5
- UNICEF framework for causes of malnutrition helps to interpret observations on malnutrition
- The immediate and underlying causes of malnutrition are a reflection of the denial of the rights of the child.
- The 2001-2003 national survey established association between food security, child care and health and nutritional status of pre-school children.

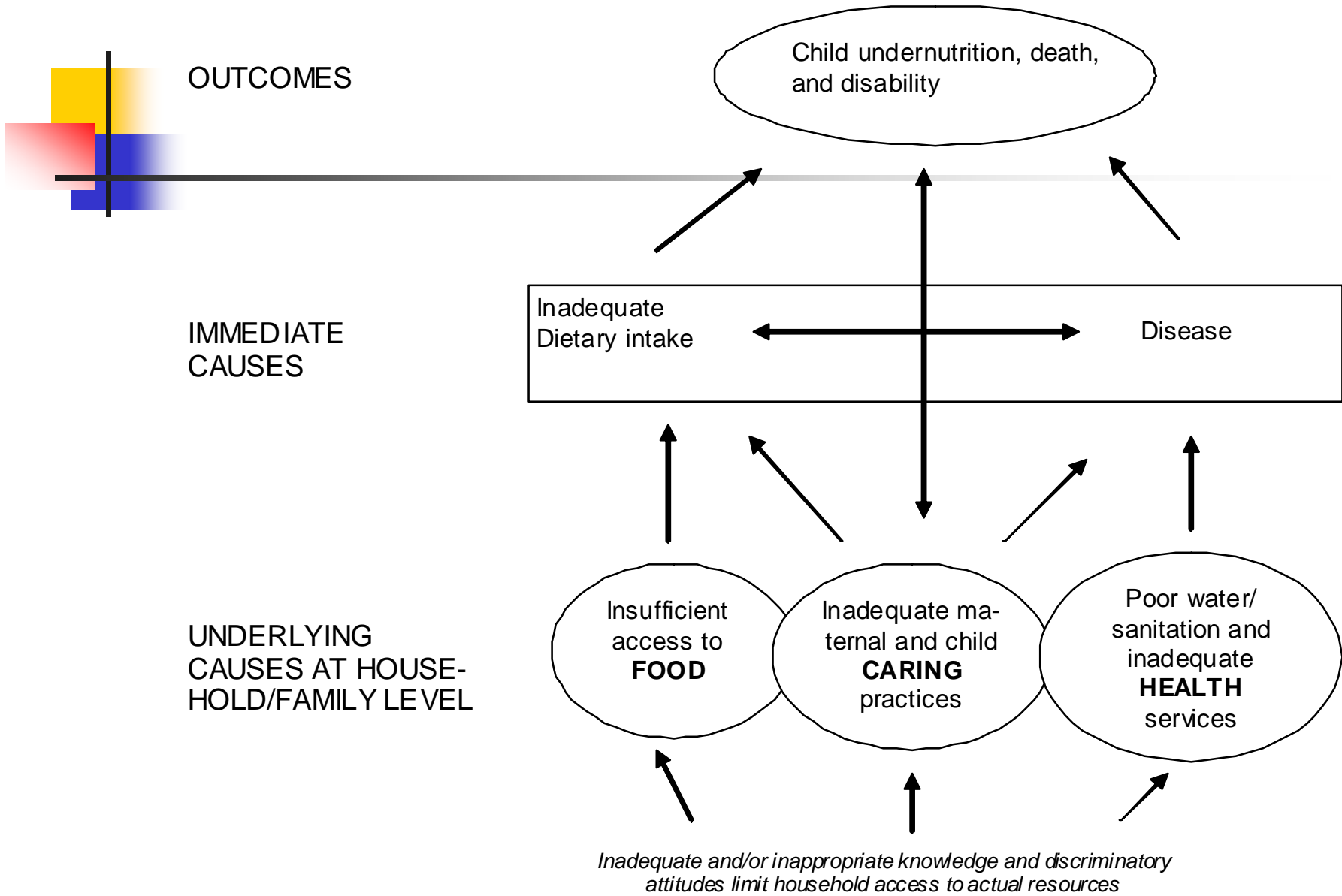
Figure 5: Causes of child under nutrition

