

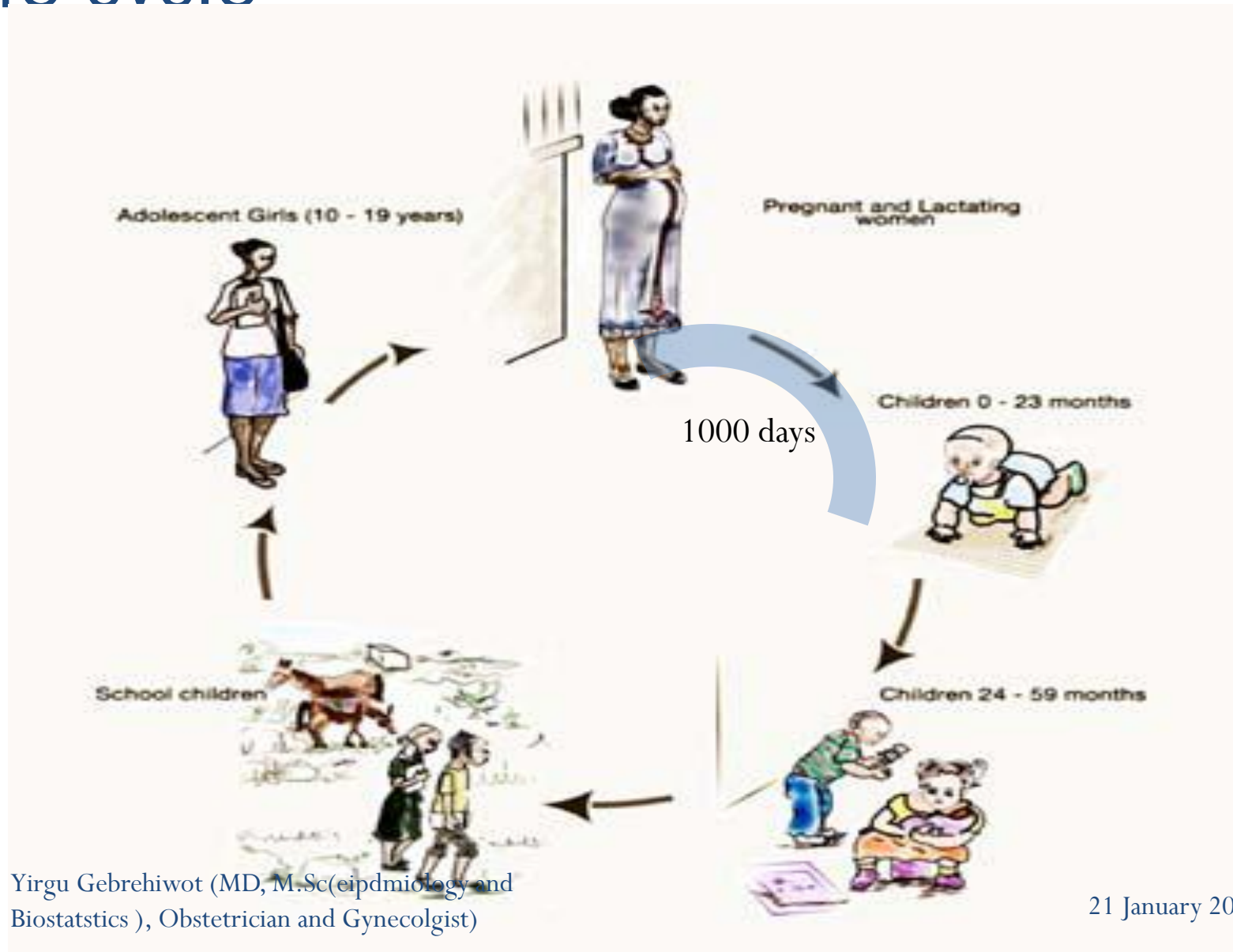
Early life Nutrition in the Context of Maternal Nutrition:

Prevention of intergenerational
malnutrition

Outline

- Life cycle approach(nutrition and RH)
- RH problems of young and adolescents
- Malnutrition
 - PEM
 - Micronutrient Deficiency (Iron , Iodine and Vit A)
- Underlying problems
- Way forward

Life cycle



Life cycle approach in RH

- Birth



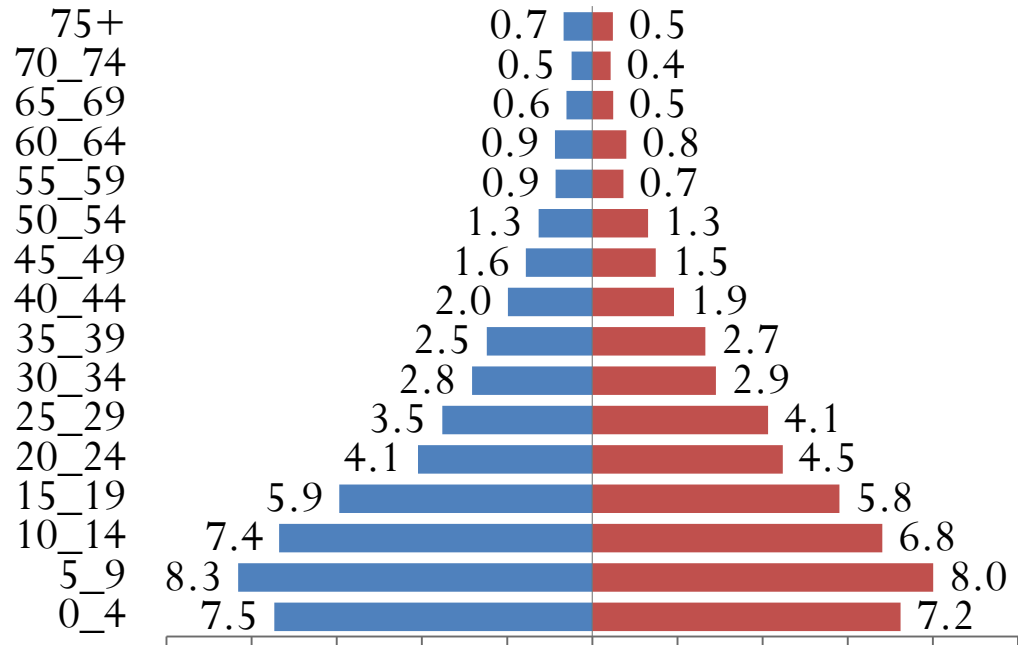
- Adolescence



- Adult



- Elderly



Total population

- under 24 years 48,030,414 (65.5%)
- 10 - 24 years 25,276,315(34.5%)
- 10 - 19 years 18,997,570 (25.9%)

