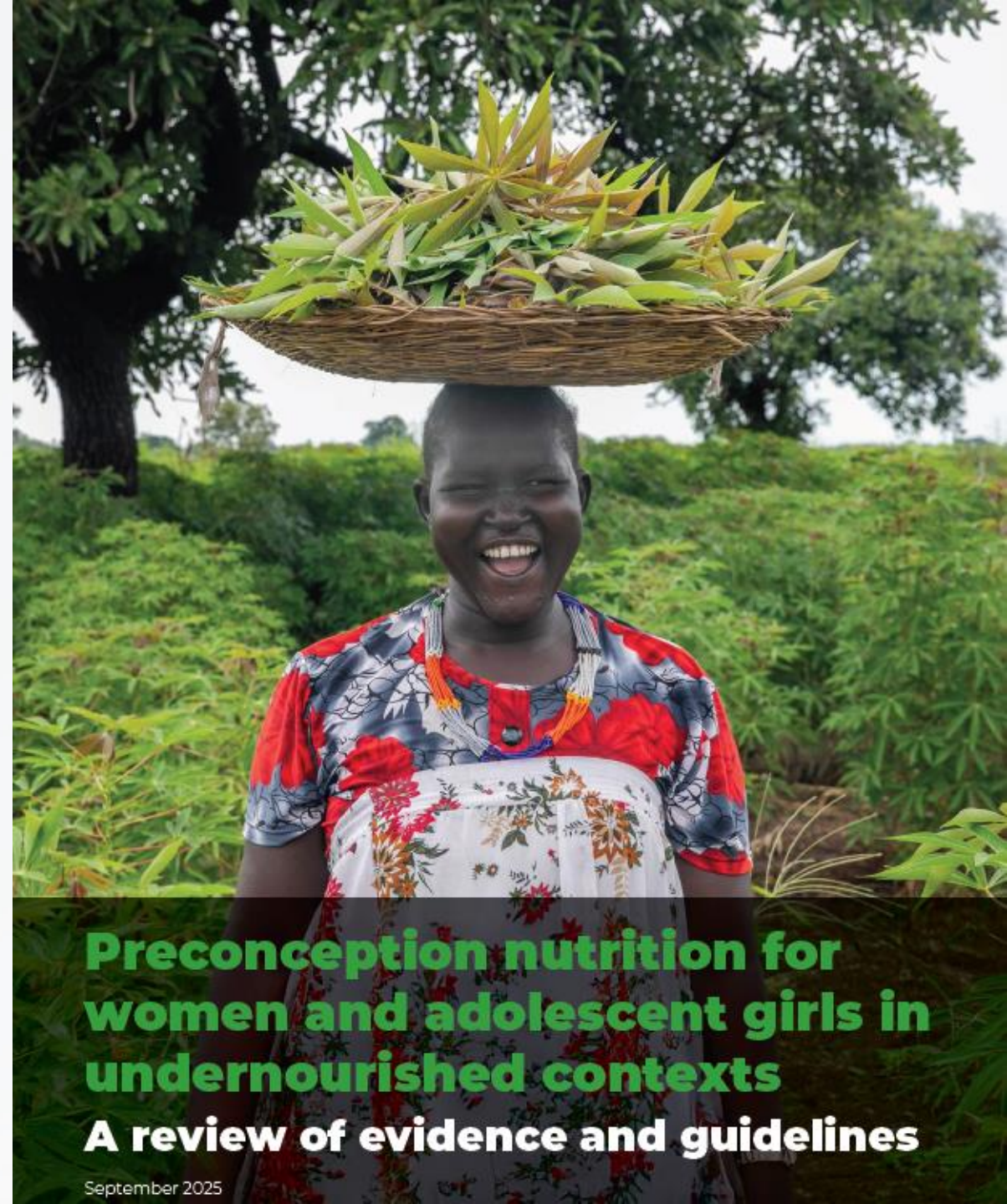


# ENN/UNICEF Prenconception Nutrition Report



**Irish Aid**  
An Roinn Gnóthaí Eachtracha agus Trádála  
Department of Foreign Affairs and Trade



**Prenconception nutrition for  
women and adolescent girls in  
undernourished contexts**  
**A review of evidence and guidelines**

September 2025

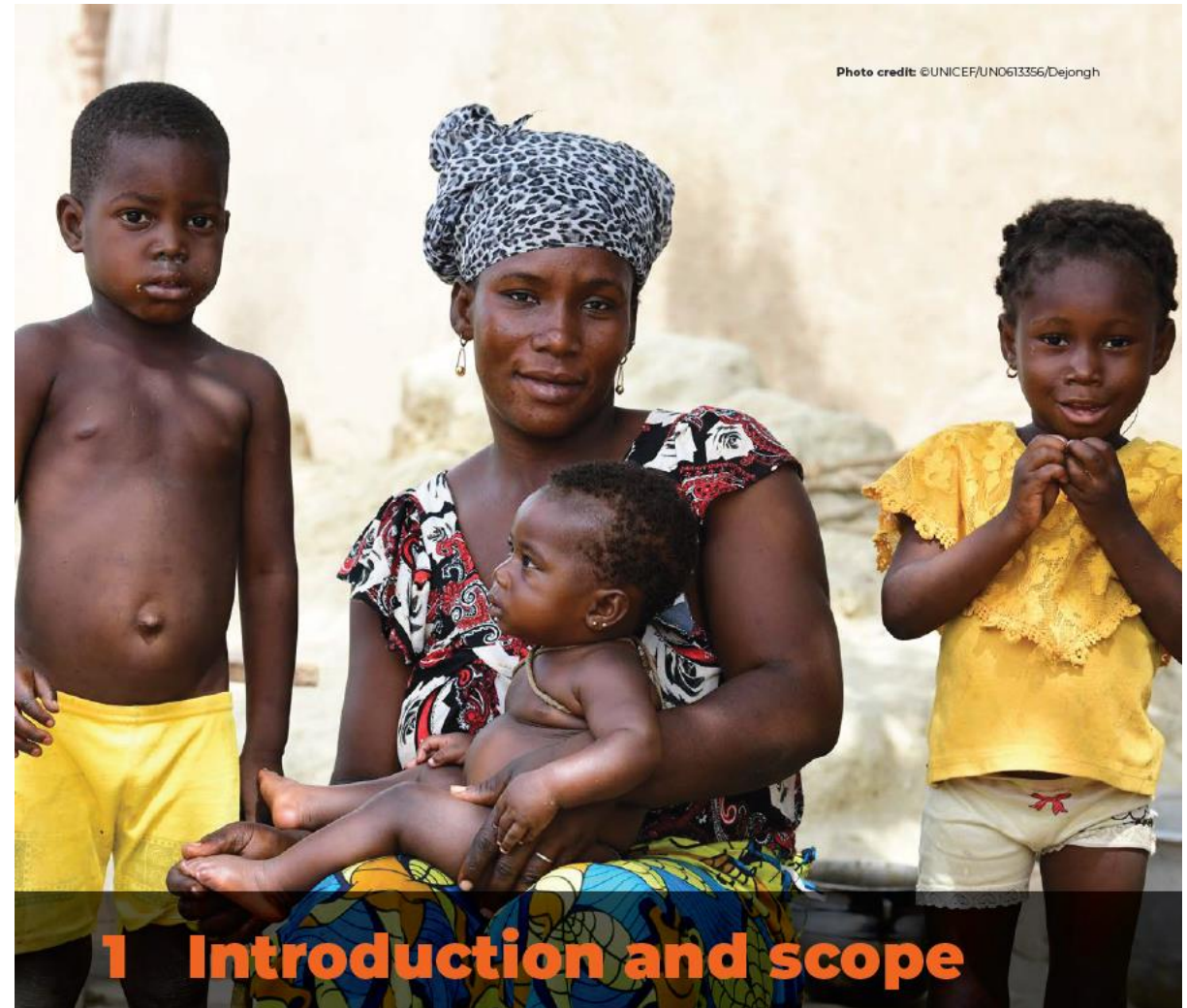
# What is preconception?



