



World Vegetable Center

The views expressed in this material are the views of the author/s and do not necessarily reflect the views or policies of the Asian Development Bank, or its Board of Governors, or the governments they represent. ADB does not guarantee the accuracy of the data included in this presentation and accepts no responsibility for any consequence of their use. The countries listed in this presentation do not imply any view on ADB's part as to sovereignty or independent status or necessarily conform to ADB's terminology.

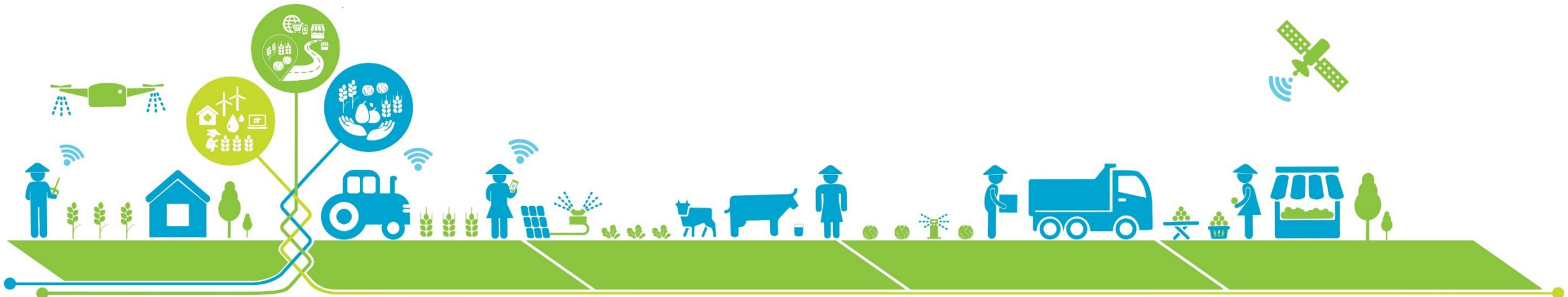
Asia-Pacific Rural Development and Food Security Forum 2022

Battling Climate Change and Transforming Agri-food Systems

22-24 March 2022

Mandana Arabi, MD, PhD

Vice President Global Technical Services and Chief Technical Adviser, Nutrition International

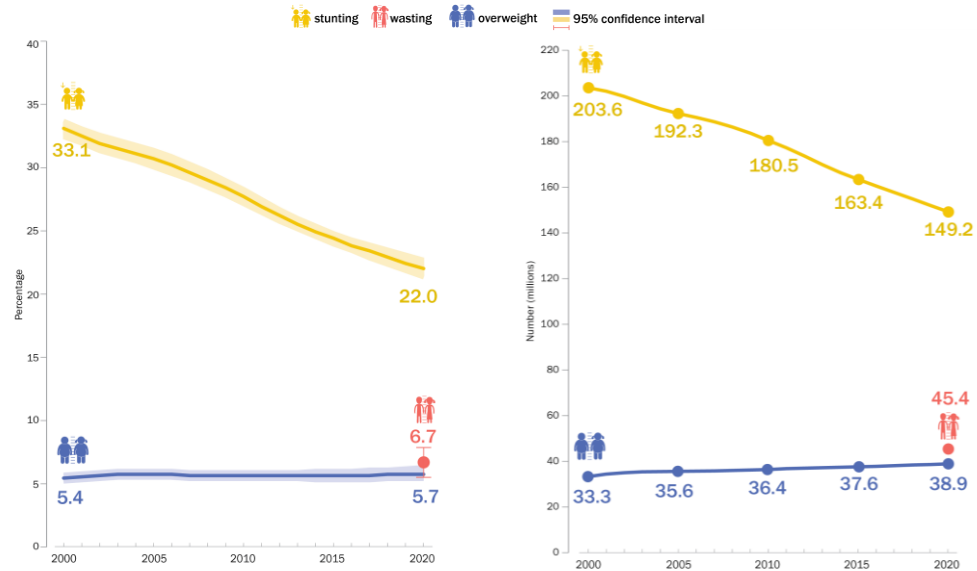


Double Burden of Malnutrition, Double Duty Actions

- Actions to address undernutrition, and overweight and obesity have historically been developed and delivered separately, sometimes even solutions for one inadvertently increasing the burden of the other (e.g. food assistance with low quality foods in contexts where energy intake was not an issue led to obesity)
- Increasingly, we need actions that can simultaneously prevent or reduce the risks of both, addressing the Double Burden of Malnutrition (DBM)
- Moreover, we need to identify systems and platforms that have the ability to address both causal pathways.