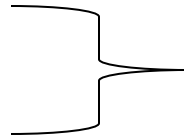
Based on CSA 2007

Some indicators

1. GBV

80% women

50% men



belief in wife beating

2. FGM

>50% females 15-19 yrs. has undergone FGC

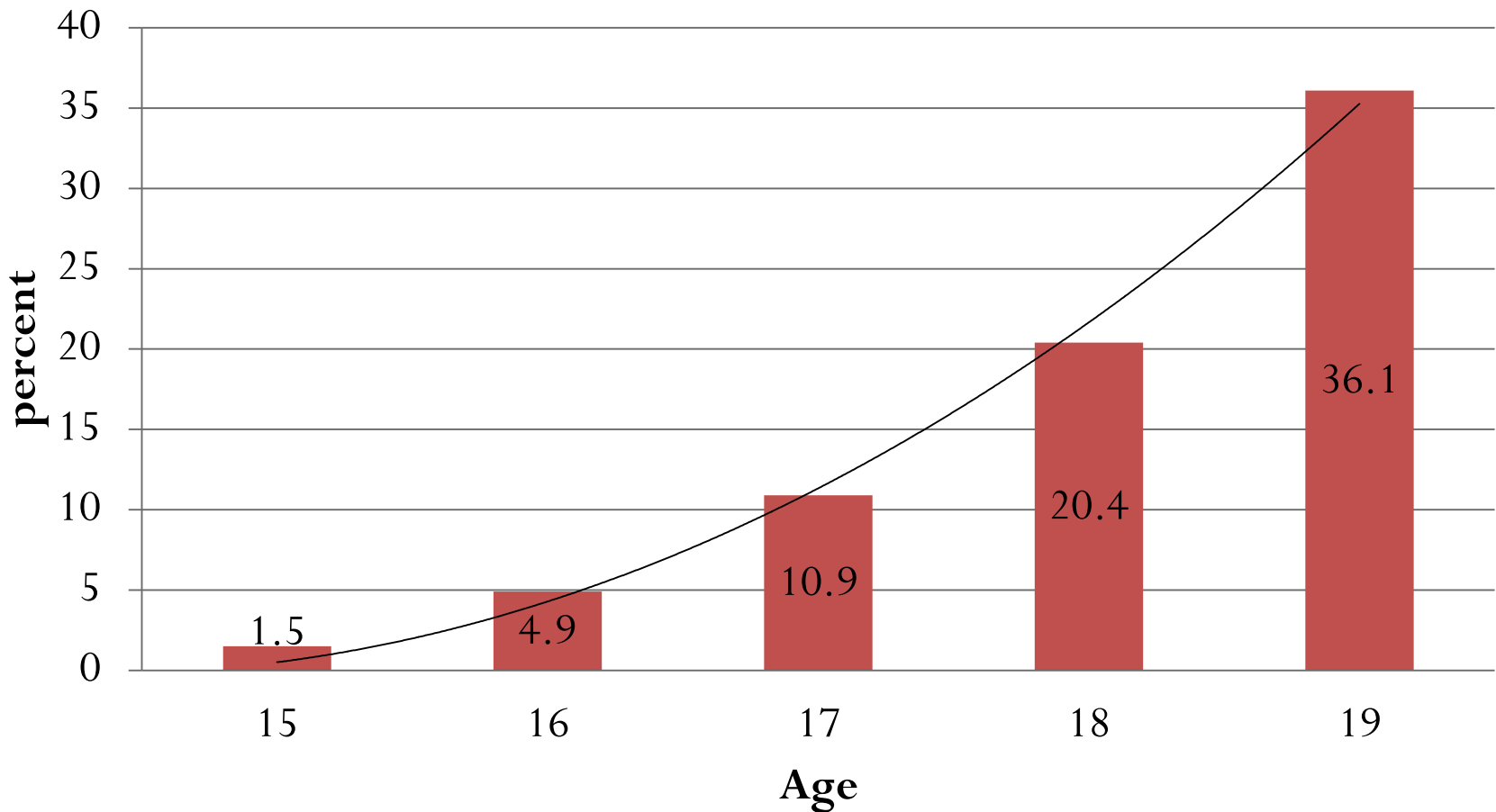
≈ 1/4 females 15-24 believe FGC continue

3. Polygamy 5-8%

Indicators ...Sexuality

- Sexual debut
 - Girls 16 yrs. (14.1 - 21.9yrs.)
 - Boys 20 yrs.
 - Urban Vs rural 2 yrs
 - Educated 5 yrs late
- Age at marriage 16.1 girls

Percent of women with live children



Yirgu Gebrehiwot (MD, M.Sc(eipdmiology and Biostatstics), Obstetrician and Gynecolgist)

21 January 2014

Wantednes of pregnancy

Pregnancies, by intention

| Total no. | % intended | % unintended | Total % |
|-----------|------------|--------------|---------|
| 3,980,000 | 59 | 41 | 100 |

Pregnancies, by intendedness

| Region | Total no. | % intended | % unintended |
|------------------|-----------|------------|--------------|
| Addis Ababa | 100,000 | 28 | 72 |
| Afar | 70,000 | 82 | 18 |
| Amhara | 840,000 | 63 | 37 |
| Benshangul-Gumaz | 40,000 | 66 | 34 |
| Dire Dawa | 30,000 | 37 | 63 |
| Gambella | 10,000 | 69 | 31 |
| Harari | 20,000 | 31 | 69 |
| Oromia | 1,570,000 | 52 | 48 |
| Somali | 260,000 | 91 | 9 |
| SNNP | 820,000 | 55 | 45 |
| Tigray | 220,000 | 74 | 26 |

Nutritional status of women

- 3.4 % less than 145
- 26.9% of all and 36.1 % adolescents
less than 18.5 kg/mt^2
- 1% obese

PEM and Birth outcome

Sixteen intervention studies were included in the review.

