Early life Nutrition in the Context of Maternal Nutrition:

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

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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

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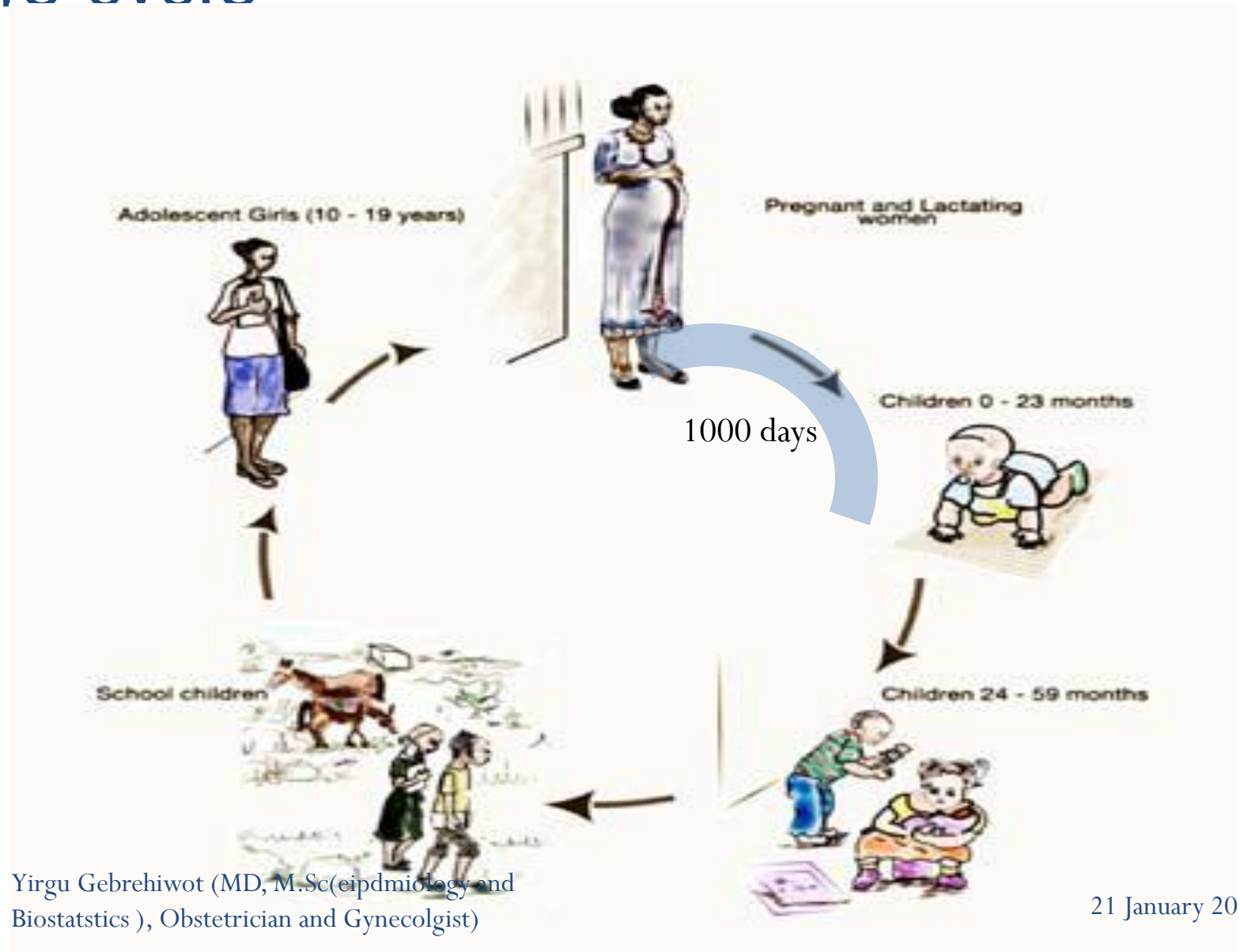
Life cycle



