

# What it takes to accelerate anemia reduction in South Asia

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# Session learning objectives

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1.

Understand the **consequences** of anemia and why addressing it is a **critical priority** in South Asia.

2.

Recognize the **multifaceted etiology** of anemia and why **context-specific** interventions are needed.

3.

Learn how to use **existing tools, information and country specific data** to design actions to effectively address anemia.





# Section 1

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Anemia **consequences** and  
why it is a **critical priority** in  
South Asia.



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# Anemia and its consequences

- Anemia is a condition in which the number of red blood cells (RBC) or the hemoglobin concentration is lower than normal due to blood loss, ineffective production of RBC, or destruction of RBC

Consequences can range from mild to severe

- Fatigue and decreased productivity.
- Poor cognitive and motor development in children.
- Poor birth outcomes.
- Increased morbidity and mortality in adolescent girls and women and children with severe anemia.

- In 2019 anemia accounted for **50.3 million total years lived with disability**.
- For each US\$ 1 invested in anemia prevention and control could yield **US\$ 12 in economic returns**.

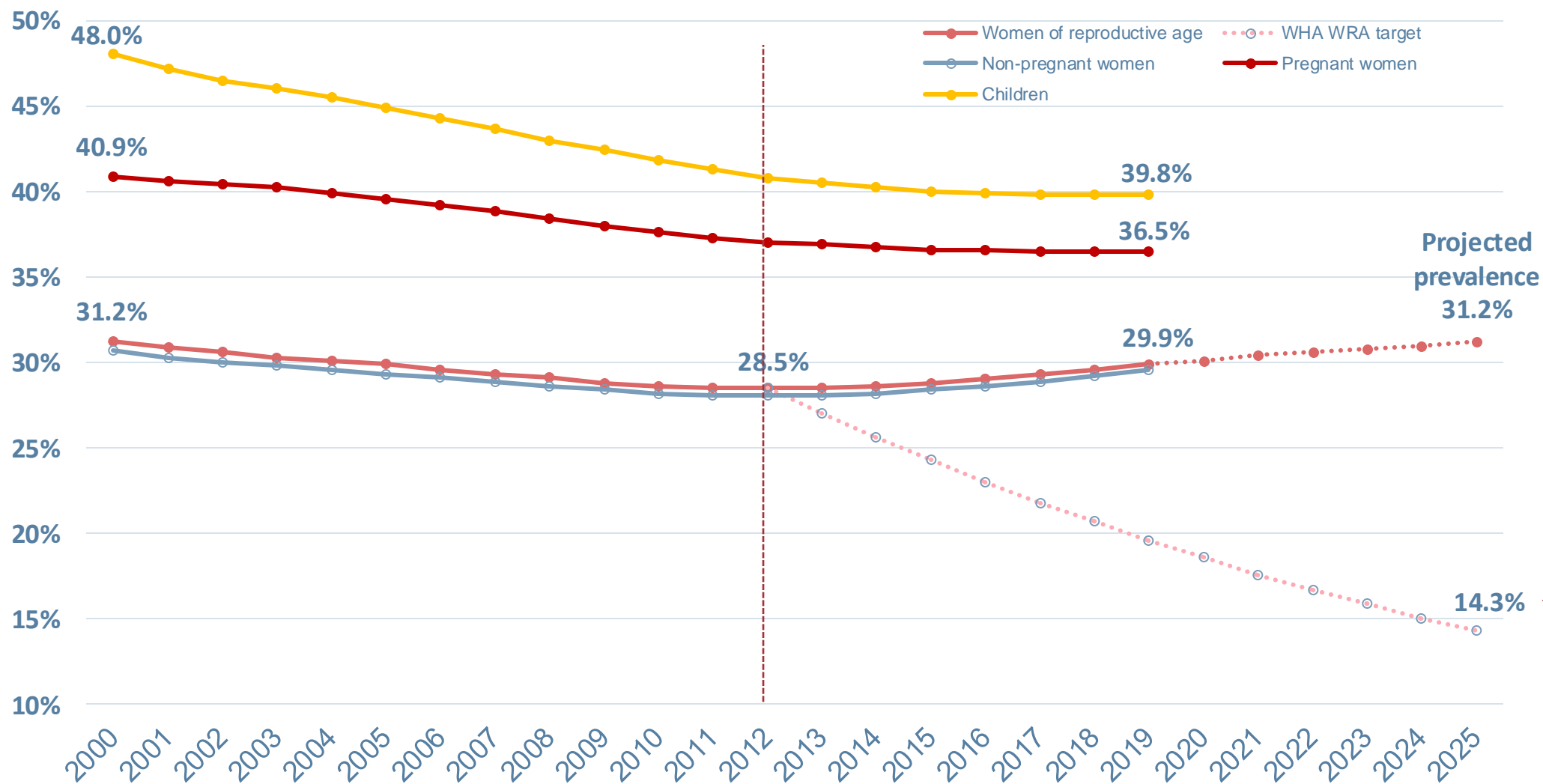
The **Cost** of Anemia inaction in South Asia for 2019