All women and adolescent girls have the right to nutrition.

Preconception refers to the time before pregnancy.

All non-pregnant women and adolescent girls, regardless of whether they become mothers.







# What did we do?



Evidence review focusing  
on nutrition-specific  
interventions in  
undernourished contexts

WHO guidelines relating to  
preconception nutrition

Gaps and  
recommendations



# Supplementation



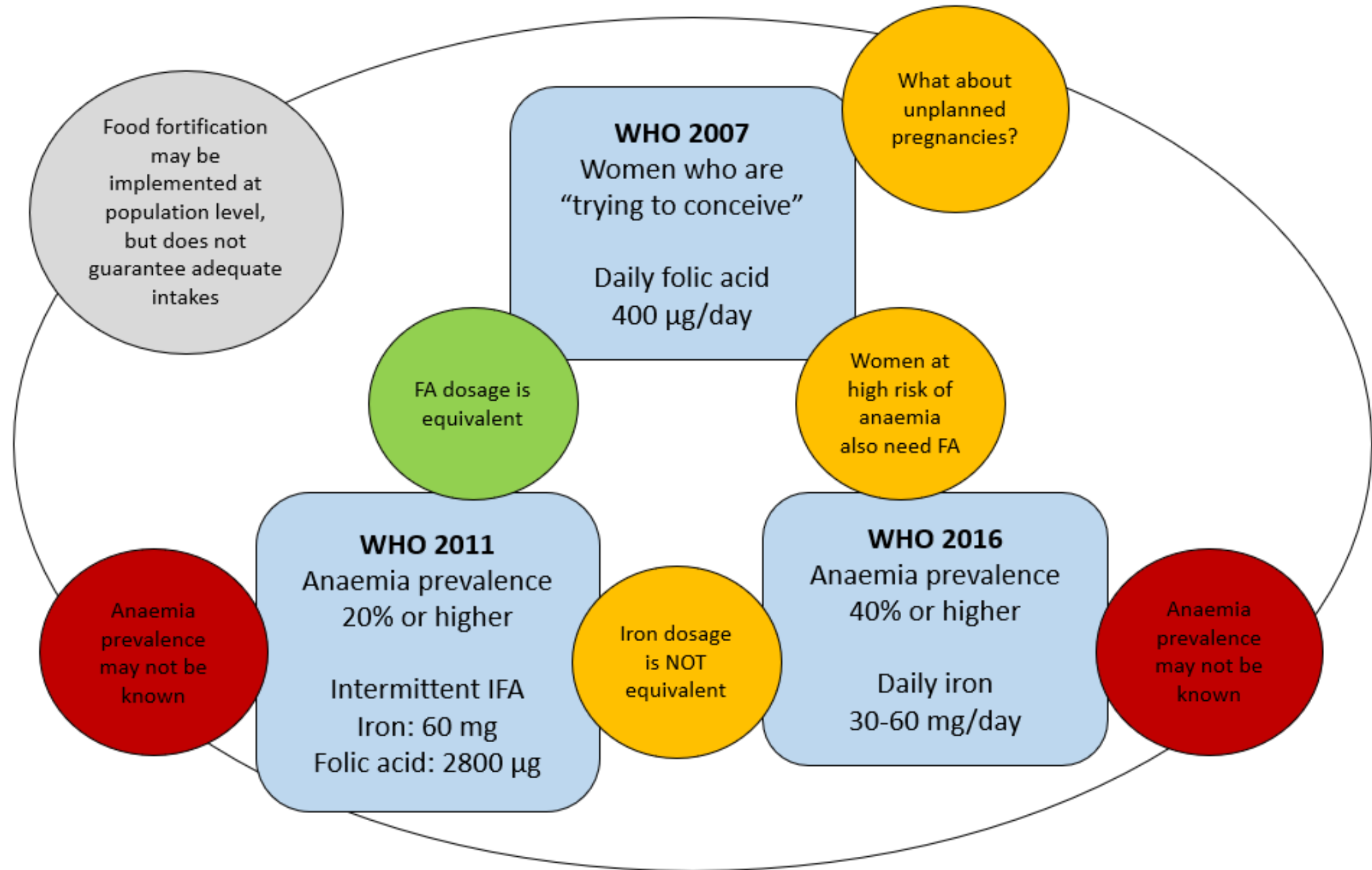
Iron and folic acid (IFA)  
supplementation

Multiple micronutrient  
supplementation (MMS)

Iodine supplementation

Small-quantity lipid-based  
nutrient supplements  
(SQ-LNS)







# Screening



Screening for anaemia

Screening for underweight



Photo credit: © UNICEF/UNIS470/Koza

**4 Preconception screening**

# Population level interventions



Promoting healthy diets

Food fortification





# Implementation examples



National policy

International and regional  
programme guidance

Programming

Health systems





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Nutrition  
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# “Strengthening Preconception Nutrition for Better Maternal and Child Health Outcomes: Sri Lanka’s Experience”