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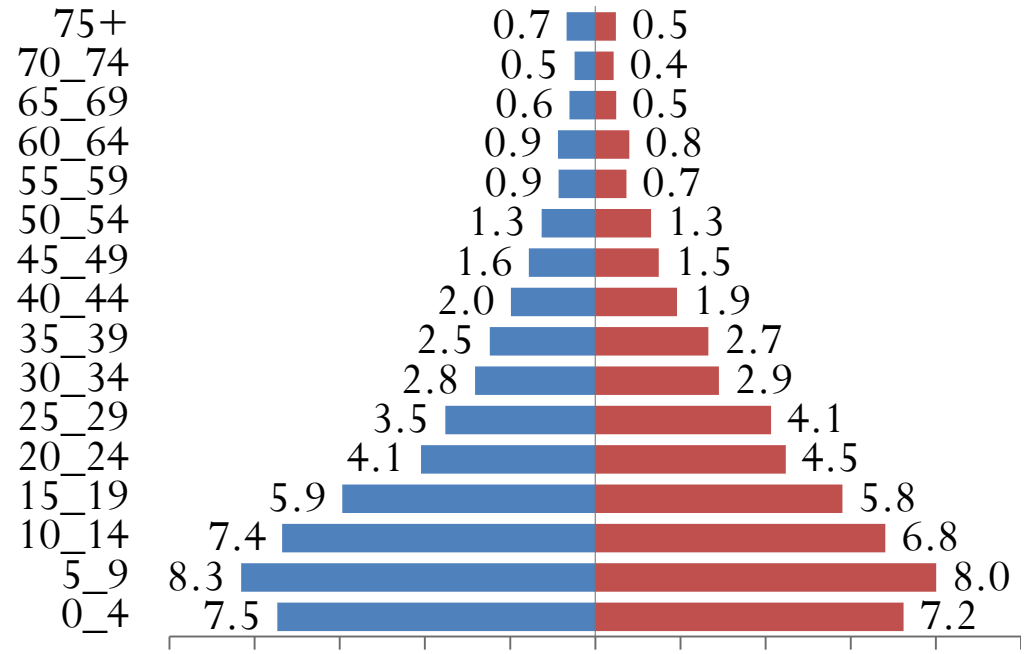
Life cycle approach in RH

- Birth
- Adolescence
- Adult
- Elderly



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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

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Some indicators

1. GBV

   80% women

   50% men

   } belief in wife beating

2. FGM

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

   ≈ ¼ females 15-24 believe FGC continue

3. Polygamy 5-8%

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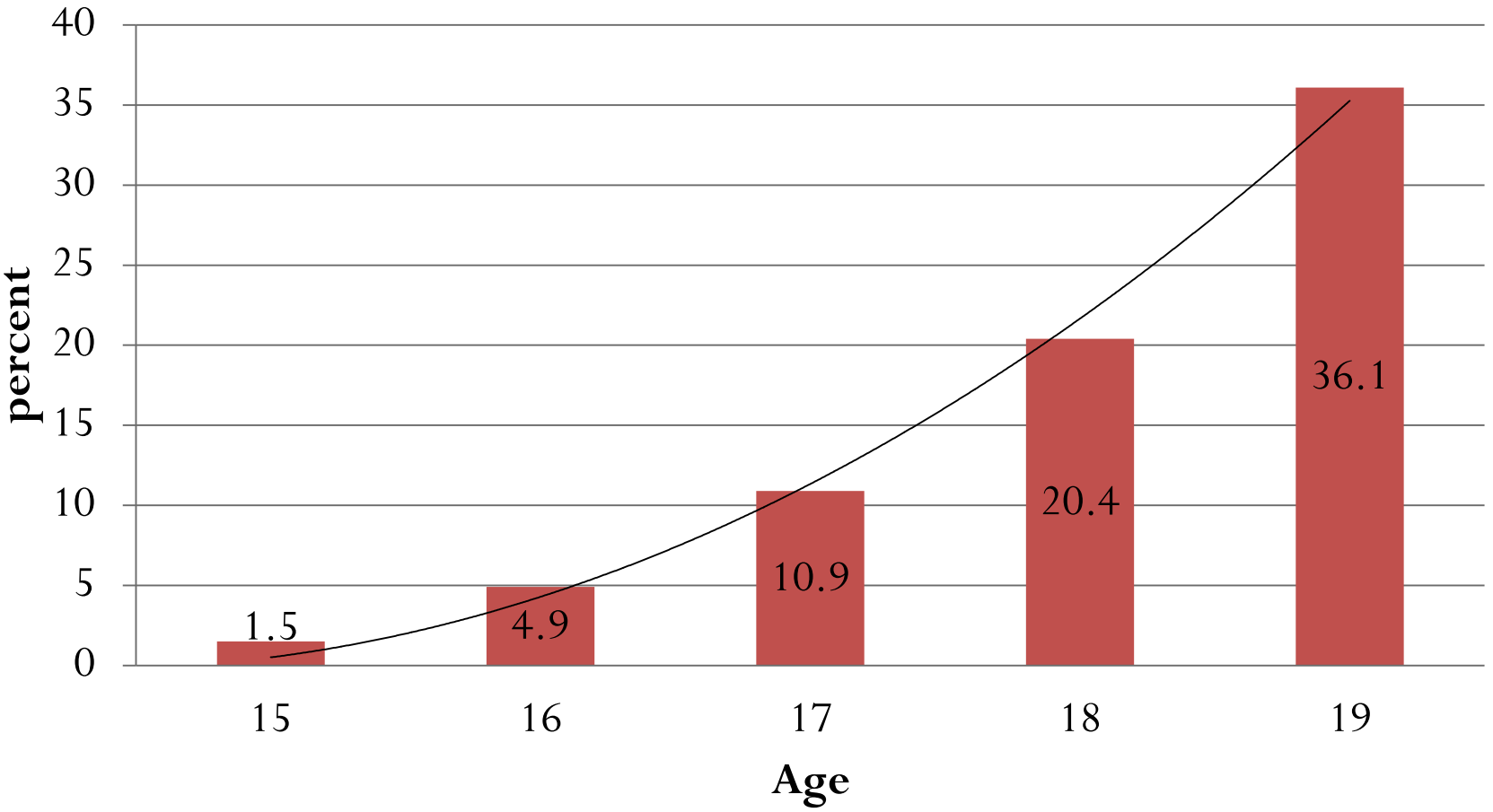
Indicators ...Sexuality ....