- **\$21B USD** (0.5% of total income) for children
- **\$11B USD** (0.2% of total income) in WRA



# Global trends in the prevalence of anemia - 2000-2019

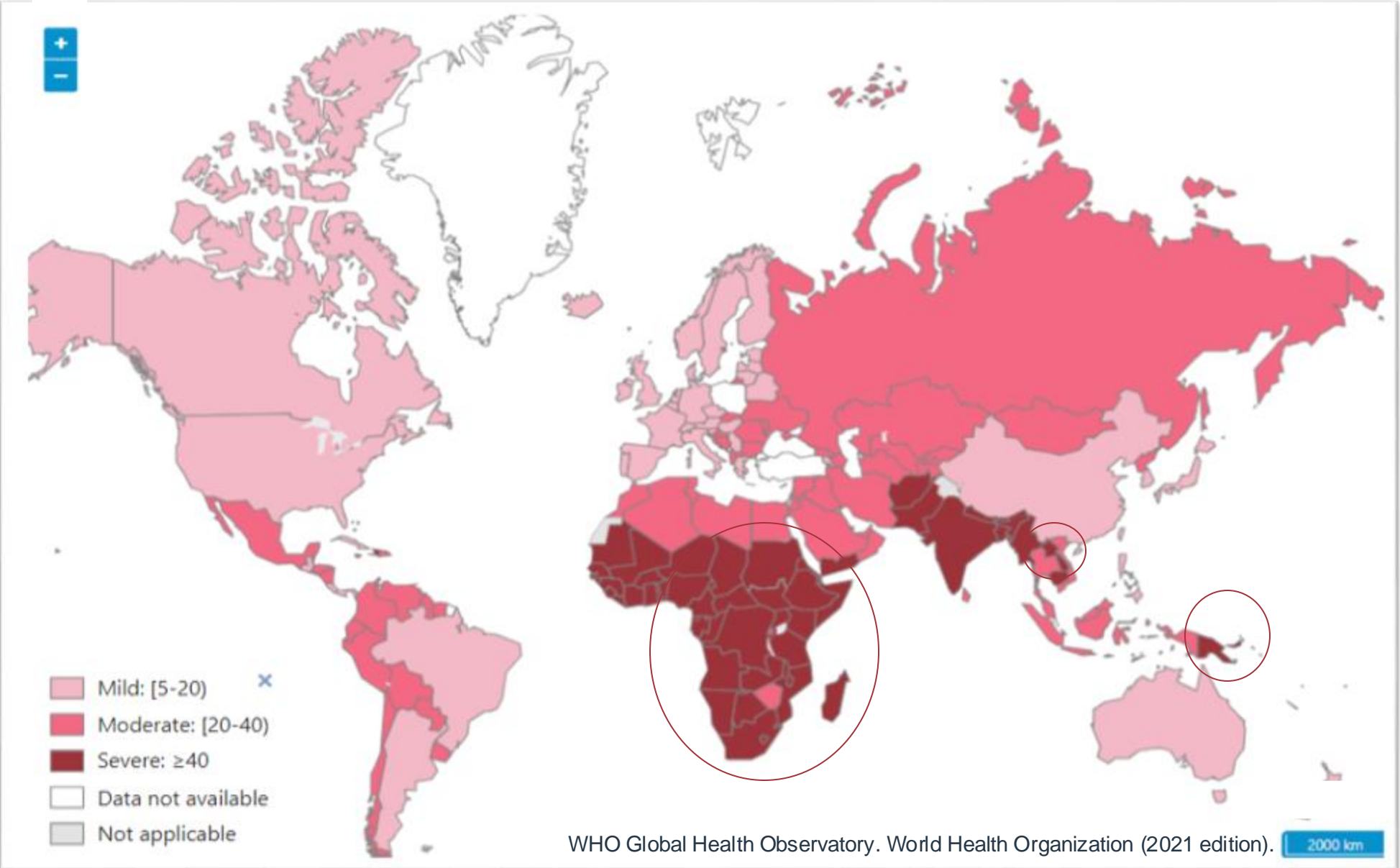


WHA 2025 target: 50% reduction of anemia in WRA





# Prevalence of anemia in children aged 6–59 months (%) (2019)



# Nutrition International footprint in Asia

Intervention	Asia			
	Bangladesh	India	Indonesia	Pakistan
<b>Adolescents and women</b>				
Large scale fortification	●	●	●	●
Universal Salt Iodization	●	●	●	●
Adolescent health and nutrition (WIFAS)	●	●	●	●
<b>Pregnant women and newborns</b>				
Maternal and newborn health and nutrition (IFA/MMS)	●	●		●
Birth and post-natal package		●		●