Dr Chandima Siritunga

Director- Maternal and Child Health

Family Health Bureau- Ministry of Health, Sri Lanka

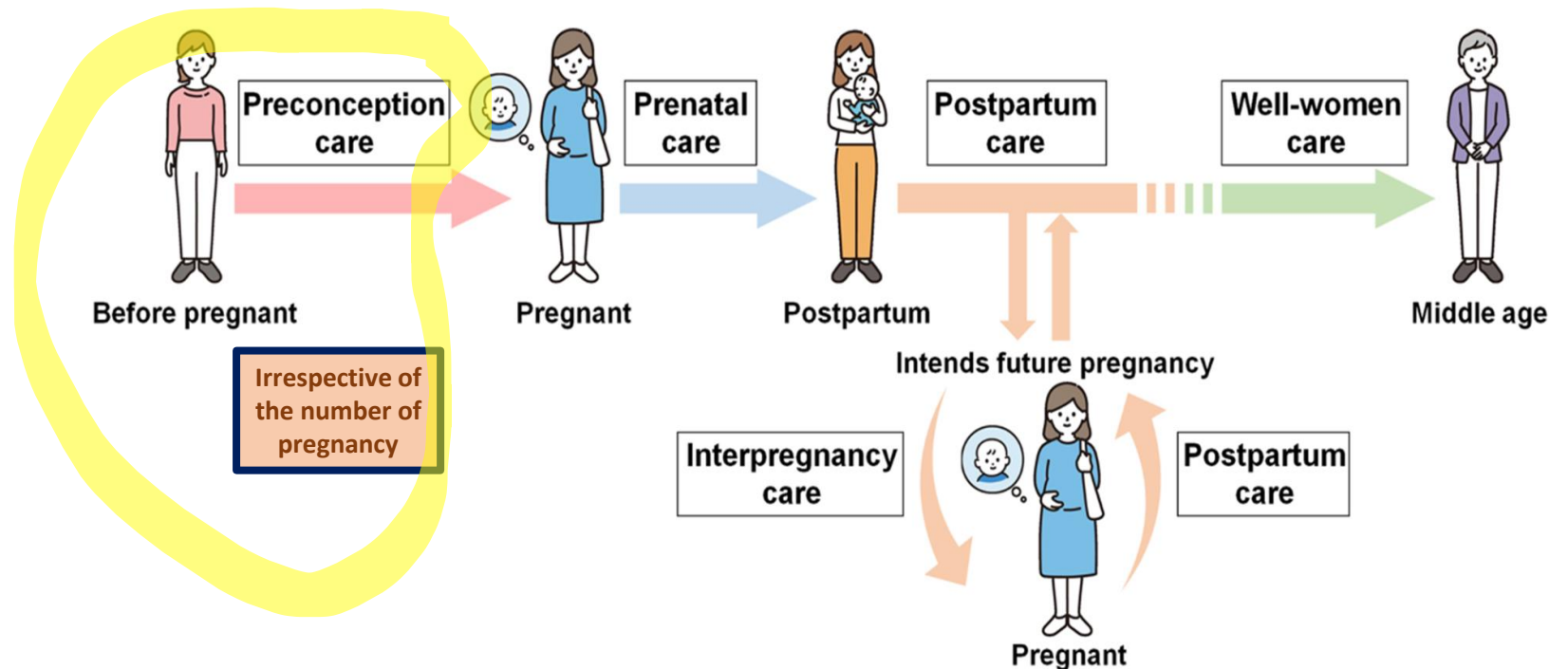




# Why Preconception Nutrition Matters?

**Preconception period** is crucial for:

- Reducing maternal anemia, underweight, and overweight
- Optimizing fetal growth and development
- Breaking the intergenerational cycle of malnutrition



# Sri Lanka – Country Context



- Maternal Mortality Ratio: 25 per 100,000 live births (2023, FHB)
  - Female literacy rate: 91%
  - Antenatal care coverage: >95%
  - Percentage of pregnant mothers registered out of registered births reported: 97% (2024, FHB)
  - Percentage of Pregnant mothers received Folic acid 3 months before conception : 68.7% (2024, FHB)
  - Prevalence of Maternal anemia (WRA): 22.3% (2023, FHB)
  - Percentage of Antenatal women with BMI <18.5 at booking visit: 14.7% (2023, FHB)
  - Percentage of Antenatal women with BMI > 25 at booking visit : 31.8% (2023, FHB)
- (Double burden of malnutrition: Thinness & overweight co-exist)



# National Policies & Strategic Frameworks

- National Nutrition Policy of Sri Lanka (2021-2030)**

Key strategic directions for policy priority area IV

10.4.1. Provision of pre-pregnancy care for the couple before planning their first child or to plan subsequent pregnancies and to enter pregnancy with optimum nutrition in a supportive environment.

- National Policy on Maternal and Child Health (2012)** – explicitly includes preconception care

Goal 1

Promote health of women and their partners to enter pregnancy in optimal health, and to maintain it throughout the life course

- National Strategic Plan for Maternal and Newborn Health (2020–2025)**

First 3 objectives focuses on Preconception Care

1. To increase the proportion of newly married couples receiving the preconception care package to 90% by 2025
2. To maintain the rubella immunization coverage at the time of pregnancy at 99% through 2025
3. To increase the proportion of pregnant women who have received preconceptional folic acid supplementation to 90% by 2025



# Preconception Care National Programme in Sri Lanka

- Sri Lanka's free health policy ensures all citizens have access to government-provided healthcare, including field health care
  - Preconception Care delivers as a national programme through the well-established field health care system of Sri Lanka
  - Medical Officers of Health (MOH), Public Health Midwives (PHMs), and the team delivers the service at grass root level
  - PCC is delivered as a care package targeting Newly Married Couples including legally and customarily married and living together heterosexual couples
  - Coordinate with Marriage Registrars to receive information on newly wedded couples
  - Information and Data managed through the eRHMIS of MoH
- 
- Estimated target population (Newly married) : 0.8% of the total population
  - Percentage of Newly Married Couples registered out of the estimate: 54.8% (2024, FHB)
  - PCC services package received by : 61.5% of registered couples(2024, FHB)



# Preconception Care Package (PCC) for Newly Married Couples in Sri Lanka

- **Objectives**

1. To improve the knowledge and awareness of the couple on reproductive health and to minimize unhealthy life styles such as alcohol and tobacco use, Gender-based Violence etc, in order to create a conducive behavioral change in the couple.
2. To improve the health and nutrition status of women maximally to ensure healthy pregnancy before they become pregnant
3. To identify, and correct or minimize the health problems of husband and wife before they achieve parenthood
4. To minimize maternal and infant mortality by reducing complications during pregnancy and delivery (to end preventable maternal and child deaths due to conditions which may before or during pregnancy)



# Preconception Care Package (PCC) for Newly Married Couples in Sri Lanka consist of..

- Assessment: Health, Nutrition, Behavioral and Environmental risk factors of the couple
- Health education and promotion
- Care provision and Follow-up

## Best Practices in relation to PCC Nutrition

All women planning to be pregnant guided to take folic acid daily at least 03 months before conception

All women guided to achieve and maintain the optimum BMI (18.5-24.9) for pregnancy

Promoting a diet composed of fruits, vegetables, whole grains, lean meats, and dairy products

All women are screened for Anemia and corrected before pregnancy





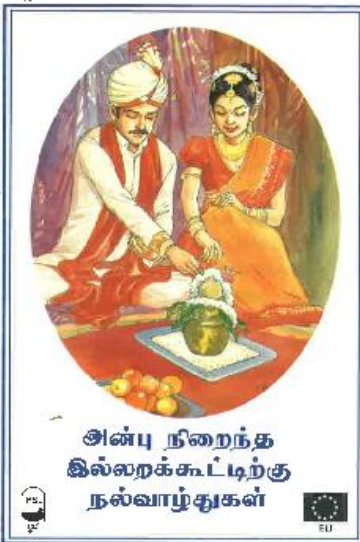
## SUPPORTING TOOLS AND GUIDANCE FOR PACKAGE FOR NEWLY MARRIED COUPLES:

1. **“Service Package for Newly Married Couples General circular FHB/GWH/2018/08 dated 2018/03/06”** to be adhered by the service providers
2. **The invitation card** to be handed over by the marriage registrar at the time of marriage registration
3. **Preconception screening tool** to be filled by the couple and to be assessed by the PCC care providers
4. **BMI Calculator** to be used at the physical assessment
5. **“Yuga Diviyata Athwelak” DVD** to be used during the education sessions
6. **“THE TURN” DVD** to be used in Sexuality education session
7. **“Our best wishes for your blissful home/ Sonduru Kedella” booklet** to be referred by the couple
8. **“Nawa divi suwa sathkaara sewaya salaseema pinisa saukhya kaaryamandalaya sandaha wu maargopadesha athpotha” hand book** for the guidance of healthcare providers