- 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



Wantednes of pregnancy

Pregnancies, by intention			
Total no.	% intended	% unintended	Total %
3,980,000	59	41	100

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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

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PEM and Birth outcome

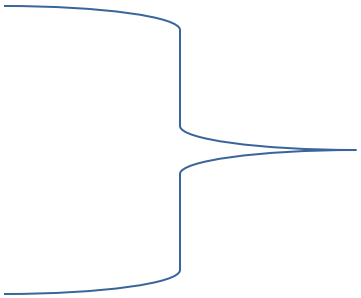
Sixteen intervention studies were included in the review.

- 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

Other Micronutrient deficience

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



In Emergency Situation(IDP)

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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)

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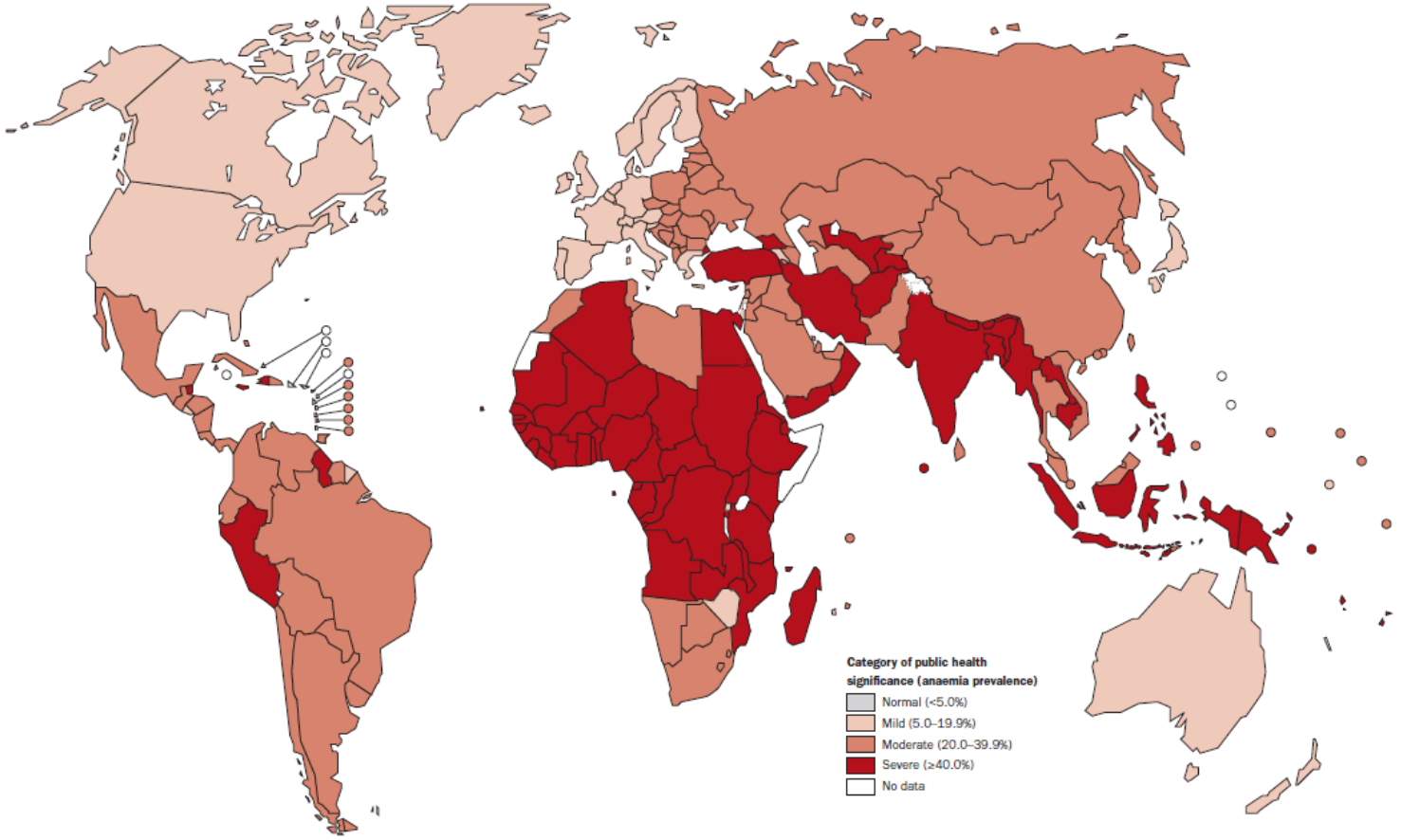
Prevalence of anemia



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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

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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

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- 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.