Figure 5: Causes of child undernutrition

**BASIC CAUSES
IN SOCIETY**



Source: UNICEF (1998) The State of the World's Children 1998. Oxford: Oxford University



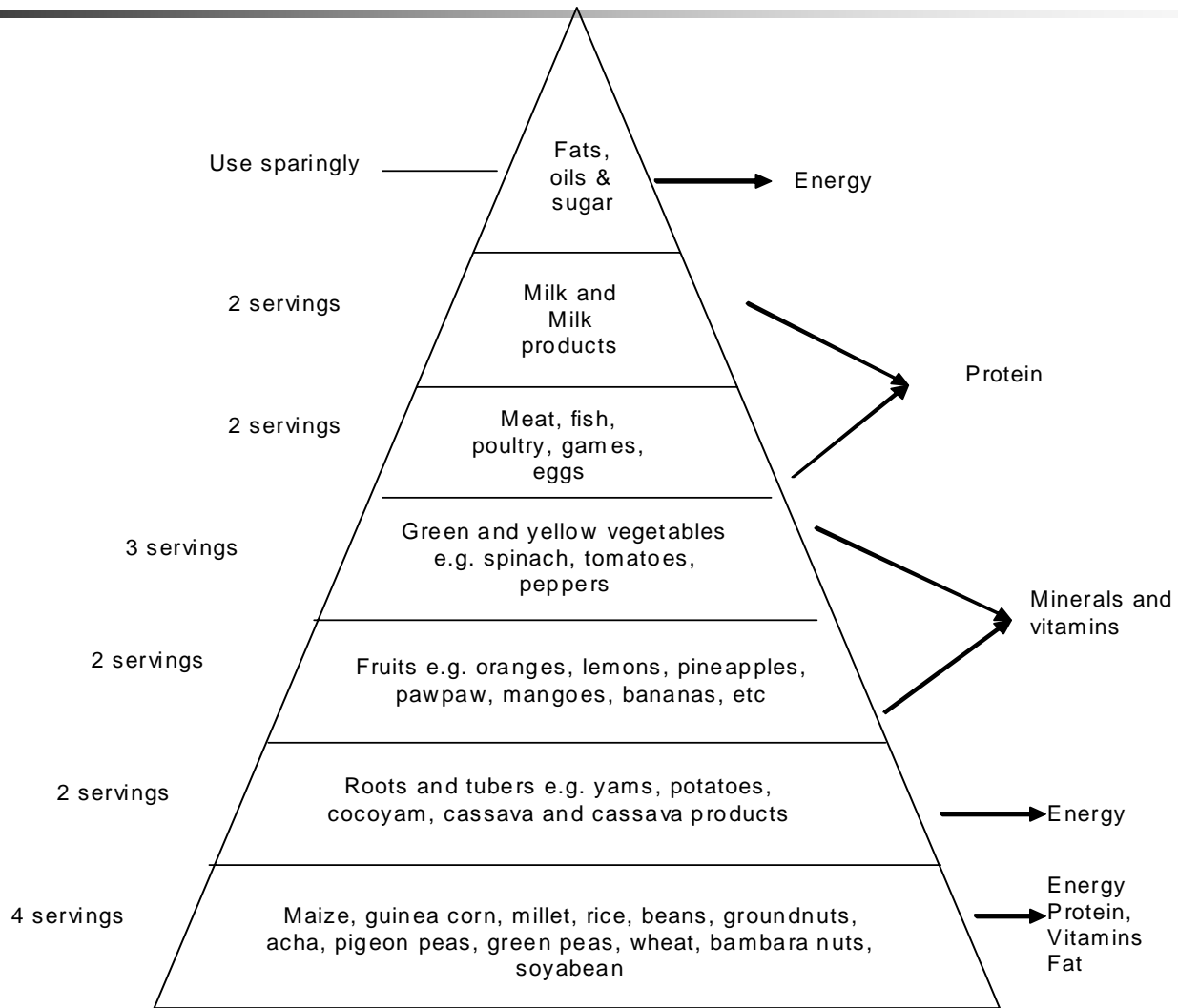


The role of change agents in improving child nutrition.