- Birth weight compared with control [mean difference 73 (g) [95% confidence interval (CI) 30, 117]].
- Combined data from five studies showed a reduction of 32% in the risk of LBW in the intervention group compared with control [relative risk (RR) 0.68 [95% CI 0.51, 0.92]].
- There was a reduction of 34% in the risk of small-for-gestational-age babies in the intervention compared with the control group [RR 0.66 [95% CI 0.49, 0.89]].
- The risk of stillbirth was also reduced by 38% in the intervention group compared with control [RR 0.62 [95% CI 0.40, 0.98]].
- In conclusion, balanced protein-energy supplementation is an effective intervention to reduce the prevalence of LBW and small-for-gestational-age births, especially in undernourished women.

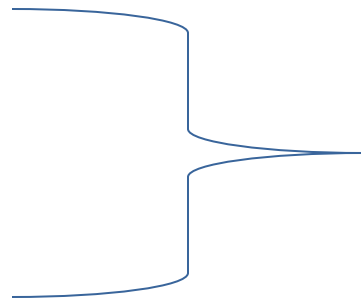
[Imdad A, Bhutta ZA. Maternal nutrition and birth outcomes: effect of balanced protein-energy supplementation. Paediatr Perinat Epidemiol. 2012 Jul;26 Suppl 1:178-90. doi: 10.1111/j.1365-3016.2012.01308.x](#)

Yirgu Gebrehiwot (MD, M.Sc(eipdmiology and Biostatstics), Obstetrician and Gynecolgist)

21 January 2014

Other Micronutrient deficiency

- Iron
- Vit A
- Iodine
- Thiamine
- Niacin
- Vit C

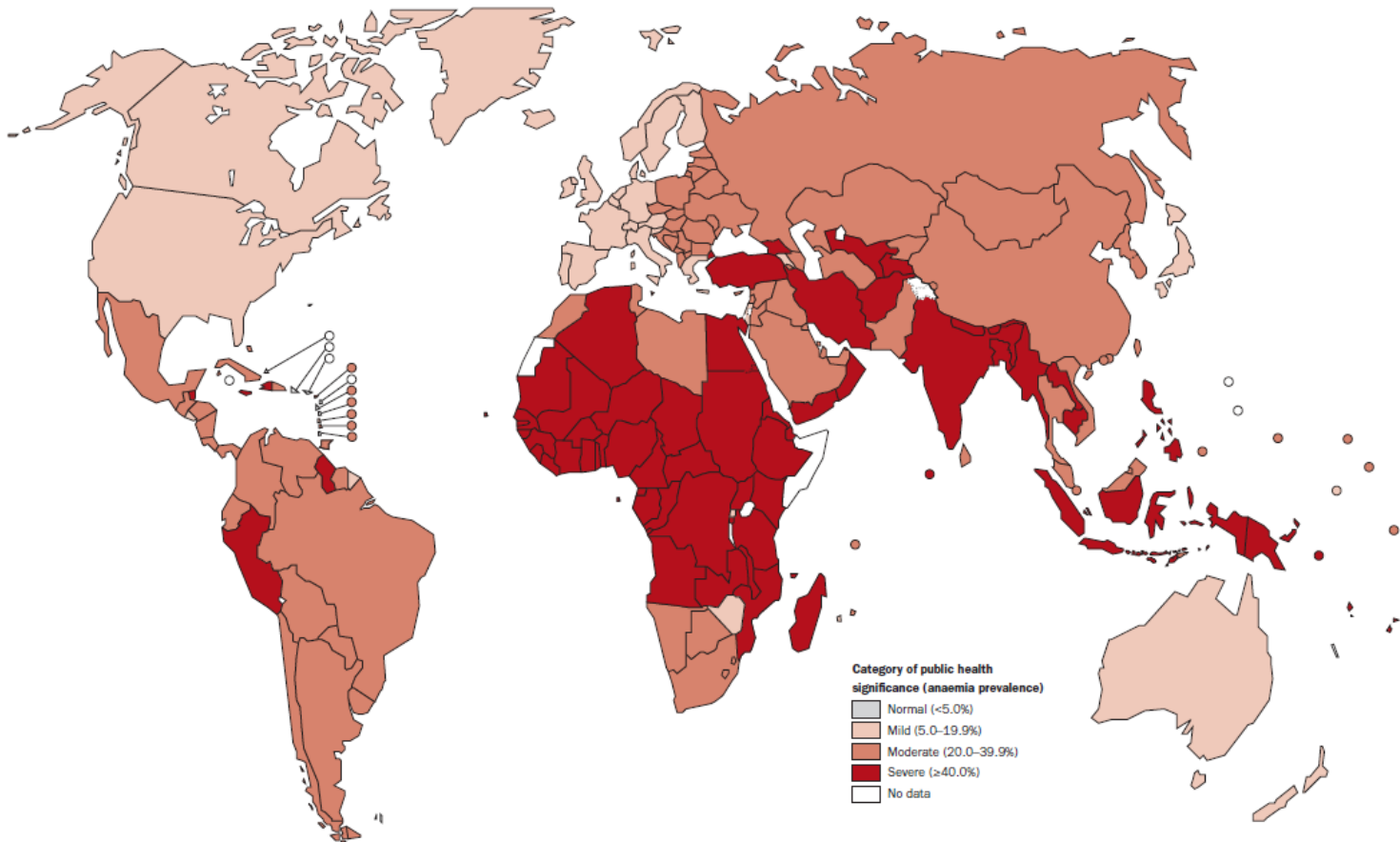


In Emergency Situation(IDP)