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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%).

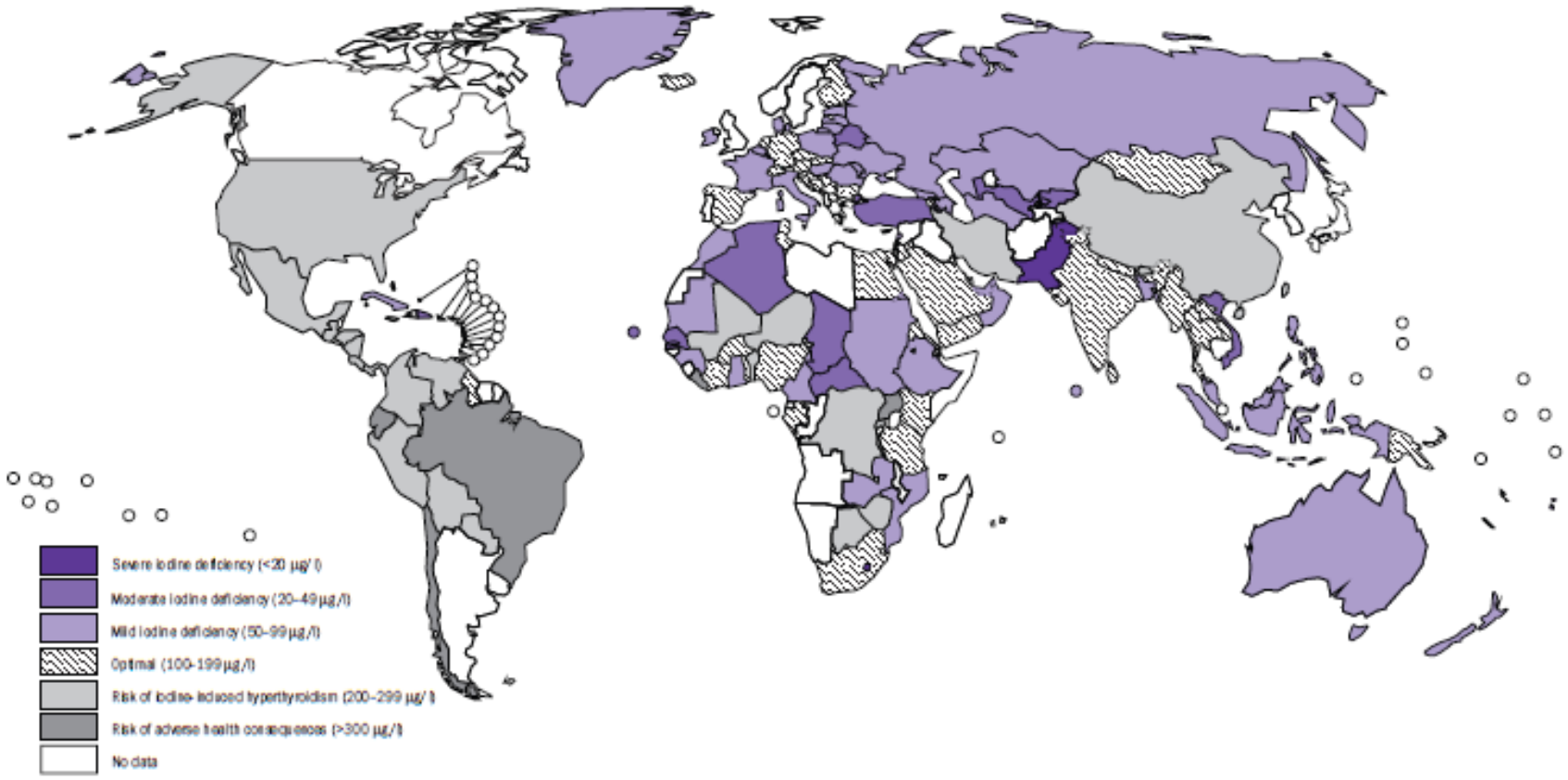
The density of hookworm egg ranged from 48 epg to 11,520 epg with mean and median values of 685 and 288 epg respectively.