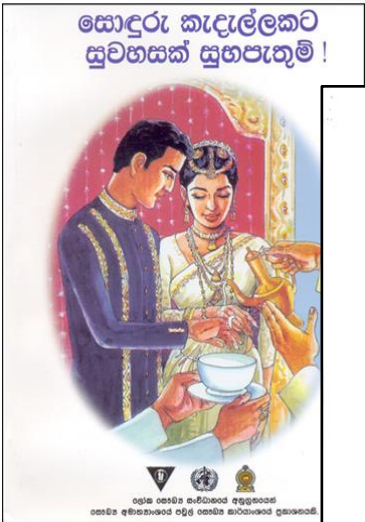




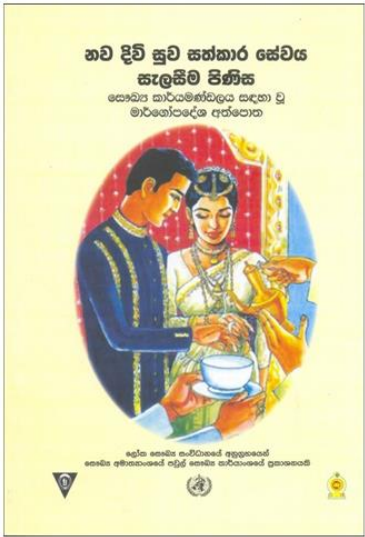
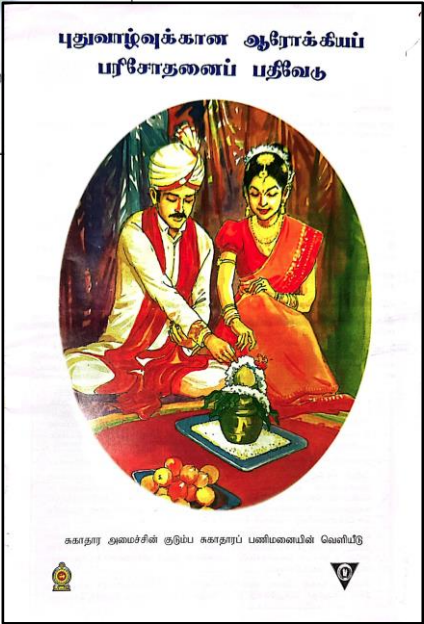
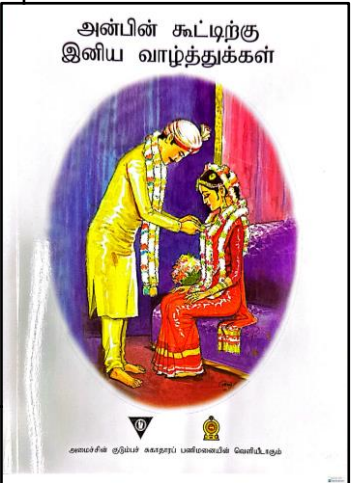
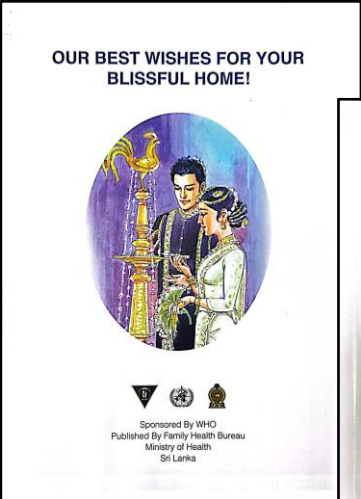
Invitation card



PCC check list/  
screening tool



Hand book for the couples



Guideline for the  
service providers



BMI calculator

Tools used

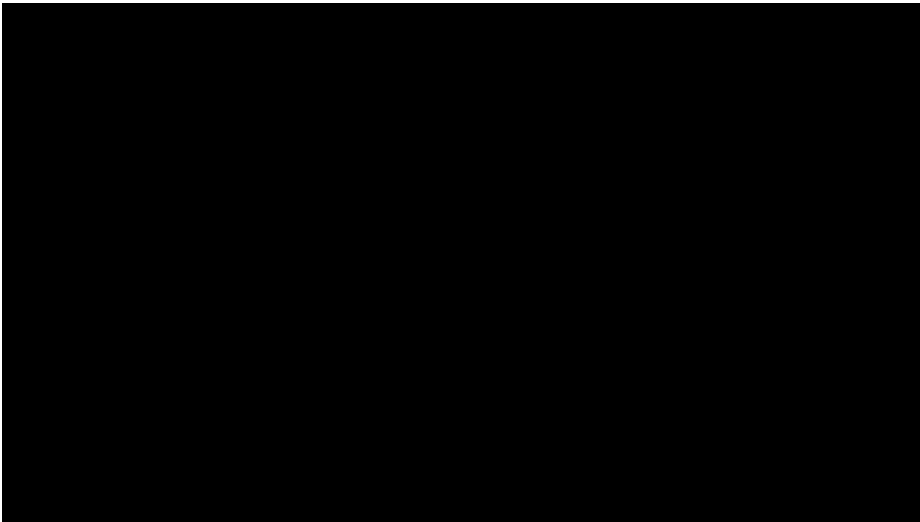


# Topics discussed at health education sessions

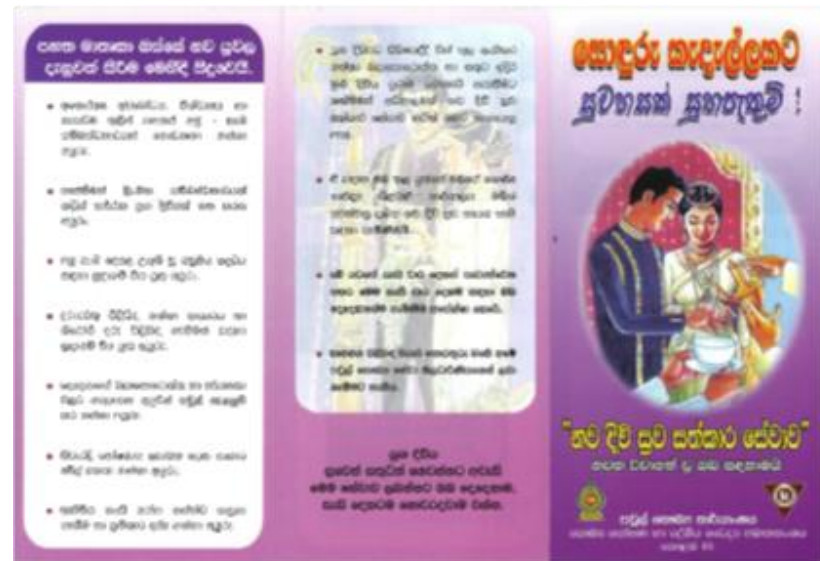
1. Sexuality and Sexual Relationship
2. Sexually transmitted diseases
3. Well planned family
4. Preconception nutrition
5. Good living and mutual understanding
6. Family free of violence
7. Male participation and parenthood
8. Before conception







IEC Material used: Open invitation for the newly married couples to access Preconception Care services package





# Challenges and Way Forward

- Low coverage (<60%) of the target population
- Challenge of limited male involvement in preconception health



Regular public awareness campaigns

- Resource gaps to facilitate basic investigations from the state health system
- Resource gaps to provide micro-nutrient supplements through the state health system



Discussions are ongoing to facilitate basic investigations and micro-nutrient supplements from the state health system

- Lack of Pre-pregnancy care during subsequent pregnancies



Introducing an Inter-Pregnancy Care Package (at development stage)

Strengthening intersectoral collaboration between health, education, agriculture, economic empowerment ect. to support vulnerable and under-served populations

# Conclusion

“Preconception nutrition is a foundational investment.

Sri Lanka’s model—centered on community-based care, policy integration, and front-line engagement—offers valuable lessons, but also highlights the need for continuous adaptation.”



# Thank you!





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# Advancing Preconception Nutrition in South Asia

UNICEF Regional Office South Asia

17 September 2025



# The Need:

1

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South Asia houses 40% of the world's low birth weight babies.

3

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Women are entering pregnancy with multiple nutritional risks

2

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Slow reduction in maternal underweight, increase in maternal anemia and obesity.