Global landscape for nutrition – *Childhood malnutrition*

Childhood stunting continues to decline, while little to no progress shown in curbing childhood overweight.



Percentage of children under 5 affected by stunting, wasting and overweight, global, 2000–2020

Number (millions) of children under 5 affected by stunting, wasting and overweight, global, 2000–2020

Less than half of all children under 5 live in lower-middle income countries, but nearly two-thirds of all stunted children and one-third of all overweight children do.



Number (millions) of children under 5 affected by stunting, by country income classification, 2000 and 2020¹

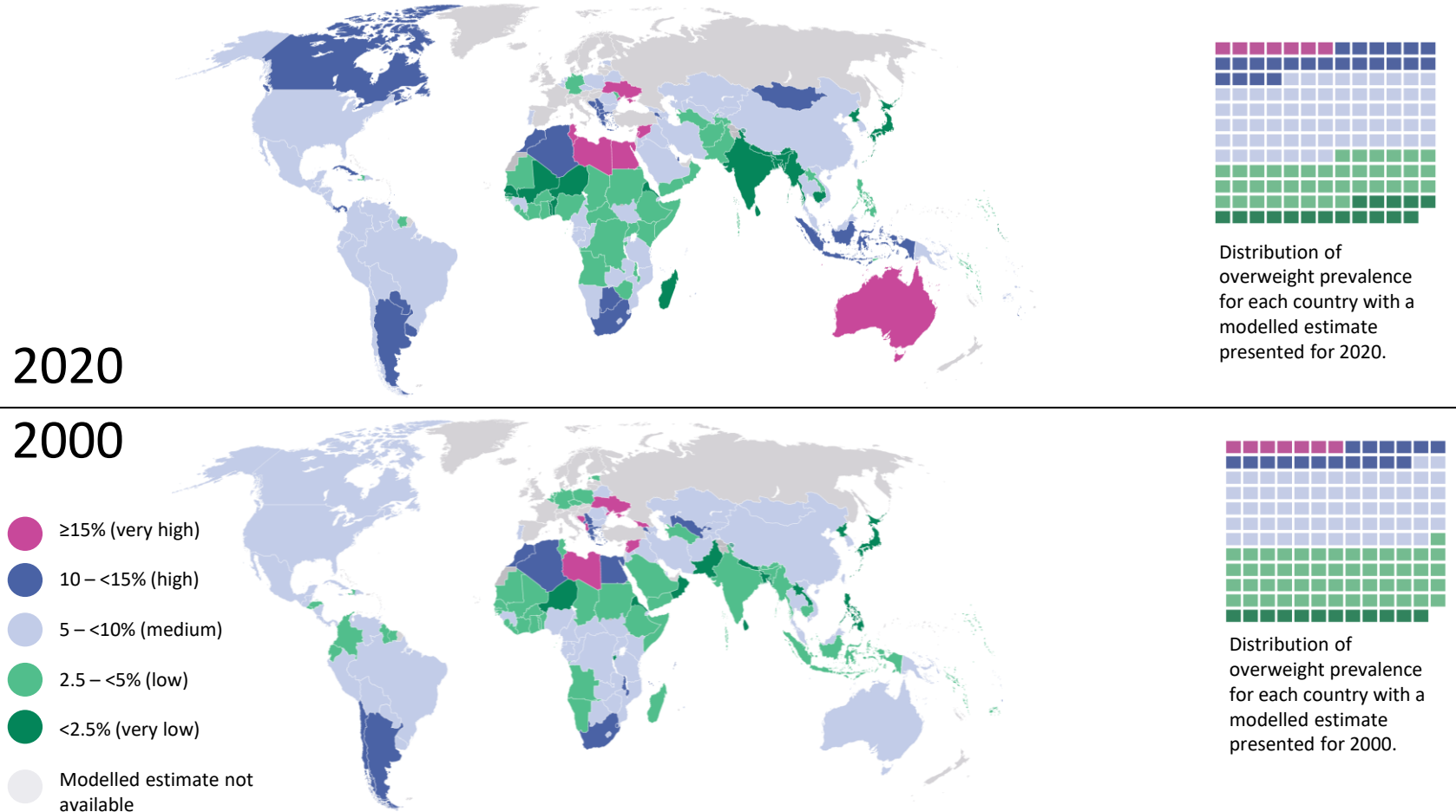
Number (millions) of children under 5 affected by overweight, by country income classification, 2000 and 2020¹