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



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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 0f 13.5 points

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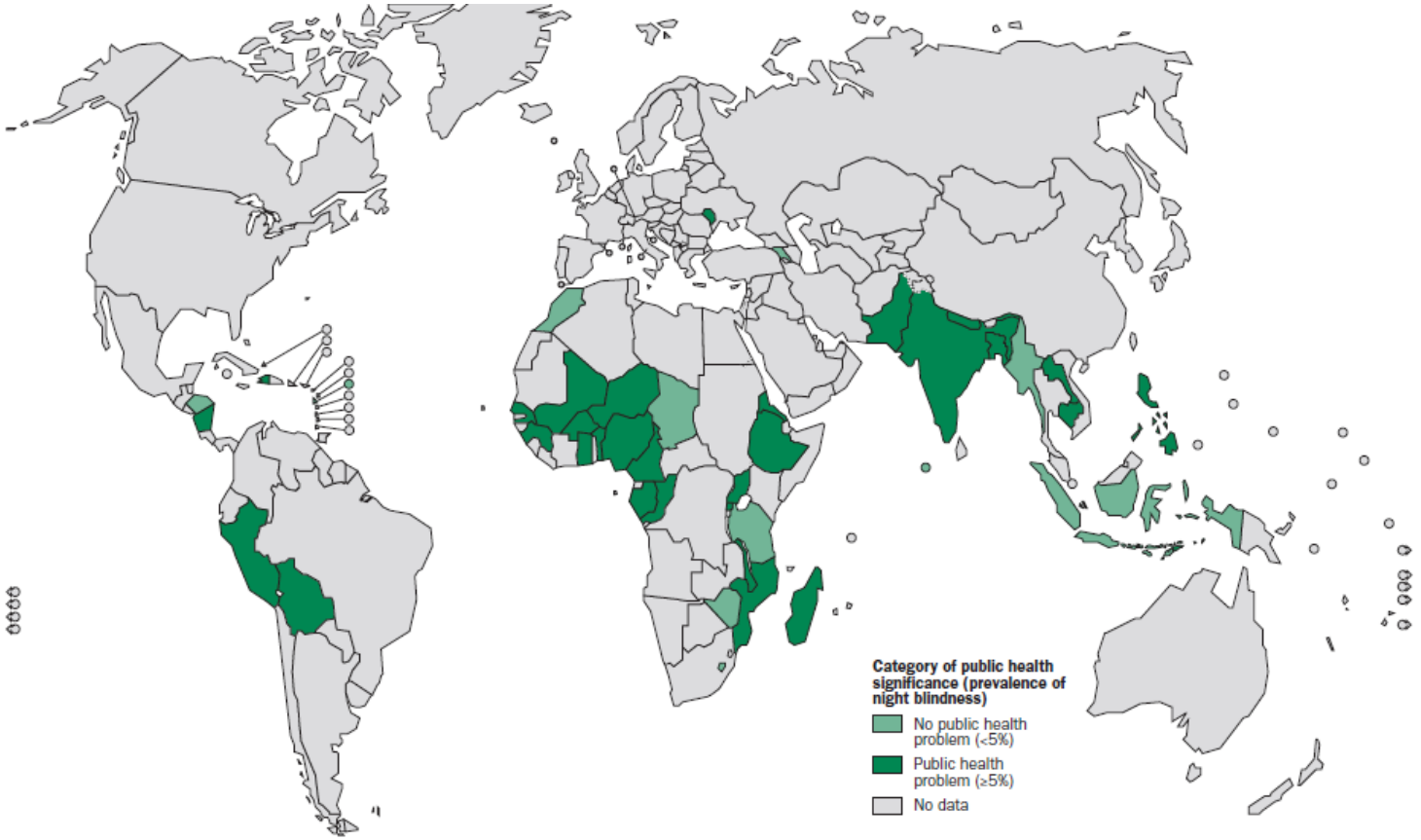
Night blindness as a public health problem