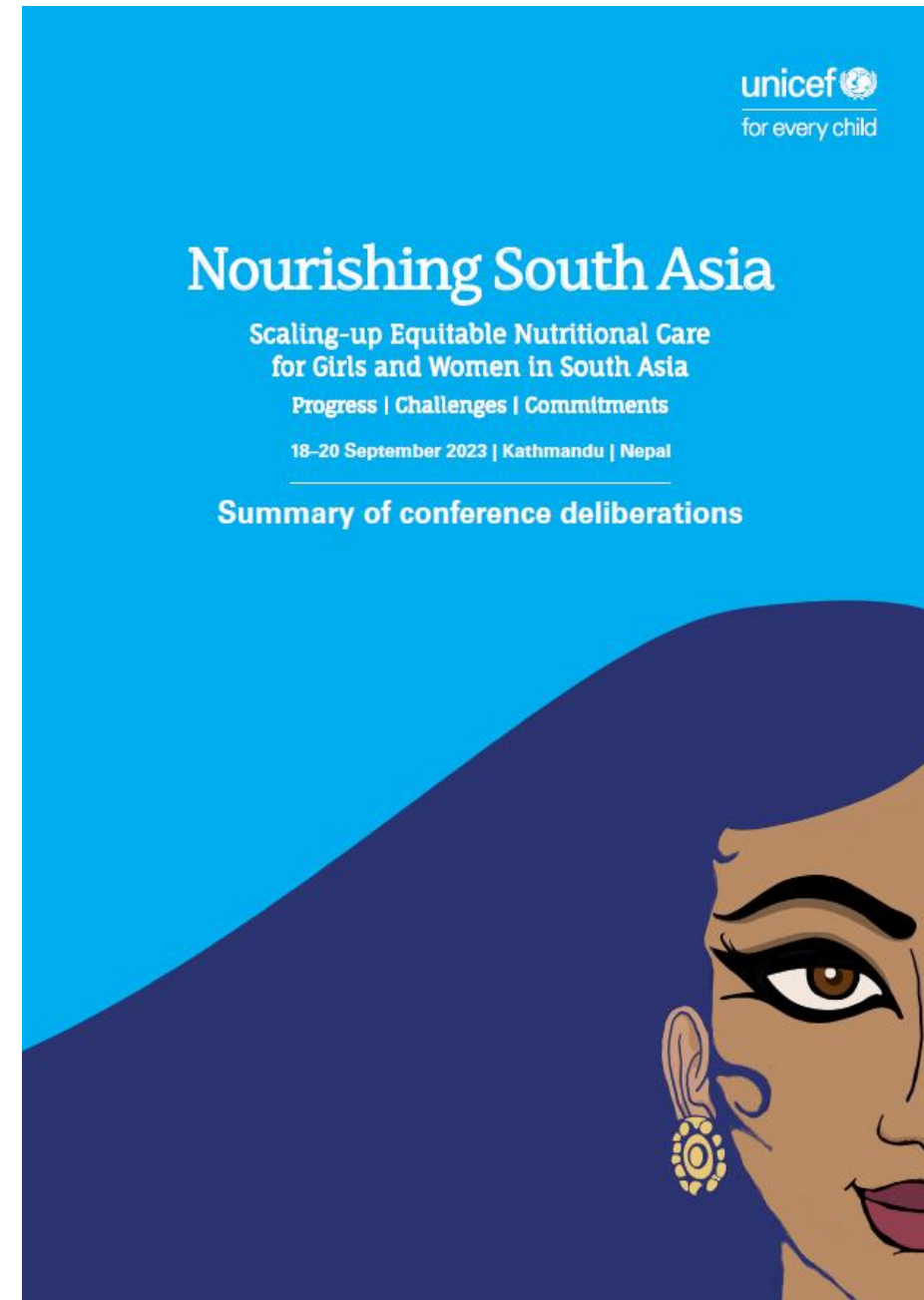
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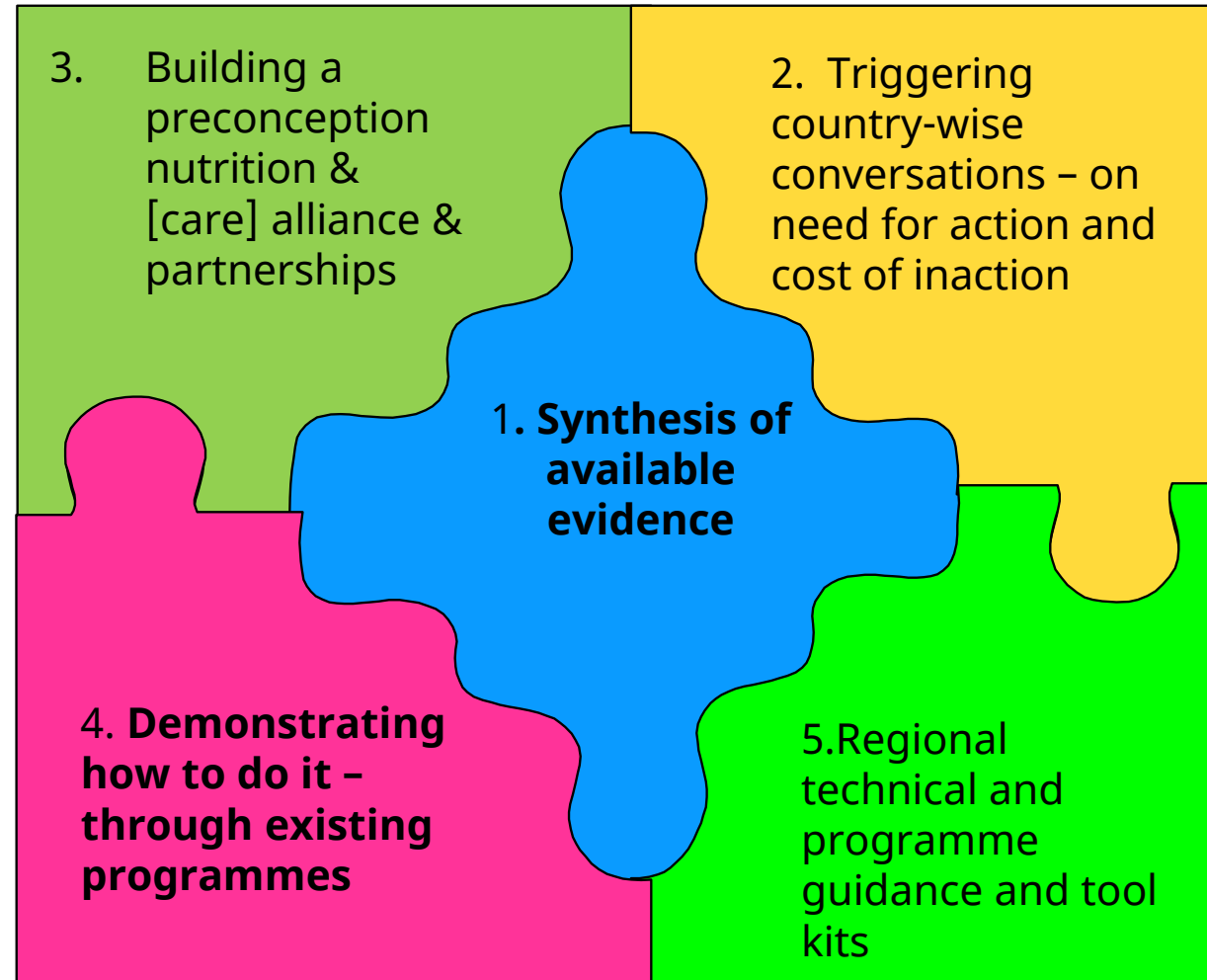
Several knowledge gaps preventing integrating preconception nutrition interventions at-scale

# 2023 Nourishing South Asia Girls and Women's Nutrition Conference recommendation

**Bridge knowledge gaps  
for strengthening  
delivery of preconception  
nutrition services** in South  
Asia in national policies and  
programmes.