Prevalence of Anemia

| WHO region | Preschool-age children ^a | | Pregnant women | | Non-pregnant women | |
|-----------------------|-------------------------------------|------------------------|---------------------|-----------------------|------------------------------|------------------------|
| | Prevalence (%) | # affected (millions) | Prevalence (%) | # affected (millions) | Prevalence (%) | # affected (millions) |
| Africa | 67.6 (64.3-71.0) ^b | 83.5 (79.4-87.6) | 57.1 (52.8-61.3) | 17.2 (15.9-18.5) | 47.5 (43.4- 51.6) | 69.9 (63.9-75.9) |
| Americas | 29.3 (26.8-31.9) | 23.1 (21.1-25.1) | 24.1 (17.3-30.8) | 3.9 (2.8-5.0) | 17.8 (12.9-22.7) | 39 (28.3-49.7) |
| South-East Asia | 65.5 (61.0-70.0) | 115.3 (107.3-123.2) | 48.2 (43.9-52.5) | 18.1 (16.4-19.7) | 45.7 (41.9-49.4) | 182 (166.9-197.1) |
| Europe | 21.7 (15.4-28.0) | 11.1 (7.9-14.4) | 25.1 (18.6-31.6) | 2.6 (2.0-3.3) | 19 (14.7-23.3) | 40.8 (31.5-50.1) |
| Eastern Mediterranean | 46.7 (42.2-51.2) | 0.8 (0.4-1.1) | 44.2 (38.2-50.3) | 7.1 (6.1-8.0) | 32.4 (29.2-35.6) | 39.8 (35.8-43.8) |
| Western Pacific | 23.1 (21.9-24.4) | 27.4 (25.9-28.9) | 30.7 (28.8-32.7) | 7.6 (7.1-8.1) | 21.5 (20.8-22.2) | 97 (94.0-100.0) |
| Global | 47.4 (45.7-49.1) | 293.1 (282.8-303.5) | 41.8 (39.9-43.8) | 56.4 (53.8-59.1) | 30.2 (28.7-31.6) | 468.4 (446.2-490.6) |

Prevalence of anemia



Anemia among women

| Maternity status | <11 gm/dl | <7.0 gm |
|------------------|-----------|---------|
| Pregnant | 22 | 1.2 |
| Breast feeding | 18.5 | 0.6 |
| Neither | 15 | 0.5 |

| Age of women | <11 gm/dl | <7.0 gm |
|--------------|-----------|---------|
| 15-19 | 13.4 | 0.3 |
| 20-29 | 16.3 | 0.8 |
| 30-39 | 17.3 | 0.6 |
| 40- 49 | 21.5 | 0.5 |

Anemia among women regional distribution

| Region | % anemic |
|-------------|----------|
| Somali | 44 |
| Afar | 34.8 |
| Dire Dawa | 28.8 |
| Gambella | 19.4 |
| Hararri | 19.4 |
| Oromia | 19.2 |
| BG | 19.1 |
| Amhara | 16.6 |
| Tigray | 12.4 |
| SNNPR | 11.3 |
| Addis Ababa | 9.3 |

- Eighty-three percent of women did not take iron tablets during their last pregnancy.
- Fifteen percent took them for less than 60 days, and
- less than 1 percent took them for 90 days or more during their last pregnancy.

Deworming

- 8.5 % urban
 - 5.5% national
- 5.0% Rural

The overall prevalence of intestinal parasites was 64.9%
Hookworm was the predominant (49.7%).

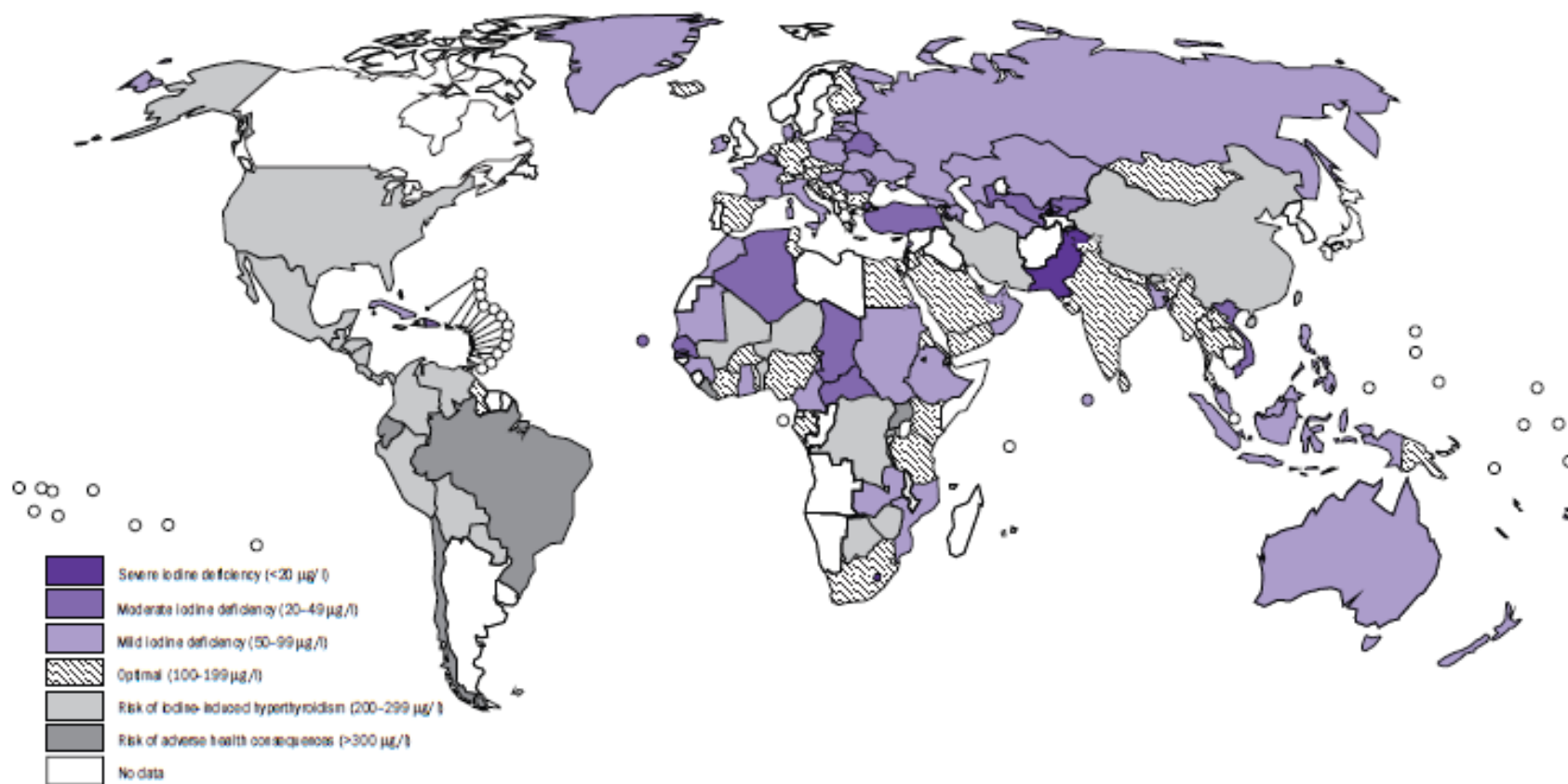
The density of hookworm egg ranged from 48 epg to 11,520 epg with mean and median values of 685 and 288 epg respectively.