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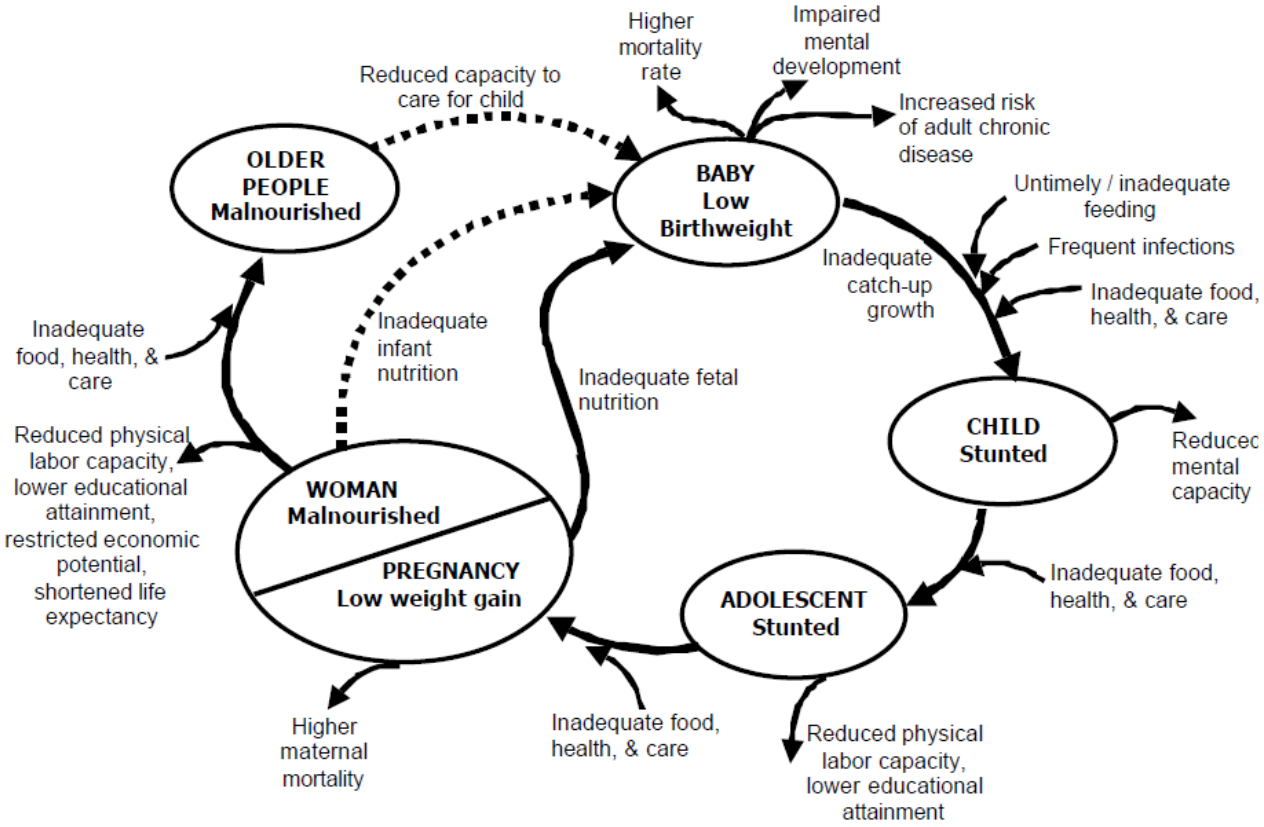
Vitamine A

- 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 supplimentation

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).

Multiple micronutrient supplementation for women during pregnancy. Cochrane Database Syst Rev. 2012 Nov 14;11:CD004905. doi: 10.1002/14651858.CD004905.pub3

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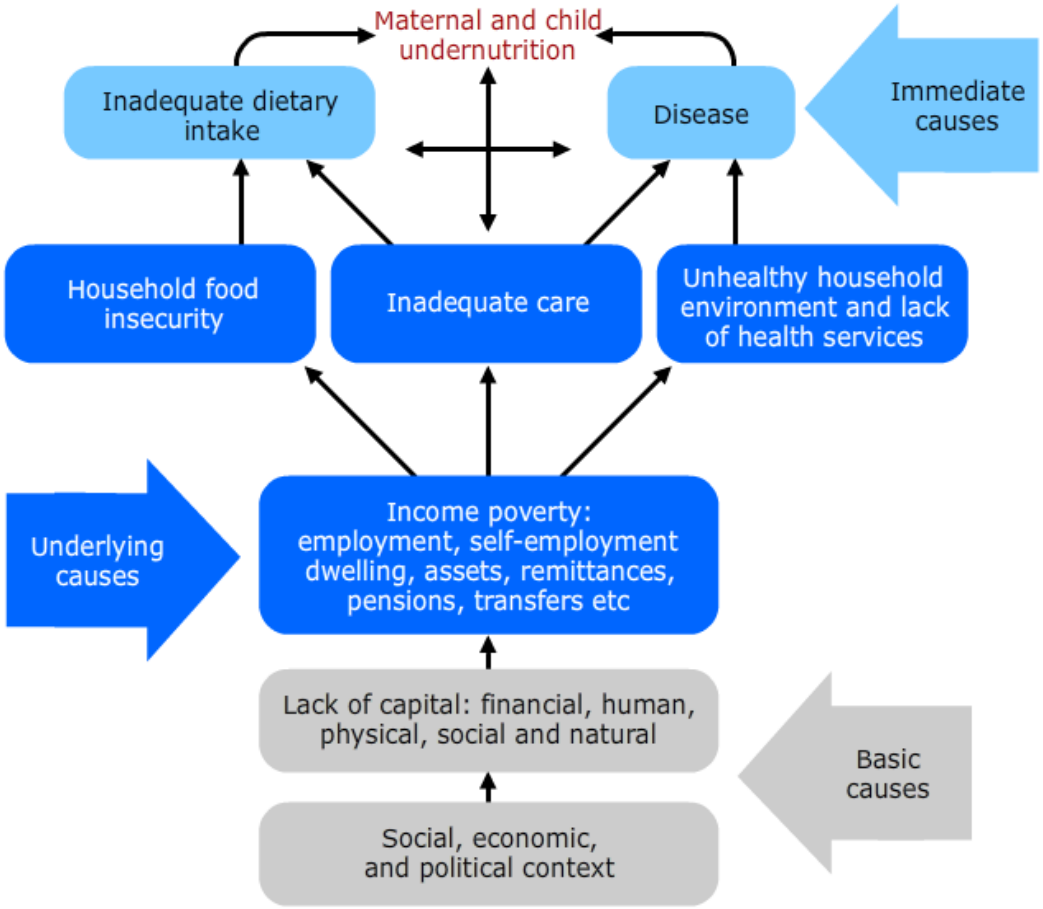
Underlying problems