Global landscape for nutrition – *Childhood overweight*

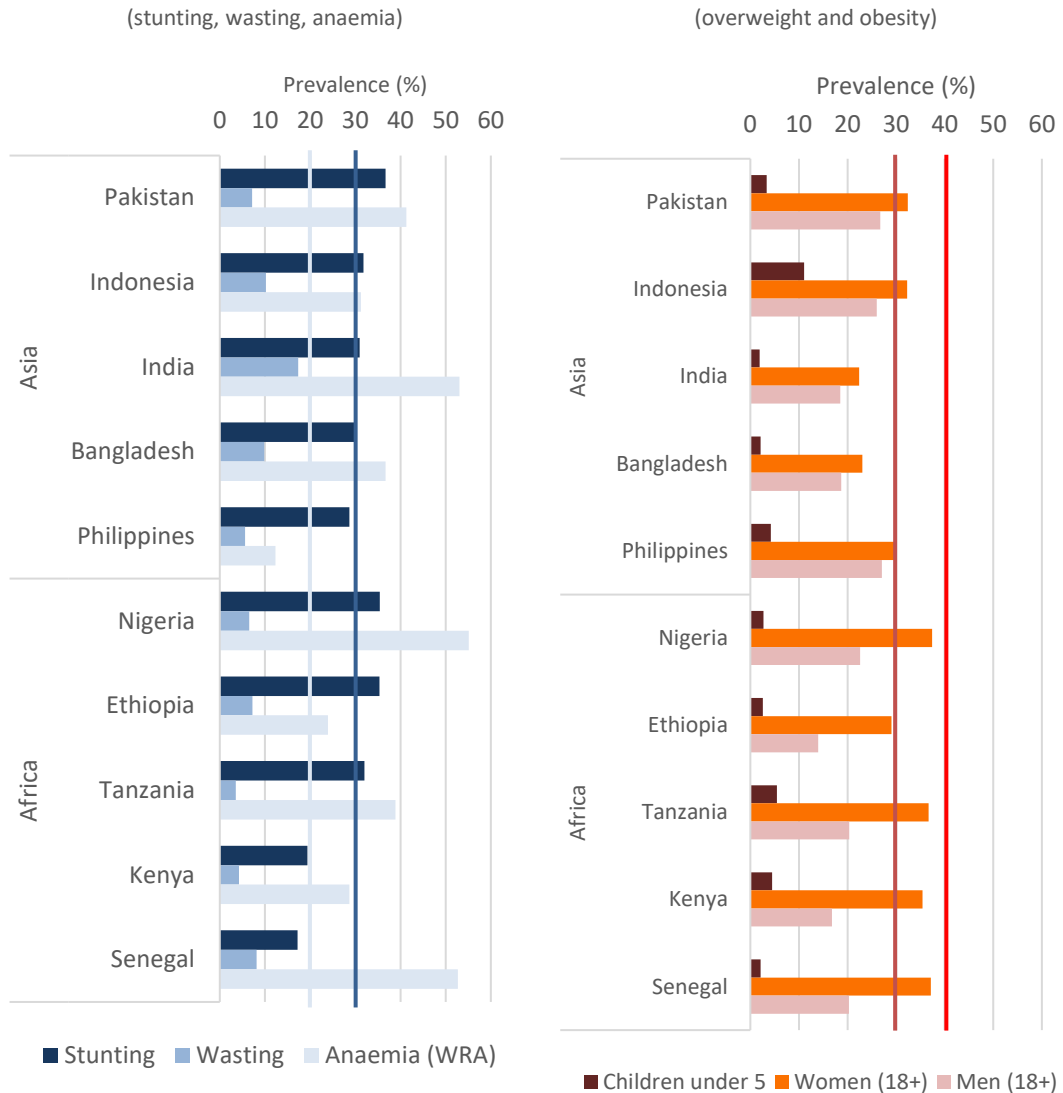
Percentage of children under 5 affected by overweight, by country, 2020 and 2000

Most children with malnutrition live in Africa and Asia. In 2020, almost half of all children under 5 affected by overweight lived in Asia and more than one-quarter lived in Africa.

Since 2000, there has been a significant increase in the number of overweight children observed in southeastern Asia and northern Africa.