Among those subjects with hookworm, 83.9% were anemic. On the contrary only 41 (22.5%) study subjects who appeared negative for hookworm on stool examination were anemic

[Dori GU](#), [Tullu KD](#), [Ali I](#), [Hirko A](#), [Mekuria G](#). Prevalence of hookworm infection and its association with anemia among patients visiting Fenan Medical Center, East Wollega Zone, Ethiopia. [Ethiop Med J](#). 2011 Jul;49(3):265-71.

Public health significance of Iodine

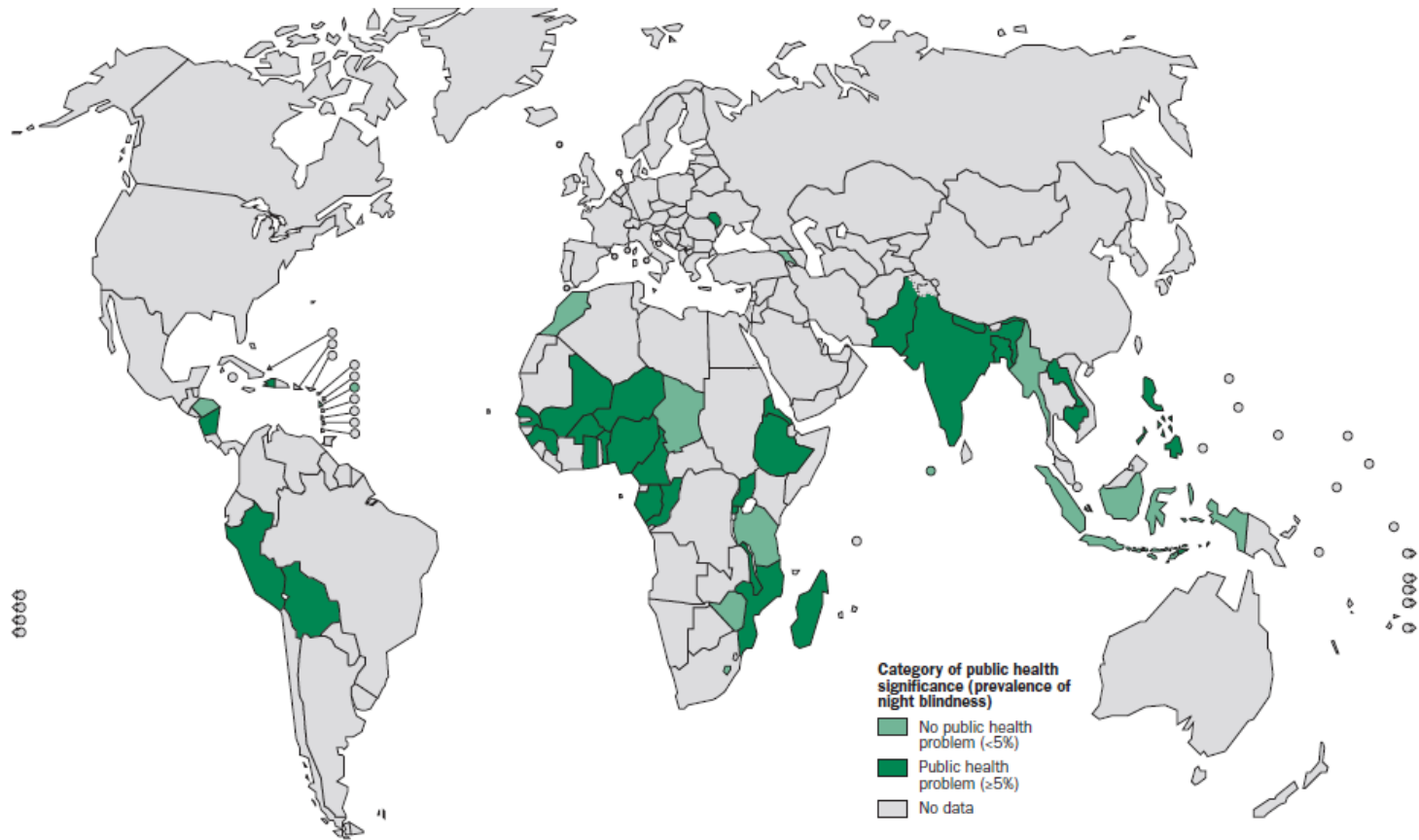
Figure 3.3 Degree of public health significance of iodine nutrition based on median UI