# Section 2

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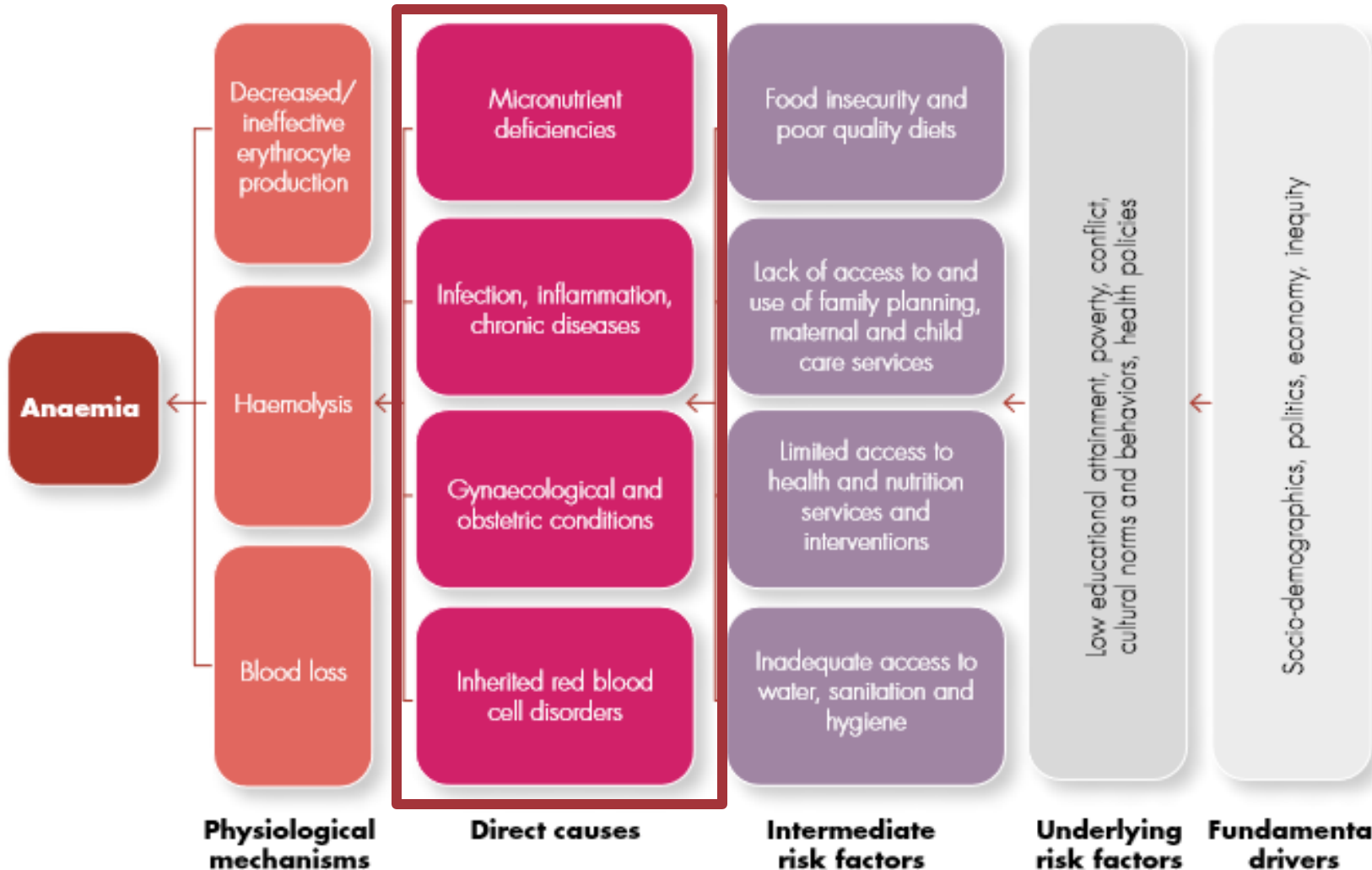
**Multifaceted etiology** of anemia and why **context-specific** interventions are needed.



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# Anaemia etiology



- Iron deficiency is the most common cause of nutritional anaemia
- Common knowledge is “iron deficiency anaemia contributes to 50% of burden”
- We now know that 10-60% of anaemia is due to iron deficiency, depending on burden of infection (higher burden -> lower proportion due to iron deficiency)