The Challenge



Cut offs for undernutrition and overnutrition as indicated by vertical line: wasting >15%; stunting >30%; anaemia (WRA) >20%; significant 20-29%; moderate 30-39%; severe 40%. Cut-offs adapted³.

Nutrition International studied program countries experiencing the double burden of malnutrition (DBM)

Stunting remains the largest burden with 84.1 million children impacted and 30.8 million children wasted. Half of these stunted children and 2/3 wasted children live in India.

An estimated 8.7 million children under 5 were overweight in selected countries – half of those children are in India and Indonesia.

Adult women have a higher prevalence of overweight and obesity compared to men in all countries.

¹ UNICEF, WHO, World Bank Group Joint Child Malnutrition Estimates, 2021 edition.

² NCD-Risc 2017.

³ Popkin BM, Corvalan C, Grummer-Strawn LM. Dynamics of the double burden of malnutrition and the changing nutrition reality. *The Lancet*. 2020;395(10217):65-74. doi:10.1016/S0140-6736(19)32497-3

The bridge between DBM and Non-communicable Diseases (NCDs)

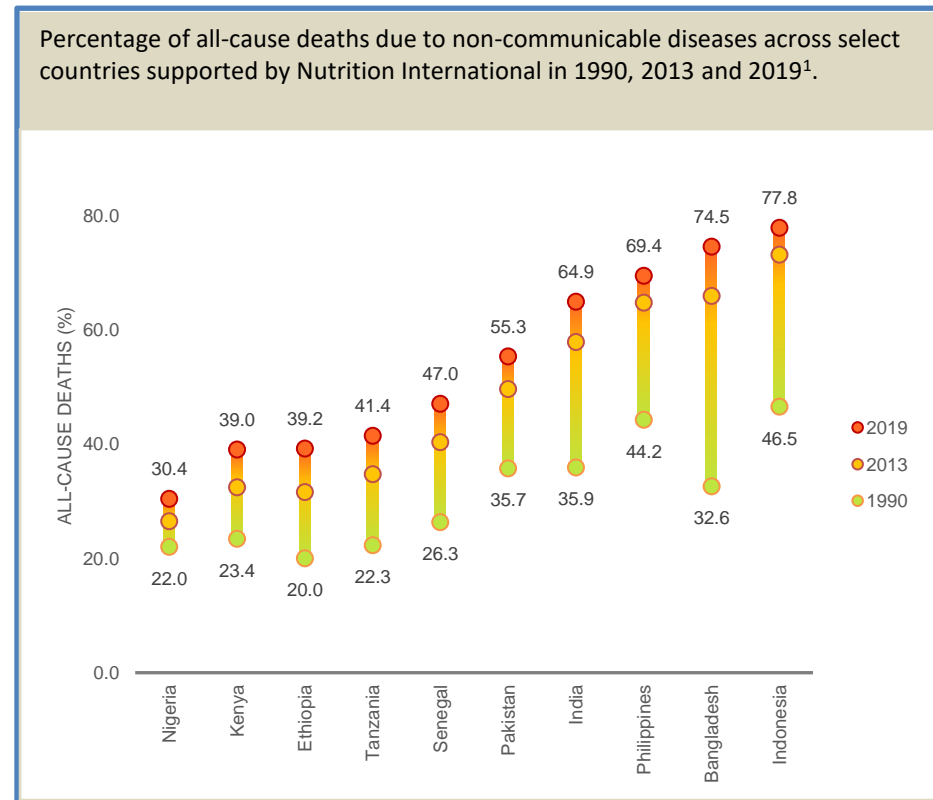
- The double burden of malnutrition is the prelude to the rapidly growing burden of non-communicable diseases that already accounts for 75% of deaths worldwide.
- Global conversations in nutrition and NCDs should no longer be siloed.
- Early life undernutrition, as early as utero, not only predisposes children to poor physical and cognitive development in life but also increased risk of NCDs in adulthood. More research is needed to quantify the exact impact.

- **Trends of NCDs and overweight and obesity**
- Since 1990, all-cause deaths due to NCDs have increased in all NI countries, and nearly doubled in Kenya, Ethiopia, Tanzania and Bangladesh
- A cross over is seen where either overweight or obesity prevalence surpassed underweight adults, and this is especially prominent for females. This precipitates the further increases of NCD burden among adults.
- The rise in the prevalence of overweight and obesity among adolescents is evident. The rate of increase is highest in Asia and north Africa.
- However, while adolescents are a one of the key target populations for many double duty-actions for addressing DBM, there are large gaps in adolescent data that can inform programs and policy for this vulnerable population.