Iodine

- 93.8% salt tested
- 15.4% salt Iodized
- 11.3 , 11.7, 14.7, 15.6, 22.3
- 35.8% of mothers with goiter
- 83% pop. reside in iodine deficient areas
- IQ difference Of 13.5 points

Night blindness as a public health problem

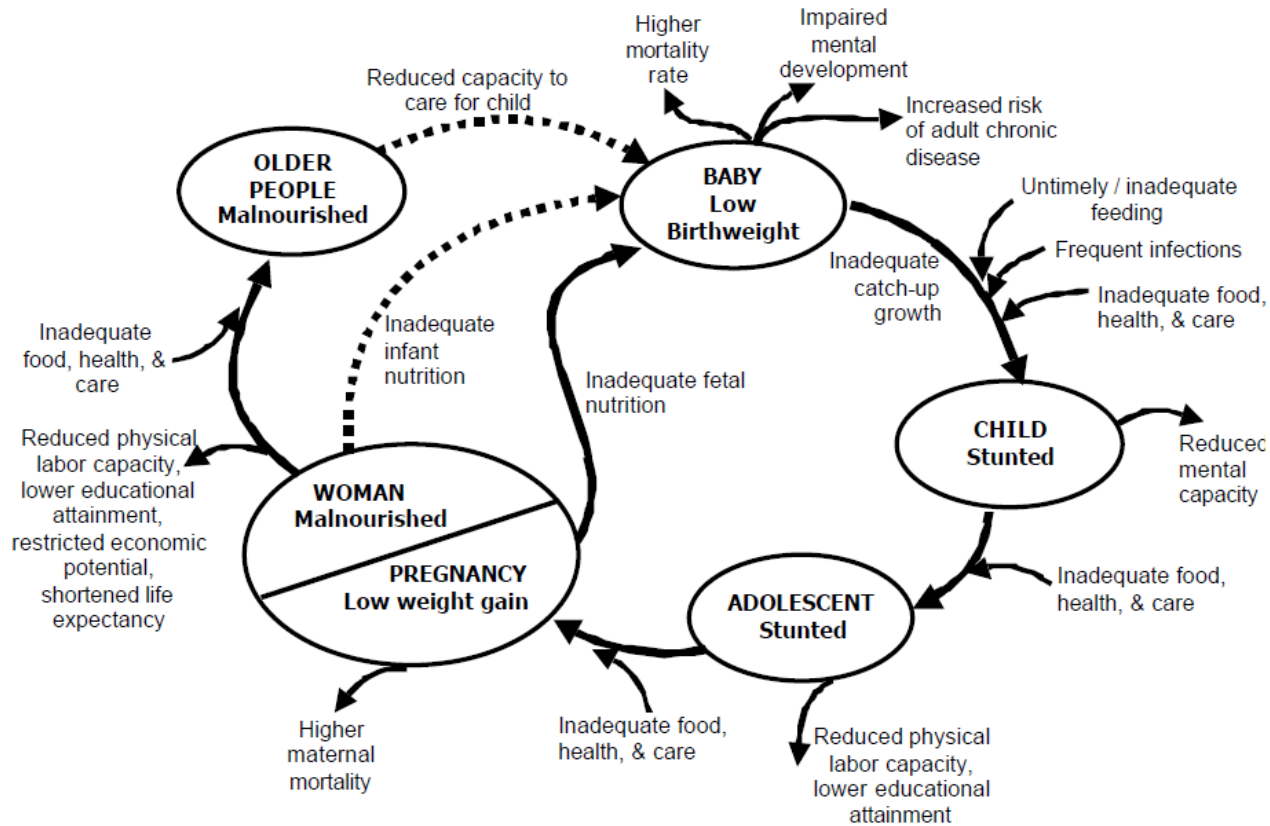


Vitamine A

- 20.4% Urban
- 15.0% rural
- 15.8% national average

- Bitot spot prevalence 1.7%
- Night blindness among women 22% (WHO)

The intergenerational link



Source: ACC/SCN-IFPRI, 2000

Multiple micronutrient supplementation

Only 21 trials (involving 75,785 women) contributed data to the review.