Conceptual frame work of malnutrition



Immediate causes operating at the individual level

Underlying causes influencing households and communities

Basic causes around the structure and processes of societies

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Health seeking

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

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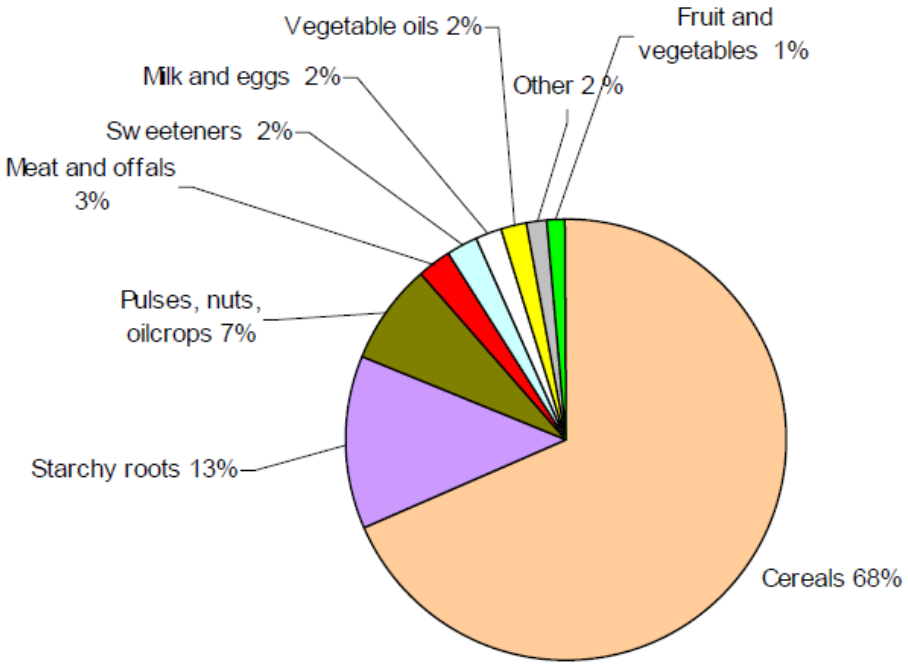
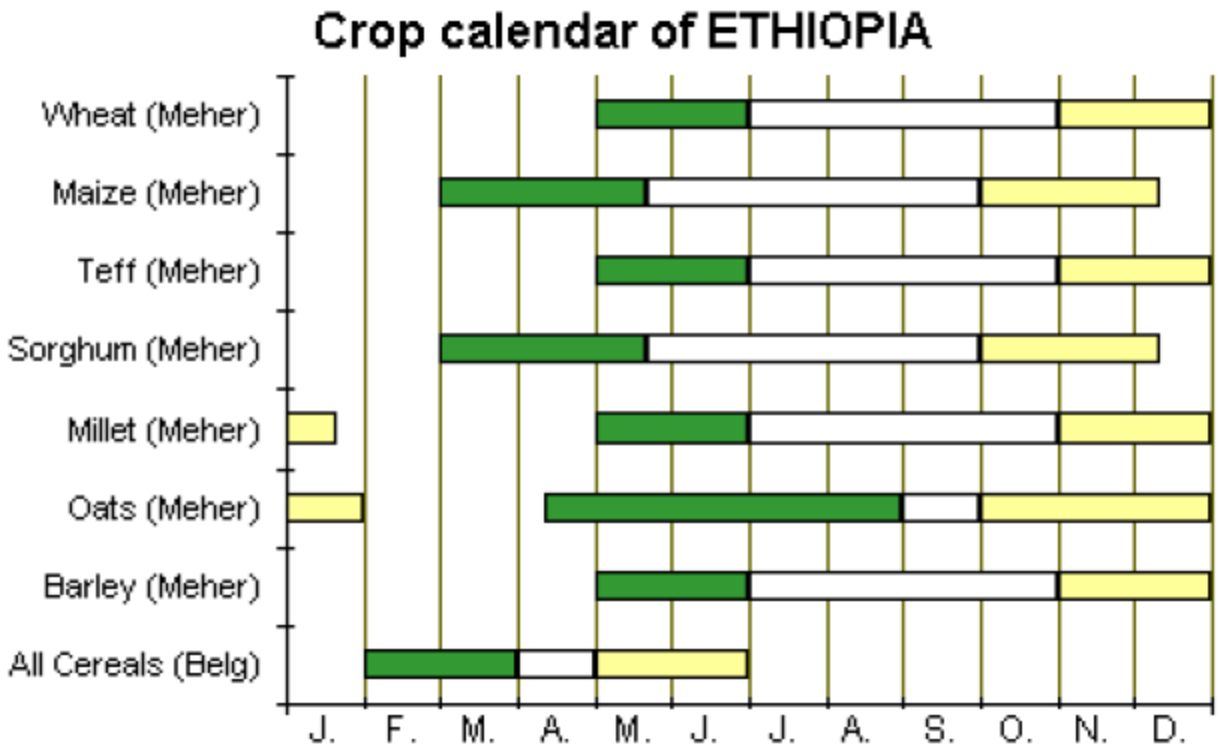
Some issues on malnutrition