Global burden of NCDs

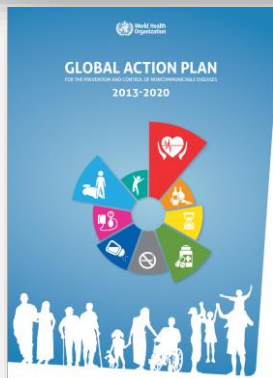
Nearly two in three all-cause deaths in LMICs globally are due to NCDs and the burden is expected to rise.

All-cause deaths due to NCDs have nearly doubled in many countries supported by Nutrition International since 1990.



¹Global Disease Burden 2019 <https://vizhub.healthdata.org/gbd-compare>

Global targets for nutrition (DBM) and NCDs



- Zero Hunger
 - 2.1 By 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round.
 - 2.2 By 2030, end all forms of malnutrition, including achieving, by 2025, the internationally agreed targets on stunting and wasting in children under 5 years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women and older persons.
- Good Health and Well-being
 - 3.4 By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being.
- Maternal, infant and young child nutrition targets
 - Anaemia
 - Low birthweight
 - Exclusive breastfeeding
 - Childhood stunting
 - Childhood wasting
 - Childhood overweight
- Nutrition and diet-related NCD targets
 - Obesity (men, women)
 - Diabetes (men, women)
 - Raised blood pressure
 - Salt intake
- WHO NCD Global Monitoring Framework with 9 targets includes:
 - a 25% relative reduction in overall mortality from cardiovascular diseases, cancer, diabetes, or chronic respiratory diseases by 2030.



Source: 2020 Global Nutrition Report: Action on equity to end malnutrition. Bristol, UK: Development Initiatives.

The socio-economic impact of DBM and NCDs

- Efforts to develop standardized methodology for estimating the economic impact of DBM is needed. This will serve as a steppingstone to encourage investment in the DBM space as well as nutrition overall. It will also provide an opportunity it critically evaluates the cost-effectiveness of double-duty actions that aim to address DBM.
- Based on available estimates from other countries, both under- and over nutrition impose significant economic burden through the loss of productivity and raised health expenditure, which is evidently alarming for the future of developing nations.
- NCDs imposes a wide sweeping impact throughout society and the economy. Where NCD-related health care is not provided or accessed readily, the cost of NCDs on the society are pre-mature deaths of productive citizens; and where NCD-related health care is provided, the cost of NCDs on society is the crushing associated medical costs on both the individual and health-care system and loss of productivity