When compared with iron and folate supplementation,

MMS resulted in a statistically significant decrease in the number of

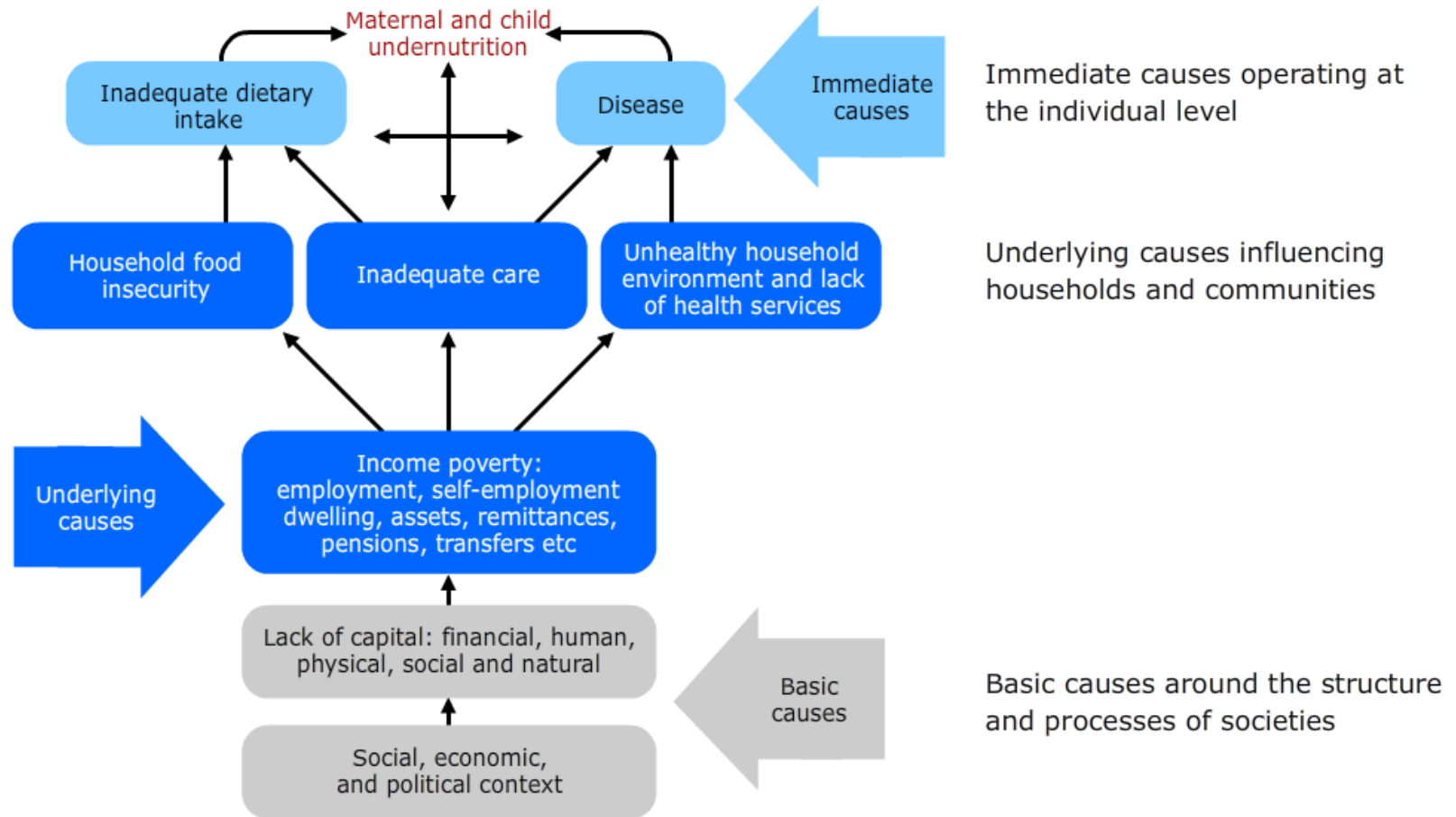
- low birth weight babies (risk ratio (RR) 0.89; (0.83 to 0.94)
- small-for-gestational age (SGA) babies (RR 0.87; 95% CI 0.81 to 0.95).

No statistically significant differences were shown

- preterm births RR 0.99 (95% CI 0.96 to 1.02),
- miscarriage RR 0.90 (95% CI 0.79 to 1.02),
- maternal mortality RR 0.97 (95% CI 0.63 to 1.48),
- perinatal mortality RR 0.99 (95% CI 0.84 to 1.16),
- stillbirths RR 0.96 (95% CI 0.86 to 1.07) and
- neonatal mortality RR 1.01 (95% CI 0.89 to 1.15).