- Gender issues
- Dietary mix



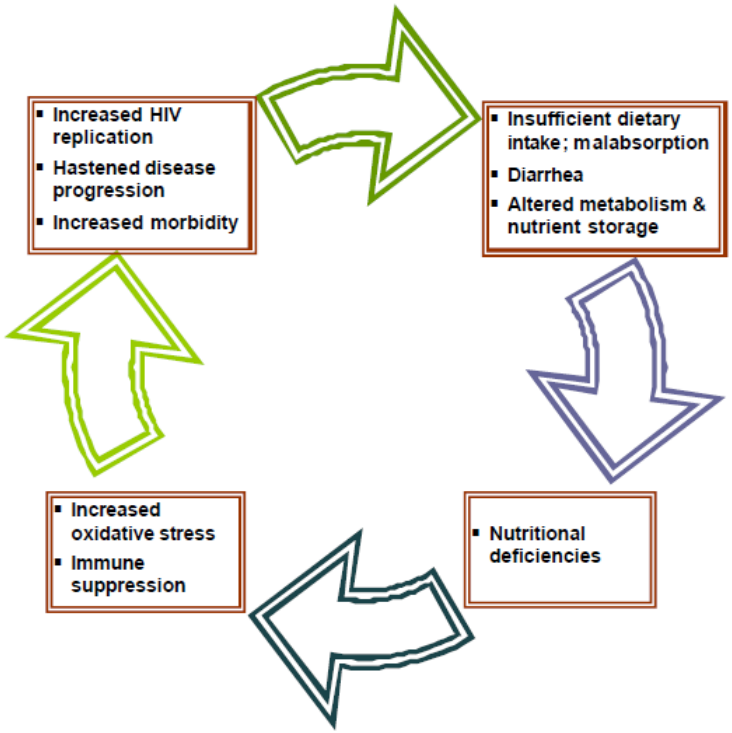
Some issues on malnutrition ...



Some issues on malnutrition

- Chronic illnesses

The vicious cycle of HIV/AIDS and malnutrition



Source: Adapted from Semba & Tang 1999

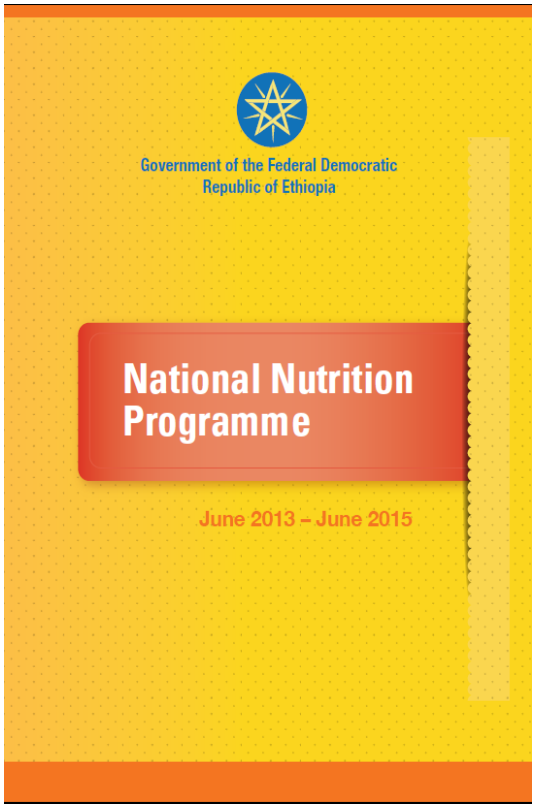
The way out

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

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