# Renewed approach at the global level

## WHO Comprehensive framework for action to accelerate anemia reduction

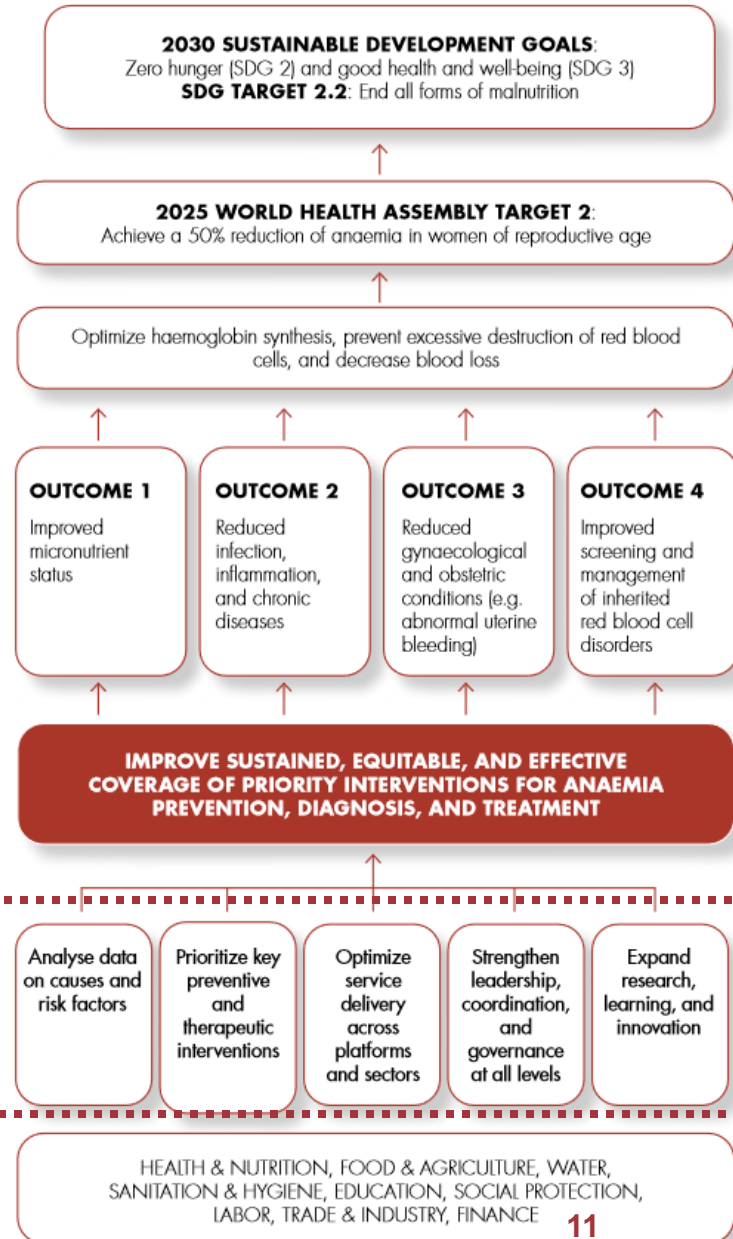
- Actions to prevent, diagnose, and manage anemia
- Tackling direct causes of anemia
- Proposing five action areas
- Listing contributing sectors
- **Operational Guideline (in progress)**



### PHYSIOLOGICAL MECHANISMS



### TACKLING THE DIRECT CAUSES OF ANAEMIA





# Section 3