# What we have done to galvanize momentum for preconception nutrition in South Asia



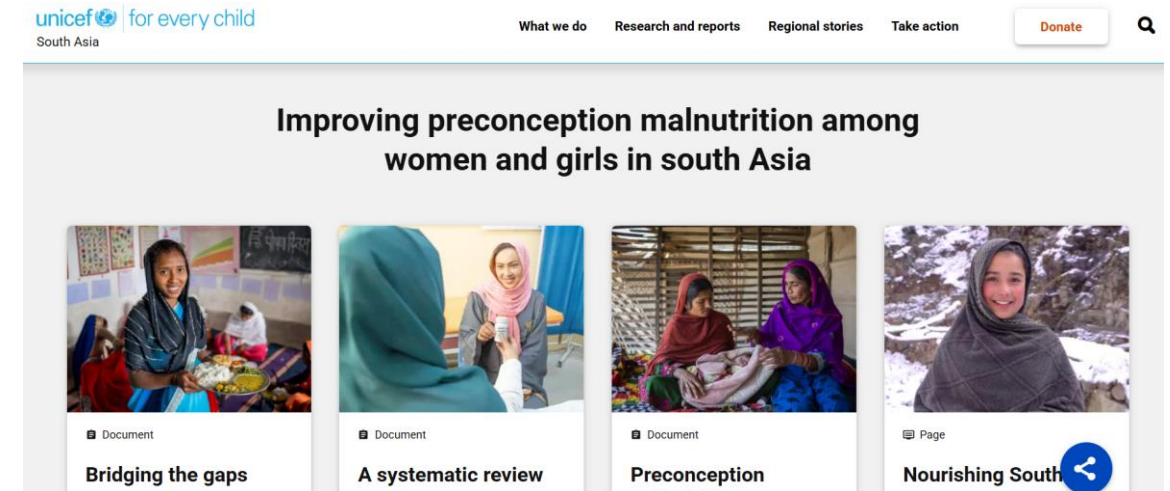


# 1. Addressing Knowledge Gaps

Several knowledge gaps stand in the way of improving preconception nutrition in South Asia.

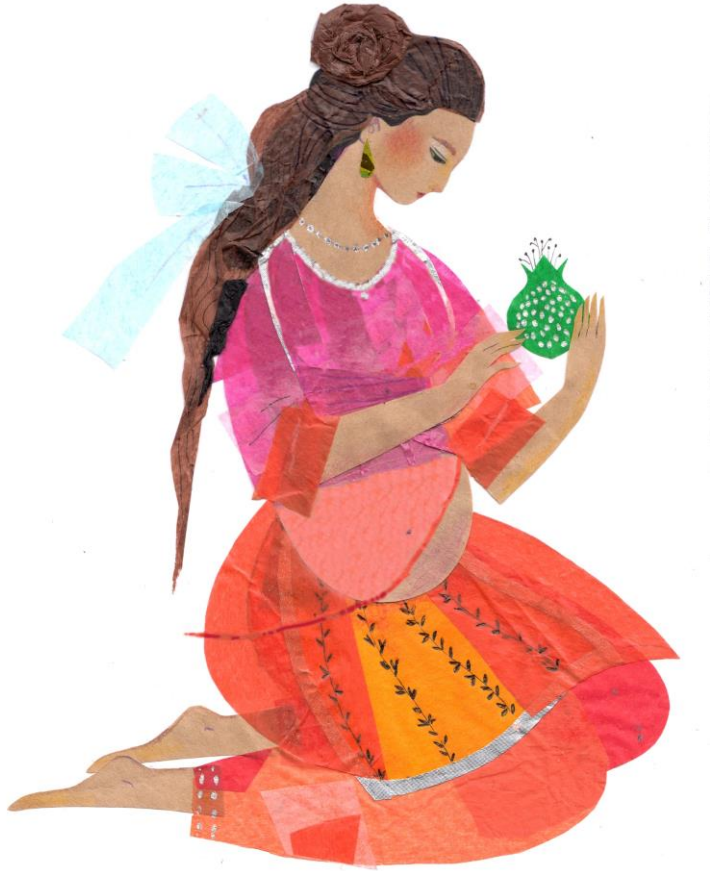


<https://www.thelancet.com/journals/lansea/issue/current>



<https://www.unicef.org/rosa/>

# UNICEF ROSA and partners developed four research papers, published in the Lancet Regional Health-Southeast Asia May 2025 Issue:



1. Preconception malnutrition among women and girls in South Asia: **Prevalence, determinants and association** with pregnancy and birth outcomes
2. Effects of preconception nutrition **interventions** on pregnancy and birth outcomes in South Asia
3. **Policies and programmes** to improve preconception nutrition in South Asia
4. **Research gaps and priorities** for advancing preconception nutrition in South Asia

The study findings inform the recommendations and **Technical brief** for improving nutrition for women – before, between, and beyond pregnancy in South Asia.

# Paper #1: State of preconception nutrition in South Asia

## OBESITY & UNDERWEIGHT



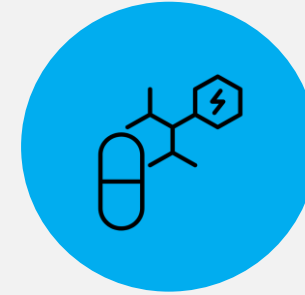
- Among married, non-pregnant women aged 15–49,
- 1 in 3 is overweight
- 1 in 10 is underweight
- Poor and rural women are more likely to be underweight, less to suffer from obesity.

## ANEMIA



- Among non-pregnant women, 1 in 2 is anemic
- Wide variations by age, location, education and reproductive history.
- Little or no improvement over time despite intervention efforts.

## MICRONUTRIENT DEFICIENCIES



- Micronutrient deficiencies (iron, zinc, and vitamin A, D and B12) are widespread across the region.
- Prevalence varies widely.

- ❑ Clear inequities: vulnerable and underserved women are most affected.
- ❑ Large variations and gaps in data on preconception nutrition and links with birth outcomes.

# Paper #2: What works?

- ❑ Growing evidence on preconception interventions globally, but evidence in South Asia is limited.
- ❑ Most promising interventions in reducing low birthweight and small-for-gestational-age babies in South Asia:
  - combine health, nutrition, psychosocial support & WASH
  - start >90 days before conception
- ❑ Women need access to nutritious foods. Micronutrients alone are not enough:
  - Food supplementation that started >90 days before conception and continued into pregnancy increased birth weight.
  - Micronutrient supplementation alone did not improve birth size.





# Paper #3: Policies and programmes

- WHO (2013) and UNICEF (2022) have global guidelines for preconception nutrition, encompassing 22 interventions across five areas:



- All eight countries have policies in place that could support preconception nutrition interventions.
- No country has programmes that deliver the full package of 22 recommended interventions.
- Even when countries have policies *and* programmes to deliver preconception interventions, they face barriers that limit quality delivery:
- i.e. leadership and governance; budget allocation and financing; service delivery; data systems; workforce capacity; and essential supplies.