Underlying problems

Conceptual frame work of malnutrition

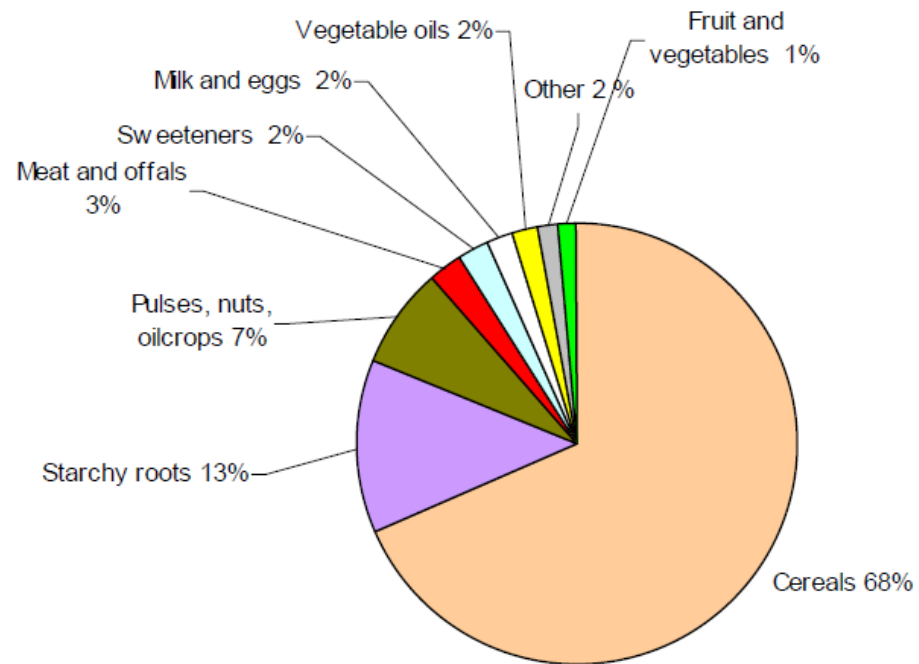


Health seeking

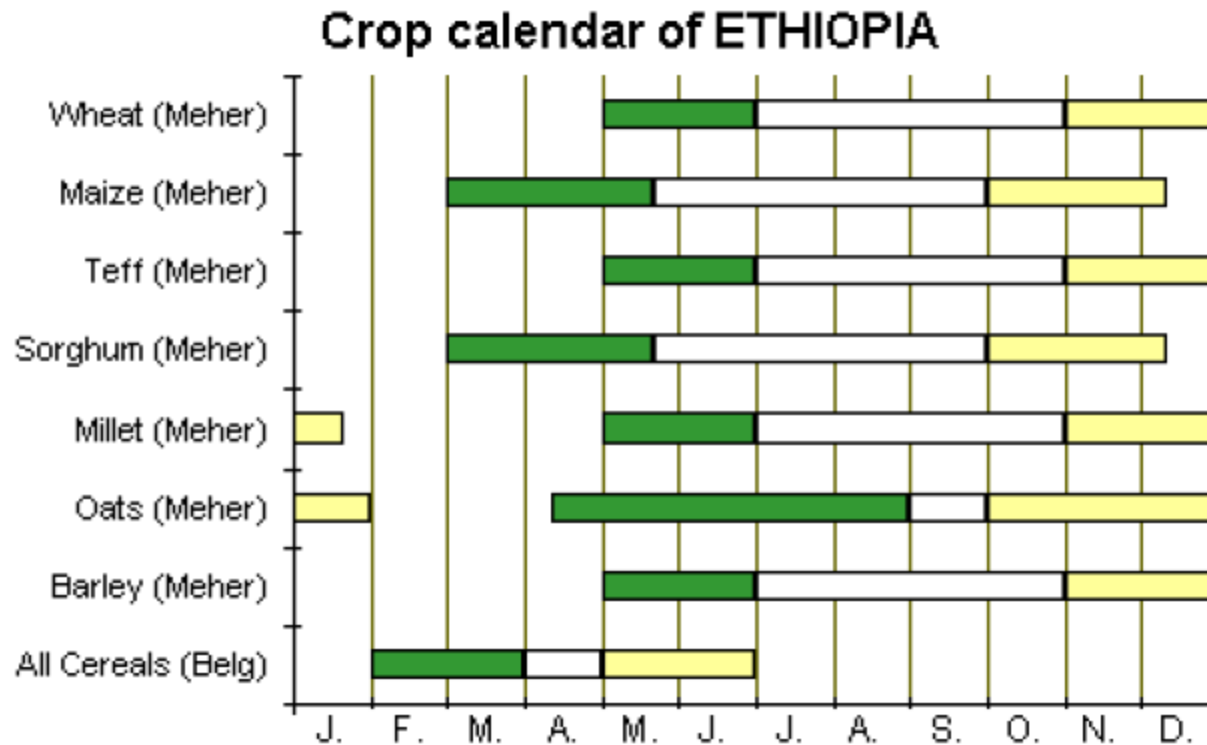
| | | |
|-------------------------|------|-------|
| • Ante natal attendance | 34% | 71.4% |
| • Skilled attendance | 10% | 16.8% |
| • Postnatal care | 6.6% | 36.2% |

Some issues on malnutrition

- Gender issues
- Dietary mix



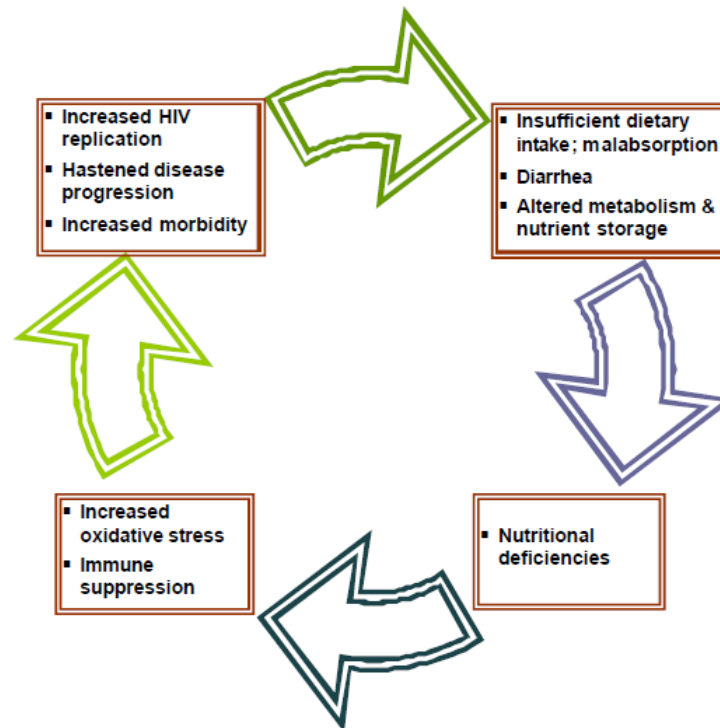
Some issues on malnutrition ...



Some issues on malnutrition

- Chronic illnesses

The vicious cycle of HIV/AIDS and malnutrition



Source: Adapted from Semba & Tang 1999

21 January 2014

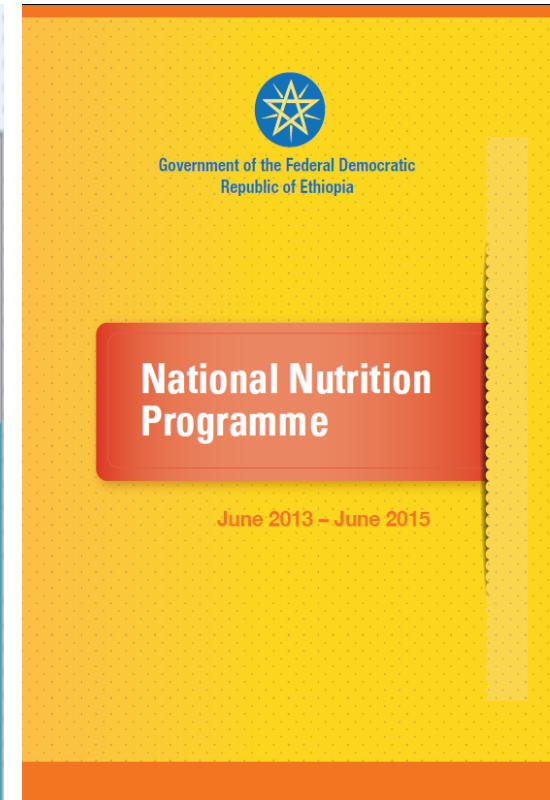
The way out

Strategic Objective 1:

Improve the nutritional status of women (15–49 years) and adolescents (10–19 years)

2015 Targets

- Reducing the proportion of adolescent girls aged 15–19 with a BMI <18.5 from 36 percent to 25 percent.
- Reducing the prevalence of anemia among pregnant women from 22 percent to 12 percent.



Rolling out NNP

Yirgu Gebrehiwot (MD, M.Sc(eipdmiology and Biostatstics), Obstetrician and Gynecologist)