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**Existing tools, information and data to design actions to effectively address anemia.**



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# Action area 1. Analyze data on causes and risk factors for anemia

## ACTION AREAS



Analyse data on causes and risk factors

Prioritize key preventive and therapeutic interventions

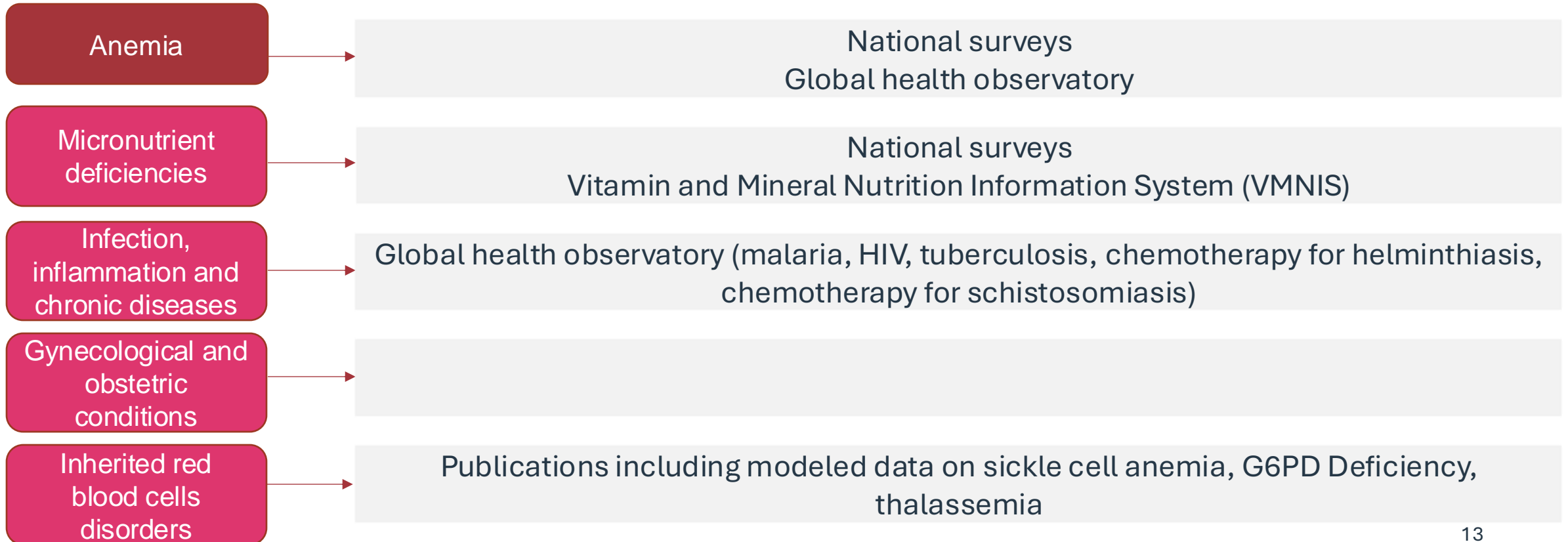
Optimize service delivery across platforms and sectors