# Case studies

## Sri Lanka's Service Package for Newly Married Couples:

### *Integrating preconception care into existing systems*

- Newly married couples are invited by the Marriage Registrar
- Couples attend two preconception care sessions where they are assessed for nutritional risks and receive counselling, management and referrals.
- Results:
  - 60% of newlyweds register
  - 52% receive folic acid
  - 91% report having planned pregnancies

## India's Swabhimaan programme:

### *Leveraging women's self-help groups*

- SHG members reach out to newlywed women to:
- Engage in income generation activities
- Receive counselling on food, nutrition, health and WASH services and practices, including preconception nutrition



## 2. Regional expert convening to rally regional stakeholders on need for action and cost of inaction

Nourishing South Asia

### **Advancing Preconception Nutrition in South Asia**

21–22 November 2024  
New Delhi, India



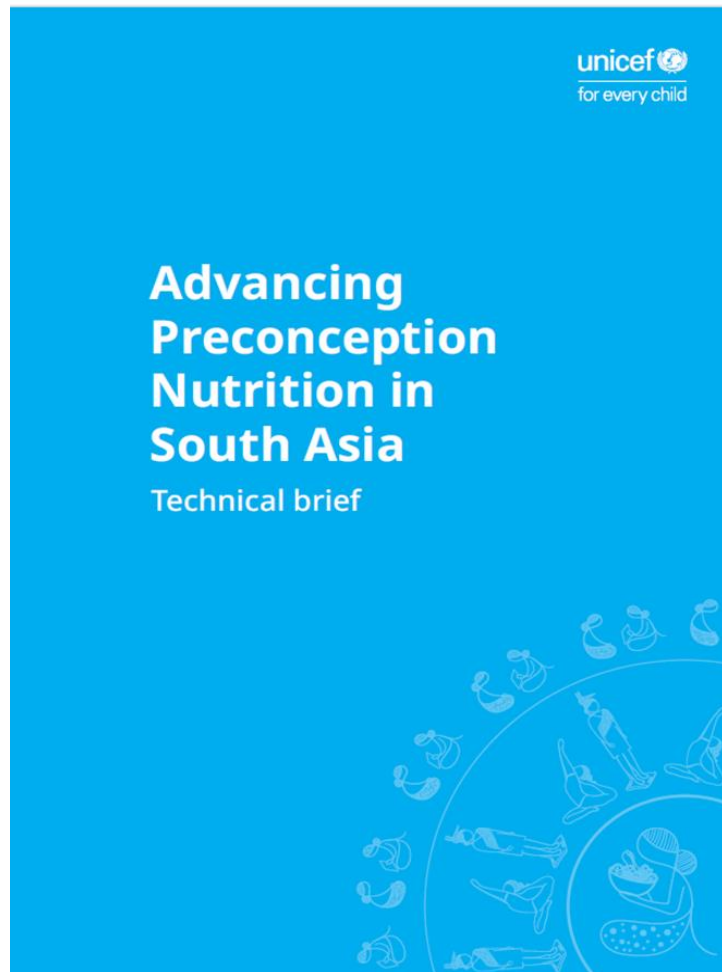
### 3. South Asia Preconception Nutrition Collective:



ROSA & Country  
Offices



# 4 & 5. Technical Brief : Guidance and toolkit to support delivery



Outlines five actions and a 5X5 framework for program managers:

1. **Assess women's risk factors** by asking questions (e.g., history of illness), measuring indicators (e.g., weight), observing clinical signs (e.g., anaemia), conducting tests (e.g., hemoglobin)
2. **Give** all women, even low risk women, essential preconception care including iron folic acid/micronutrients, folic acid, deworming, vaccinations and a social protection scheme
3. **Counsel** all women, even low risk women, on relevant topics ranging from healthy eating and physical activity to family planning and birth preparedness
4. **Classify women's** risk into low, moderate or high based on the assessment
5. **Tailor actions to women's risk levels.**



# Call to action

There remain significant gaps in the evidence guiding our understanding of the preconception problem in South Asia and how to best intervene.

We call on clinicians, policy makers, programme designers, implementers, and researchers to:

1. Clearly **define** the preconception period and target population.
2. Create a screening tool to identify nutritional risk and provide **tailored, risk-based** interventions.
3. Evaluate the **effectiveness** of various preconception interventions on women's outcomes and in humanitarian setting.
4. Integrate interventions and indicators into existing **health systems** to reach more women and track progress.
5. Leverage **innovative platforms** such as marriage registration systems to reach women who may be missed by traditional health systems.



**Thank you!**





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Nutrition  
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**unicef**



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Department of Foreign Affairs and Trade

# ENN/UNICEF Technical Background on Preconception Nutrition



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Department of Foreign Affairs and Trade





# Technical report overview



A companion piece to our main report.

Provides a more detailed exploration of the complex concepts and processes underpinning preconception nutrition

Audience: readers who would like more technical background to the topic.



Photo credit: @WFP/Vilakhone Sipaseuth



# What do we cover?

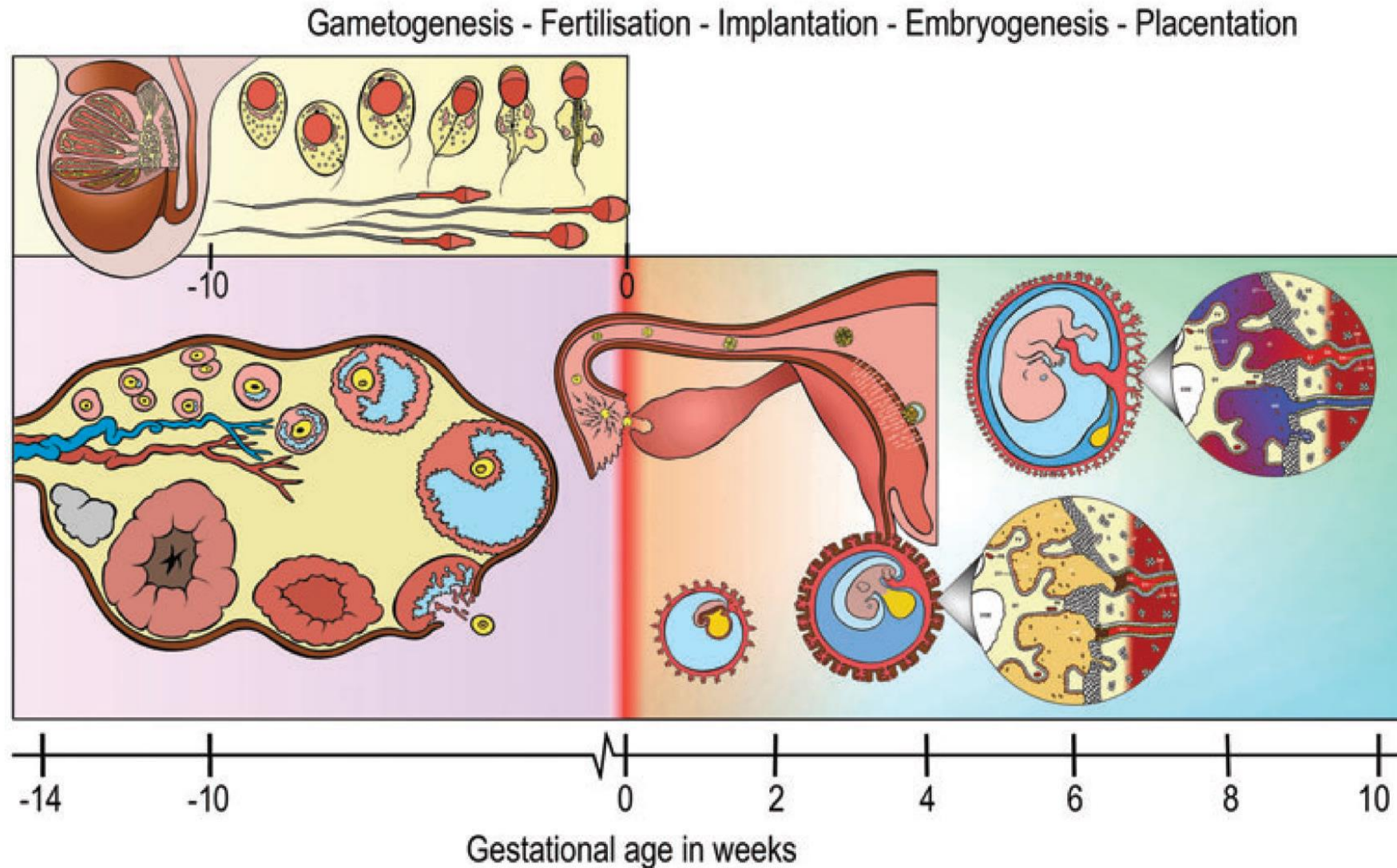


- Overview of key biological processes during the preconception period
- Introduction to the developmental origins of health and disease (DOHaD)
- Evidence on the critical role of preconception nutrition in shaping lifelong health
- Exploration of key mechanisms / pathways
- Implications for intergenerational health and policy-relevant nutrition strategies