- International level – United Nations through its organ of WHO, UNICEF, ILO, UNDP
- Development or nutrition goals 1990
- Millennium Development Goals with nutrition as indicators (Goals 1-6)
- National level
- National Policy on Food and Nutrition in Nigeria.
- Implementation strategies to improve food security, women education, child care and health.
- Household level, the role of mothers.
- Educational institutions – role of primary school teachers
- Health Care Givers
- Food industries



Figure 6: Food pyramid





Dietary modification for improved child nutrition

- Food habits of children
- Nutrient requirements of children
- **Table 4**
- Modification of diet using Food Based guidelines Food Pyramid.
- Whatever method, ensure variety in the diet.



Table 4: World Health Organization Recommended Intakes

Age	Body Weight (kg)	Energy (Kcal)	Energy (MJ)	Protein ^a (g)	Vitamin A ^b (μg)	Vitamin D ^c (μg)	Thiamin (mg)	Riboflavin (mg)	Niacin (mg)	Folic acid (μg)	Vitamin B12 (μg)	Ascorbic acid (mg)	Calcium (g)	Iron (mg)
Children														
<1	7.3	820	3.4	14	300	10.0	0.3	0.5	5.4	60	0.3	20	0.5-0.6	5-10
1 - 3	13.4	1360	5.7	16	250	10.0	0.5	0.8	9.0	100	0.9	20	0.4-0.5	5-10
4 - 6	20.2	1830	7.6	20	300	10.0	0.7	1.1	12.1	100	1.5	20	0.4-0.5	5-10
7 - 9	28.1	2190	9.2	25	400	2.5	0.9	1.3	14.5	100	1.5	20	0.4-0.5	5-10

a As egg or milk protein

b As retinol



Importance of dairy foods in the diet of children

- Milk provides protein for growth and calcium for skeletal bone mass.
- Nutrient content of milk
- **Table 5**
- Constraints to milk drinking behaviour in children
 - i. availability of soft drinks and other competing beverages
 - ii. Milk not a school feeding programmes
 - iii. The flavour of milk
 - iv. Parents do not drink enough milk to influence their children's milk drinking behaviour.



Table 5: Nutrient Composition of milk and milk products (per 100 grams edible portion)

	Moisture %	KJ	Protein g	Fat g	Carbohydrate g	Calcium mg	Phosphorus mg	Iron mg	Vitamin A IU
1. Cheese (local whole ware)	70	798	12.6	15.6	0	95		1.2	370
2. Nono	90	188	5.0	1.8	2.0	6.8	-	0.8	-
3. Milk (Fluid whole evaporated)	90	660	8.6	9.0	11.0	280	250	0.5	610
4. Milk, canned, skim	79	110	8.1	1.0	14.0	325	172	0.3	345
5. Milk, sweetened condensed	9.0	327	8.0	9.0	56.0	298	255	0.2	300
6. Chocolate milk	32.8	352.8	3.2	3.2	10.4	112	100.4	0.24	104
7. Ice - cream	45.5	359.1	3.8	10.5	24.1	132.3	100.1	0.1	406.0
8. Yoghurt	38.7	259.0	3.5	3.1	4.8	120.7	94.7	0.1	123.3



Conclusion

- Existence of child malnutrition in Nigeria due mainly to poor feeding habits child care and health.
- Dietary modification with improvement in milk consumption would improve child nutrition