Strengthen leadership, coordination, and governance at all levels

Expand research, learning, and innovation

## Data sources and information

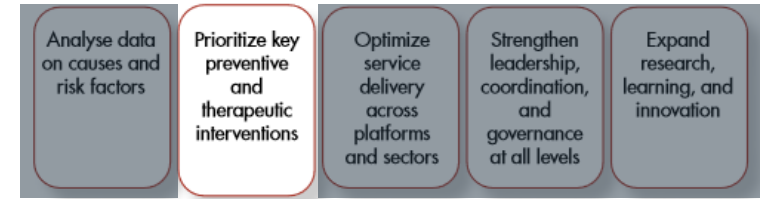
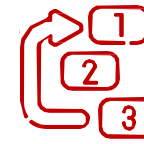
Direct causes





# Action area 2. Prioritize key preventive and therapeutic interventions

## ACTION AREAS



## Information resources

### ANNALS OF THE NEW YORK ACADEMY OF SCIENCES

REVIEW | Open Access | © | ⓘ  
**Review of intervention products for use in the prevention and control of anemia**  
 Daniel Lopez de Romaña, Alison Mildon, Jenna Golan, Maria Elena D. Jefferds, Lisa M. Rogers, Mandana Arabi  
 First published: 08 September 2023 | <https://doi.org/10.1111/nyas.15062> | Citations: 1

**Abstract**  
 Anemia remains a major public health problem, especially in low- and middle-income countries. The World Health Organization recommends several interventions to prevent and manage anemia in vulnerable population groups, including young children, menstruating adolescent girls and women, and pregnant and postpartum women. Daily iron supplementation reduces the risk of anemia in infants, children, and pregnant women, and intermittent iron supplementation reduces anemia risk in menstruating girls and women. Micronutrient powders reduce the risk of anemia in children. Fortifying wheat flour with iron reduces the risk of anemia in the overall population, whereas the effect of fortifying maize flour and rice is still uncertain. Regarding non-nutrition-related interventions, malaria treatment and deworming have been reported to decrease anemia prevalence. Promising interventions to prevent anemia include vitamin A supplementation, multiple micronutrient supplementation for pregnant women, small-quantity lipid-based supplements, and fortification of salt with iodine and iron. Future research could address the efficacy and safety of different iron supplementation formulations, identify the most bioavailable form of iron for fortification, examine adherence to supplementation regimens and fortification standards, and investigate the effectiveness of integrating micronutrient, helminth, and malaria control programs.