Photo credit: ©UNICEF/UN0640711/Dejongh

# A biological definition of preconception



Source: Steegers-Theunissen R et al

# Developmental origins of health and disease



“What happens in the womb lasts a lifetime”

“You are what your mother ate”

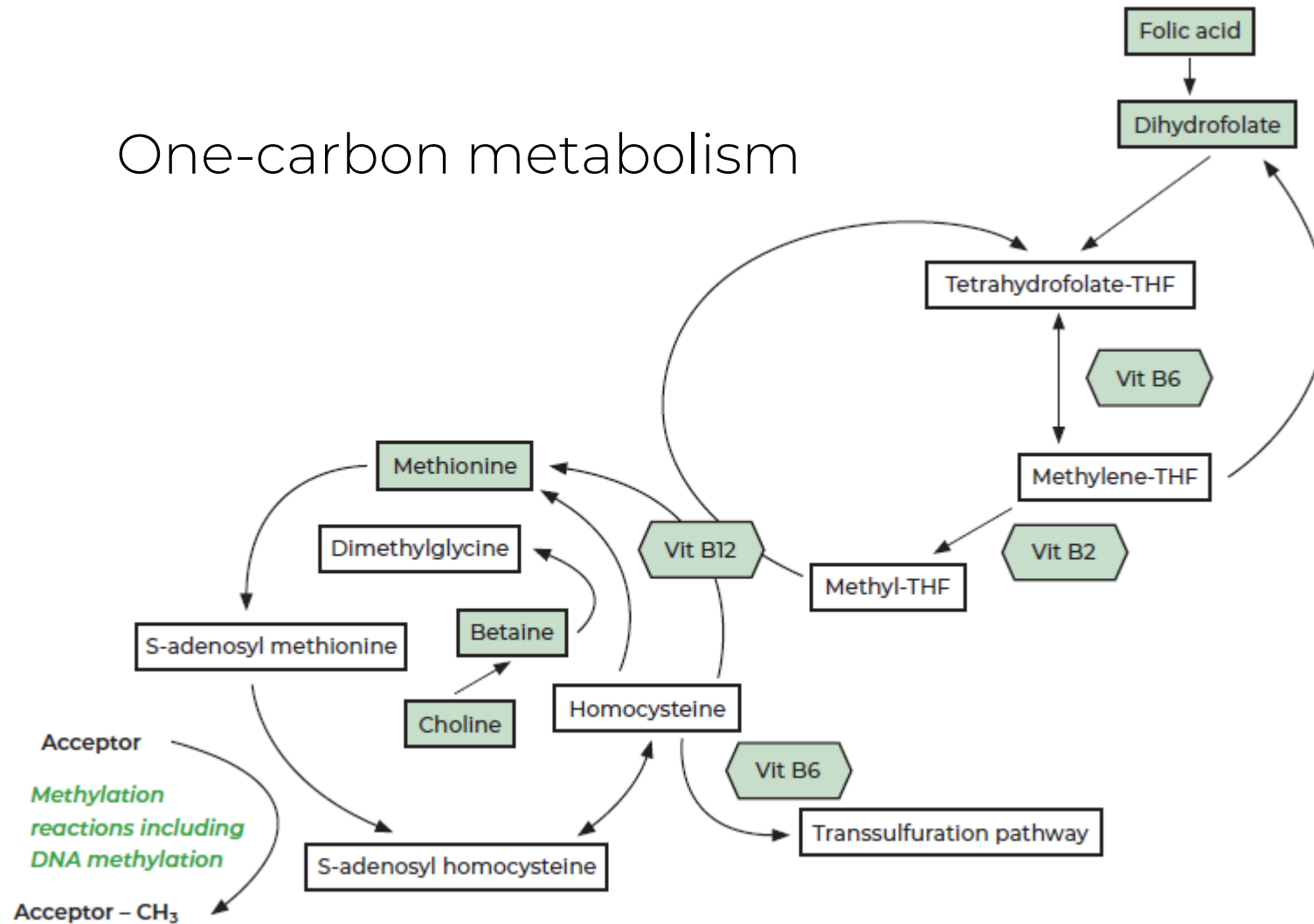
Decades' worth of research has described how adverse exposures, including suboptimal nutrition, during critical periods of foetal and infant development are associated with altered growth and development.

- Famine & seasonality studies
- Case study from The Gambia

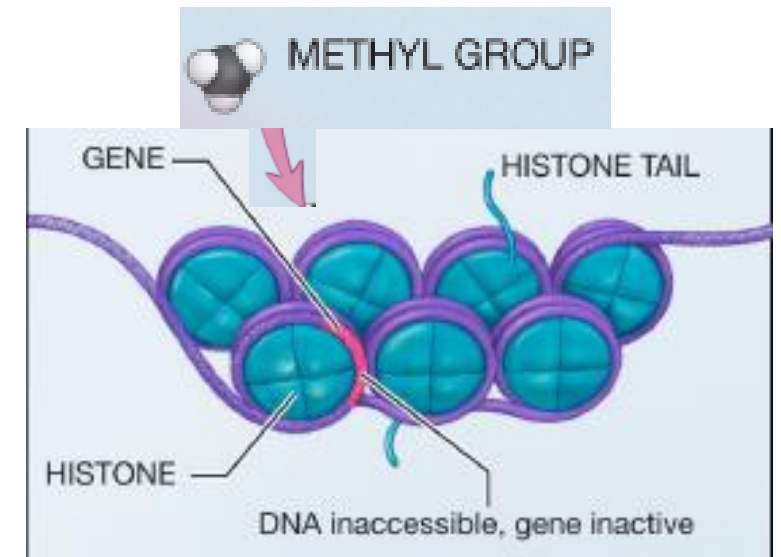
## Potential mechanisms



# One-carbon metabolism



# Epigenetics



# Agouti mouse example



- Pregnant mice were fed diets with varying levels of B12, folate, betaine, and choline
- Higher micronutrient intake led to increased DNA methylation near the agouti gene
- Resulting pups had browner fur, were leaner, and showed lower risk of insulin resistance
- All pups shared the same genotype but showed different phenotypes based on maternal diet



Waterland RA & Jirtle R L. Molecular and Cellular Biology. 2003;23(15): 5293–5300.



# Conclusion



- Preconception nutrition influences biological processes that shape lifelong and intergenerational health
- Early nutritional investment is critical for improving maternal, foetal, and population outcomes
- Insights strengthen the case for preventive strategies in policy and programming



With thanks to co-authors Heather, Susan and Emily, and MRC Gambia's work in this field.



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