### Annex. WHO recommended interventions by outcome (see Web Annex for additional details on individual interventions)

Table A1. Recommended interventions to improve micronutrient status (Outcome 1)

Intervention	Context/setting (All settings vs targeted)	Platform	WHO guidance	Essential Medicine List
<b>SOCIAL PROTECTION</b>				
Promote gender equality and women's empowerment	All		(1,2)	-
Support income-generating activities for women (poorly evidenced)	All	Formal and informal workplaces	(3,4)	-
Support early child development (school completion, high-quality early childhood education and care, reduce child poverty)	All		(4)	-
<b>EDUCATION</b>				
Promote educational opportunities for women and girls, particularly those from marginalized and excluded groups	All	Schools, workplaces	(4)	-
Health care provider messaging about causes and consequences of anemia	All	Community health, primary care, ANC, PHC, hospitals		-
Social and behavior change communication strategies for anemia and relevant interventions	All	Community health, primary care, ANC, PHC, hospitals, schools, workplaces		-
<b>ENVIRONMENT &amp; WASH</b>				
Promote safe food production and handling (5 ways to safer foods)	All	Community health, schools, hospitals, workplaces	(5,6)	-



### Accelerating anaemia reduction A comprehensive framework for action

Web Annex. WHO recommendations for the prevention, diagnosis and management of anaemia



**Review of intervention products for use in the prevention and control of anemia**

**Accelerating anaemia reduction: A comprehensive framework for action**

**Web Annex. WHO recommendations for the prevention, diagnosis and management of anaemia.**

Lopez de Romaña, D., Mildon, A., Golan, J., Jefferds, M. E. D., & Arabi, M. (2023). *Review of intervention products for use in the prevention and control of anemia*. 1529(1), 42–60. <https://doi.org/doi:10.1111/nyas.15062>

WHO. (2023). *Accelerating anaemia reduction A comprehensive framework for action*. Geneva: World Health Organization. <https://www.who.int/publications/i/item/9789240074033>

Web Annex. WHO recommendations for the prevention, diagnosis and management of anaemia. In: *Accelerating anaemia reduction: a comprehensive framework for action*. Geneva: World Health Organization; 2023. Licence: CC BY-NC-SA 3.0 IGO [9789240074057-eng.pdf](https://www.who.int/publications/i/item/9789240074057-eng.pdf)

# Action area 3. Optimize service delivery across platforms and sectors

## ACTION AREAS



Analyse data on causes and risk factors

Prioritize key preventive and therapeutic interventions

Optimize service delivery across platforms and sectors

Strengthen leadership, coordination, and governance at all levels

Expand research, learning, and innovation

## Information resource

### Integrating and coordinating programs for the management of anemia across the life course

Mildon, A., Lopez De Romaña, D., Jefferds, M. E. D., Rogers, L. M., Golan, J. M., & Arabi, M. (2023). Integrating and coordinating programs for the management of anemia across the life course. *Annals of the New York Academy of Sciences*, 1525(1), 160–172. <https://doi.org/10.1111/nyas.15002>

## ANNALS OF THE NEW YORK ACADEMY OF SCIENCES

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### Integrating and coordinating programs for the management of anemia across the life course

Alison Mildon, Daniel Lopez de Romaña, Maria Elena D. Jefferds, Lisa M. Rogers, Jenna M. Golan, Mandana Arabi [✉](#)

First published: 17 May 2023 | <https://doi.org/10.1111/nyas.15002> | Citations: 1

SECTIONS

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#### Abstract

Anemia is a major global public health concern with a complex etiology. The main determinants are nutritional factors, infection and inflammation, inherited blood disorders, and women's reproductive biology, but the relative role of each varies between settings. Effective anemia programming, therefore, requires evidence-based, data-driven, contextualized multisectoral strategies, with coordinated implementation. Priority population groups are preschool children, adolescent girls, and pregnant and nonpregnant women of reproductive age. Opportunities for comprehensive anemia programming include: (i) bundling interventions through shared delivery platforms, including antenatal care, community-based platforms, schools, and workplaces; (ii) integrating delivery platforms to extend reach; (iii) integrating anemia and malaria programs in endemic areas; and (iv) integrating anemia programming across the life course. Major barriers to effective anemia programming include weak delivery systems, lack of data or poor use of data, lack of financial and human resources, and poor coordination. Systems strengthening and implementation research approaches are needed to address critical gaps, explore promising platforms, and identify solutions to persistent barriers to high intervention coverage. Immediate priorities are to close the gap between access to service delivery platforms and coverage of anemia interventions, reduce subnational coverage disparities, and improve the collection and use of data to inform anemia strategies and programming.

# Action area 4. Strengthen leadership, coordination, and governance at all levels

## ACTION AREAS



- Analyse data on causes and risk factors
- Prioritize key preventive and therapeutic interventions
- Optimize service delivery across platforms and sectors
- Strengthen leadership, coordination, and governance at all levels
- Expand research, learning, and innovation

## Cost of Inaction tool

https://www.nutritionintl.org/learning-resource/cost-inaction-tool/

### THE COST OF INACTION

**What is the economic cost of stunting, anaemia and low birthweight per year?**

Globally, the annual economic cost of the current level of undernutrition is more than US\$761B, representing 0.9% of the global income. The Cost of Inaction Tool, developed by Nutrition International in partnership with Limestone Analytics, estimates the annual economic costs associated with stunting, low birthweight and anaemia for over 140 countries and regional groupings.

[Learn more about the WHA targets](#)

View dataset    Indicator: Anaemia in children    Location: Global    → APPLY

### The Global Cost of Anaemia in children

The total annual global economic cost of the current level of undernutrition is US \$761B, equivalent to 0.9% of the global income.

ANNUAL ECONOMIC COSTS	
<b>\$161B</b>	economic costs per year (USD)
<b>0.2%</b>	Total Income

- Inaction
- Stunting
- Low birthweight
- ✓ Anaemia in children
- Anaemia in adolescent girls and women

- ✓ Global
- Sub-Saharan Africa
- South Asia
- Latin America & Caribbean
- North America

# Action area 5. Expand research, learning and innovation

## ACTION AREAS



- Analyse data on causes and risk factors
- Prioritize key preventive and therapeutic interventions
- Optimize service delivery across platforms and sectors
- Strengthen leadership, coordination, and governance at all levels
- Expand research, learning, and innovation

Evaluation method: All | OR | Region: All | OR | Age: All | OR | Gender and reproductive status: All | OR | Place of residence: All | OR  
 Disease targeted: All | OR | Genetic blood disorders: All | OR | Directly measures haemoglobin: All | OR | Includes aspects of women's empowerment: All | OR | Cost evidence: All | OR

Filter condition (between filters): AND | Update Chart

EGM

Total unique studies: 1974		Outcomes																	
Interventions		Primary outcomes		Inadequate nutrient absorption and utilization											Chronic disease/exposure and response to...				
		Anaemia	Haemoglobin	Iron	Folate	Vitamin A	Vitamin B6	Vitamin B12	Vitamin C	Vitamin D	Vitamin E	Copper	Zinc	Selenium	Riboflavin	Soil-transmitted helminths	Schistosomiasis	Malaria	
Direct causes	Chronic disease/exposure and response to infectious diseases	●●	●●	●●	●	●		●					●			●		●●●	●
	Gynaecological and obstetric conditions	●	●	●															
	Inadequate nutrient intake, absorption and utilization	●●●	●●●	●●●	●●	●●	●	●	●	●●	●	●	●●	●	●	●		●●	●●●
Intermediate risk factors	Food insecurity	●	●	●		●							●			●	●	●	
	Access/use of health/nutrition services and interventions	●	●	●	●	●		●		●								●	
	Inadequate family planning		●	●															



# Thank you!

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Questions/comments?



For over 30 years Nutrition International has been proudly leading the fight against malnutrition through the delivery of evidence-based high impact nutrition interventions in more than 60 countries.

Interested in learning more? Visit: [www.nutritionintl.org](http://www.nutritionintl.org)

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For additional inquiries on anemia please contact:

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**Join the Anemia Action Alliance!**