Opportunity for action

1. Double Duty Actions
2. No missed opportunities



1. Double Duty Actions

- Lancet 2020 Framework

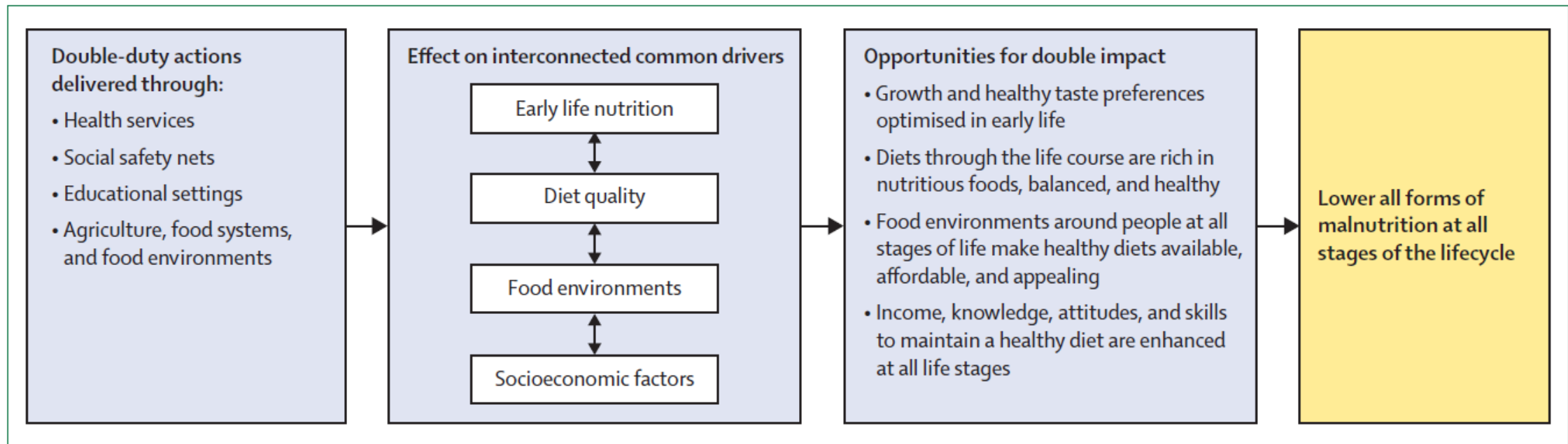


Figure: Framework to assess opportunities for double-duty effect of nutrition actions

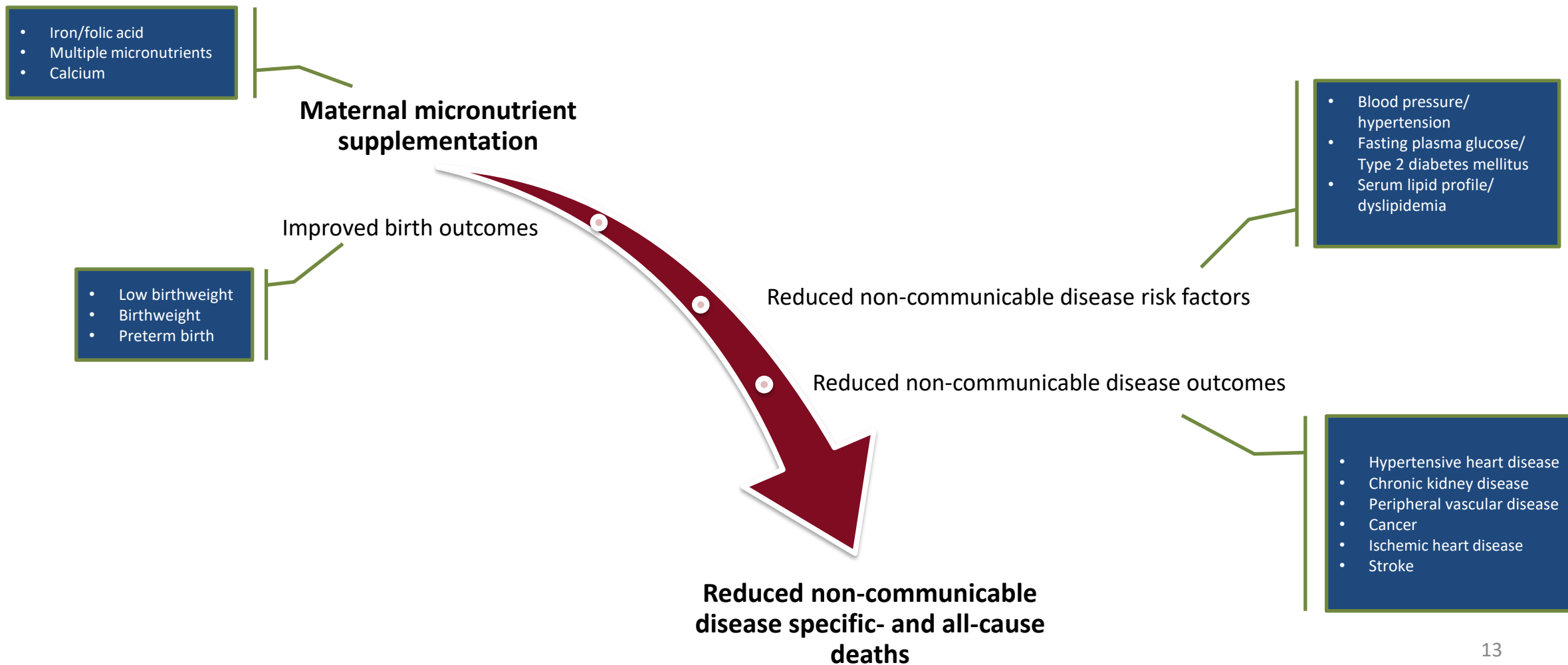
Quantifying the impact of early nutrition interventions on NCDs

The *Intergenerational Effect of Nutritional Interventions in Early Life* (IGNITE) Project, joint study by NI and Harvard Chan School of Public Health

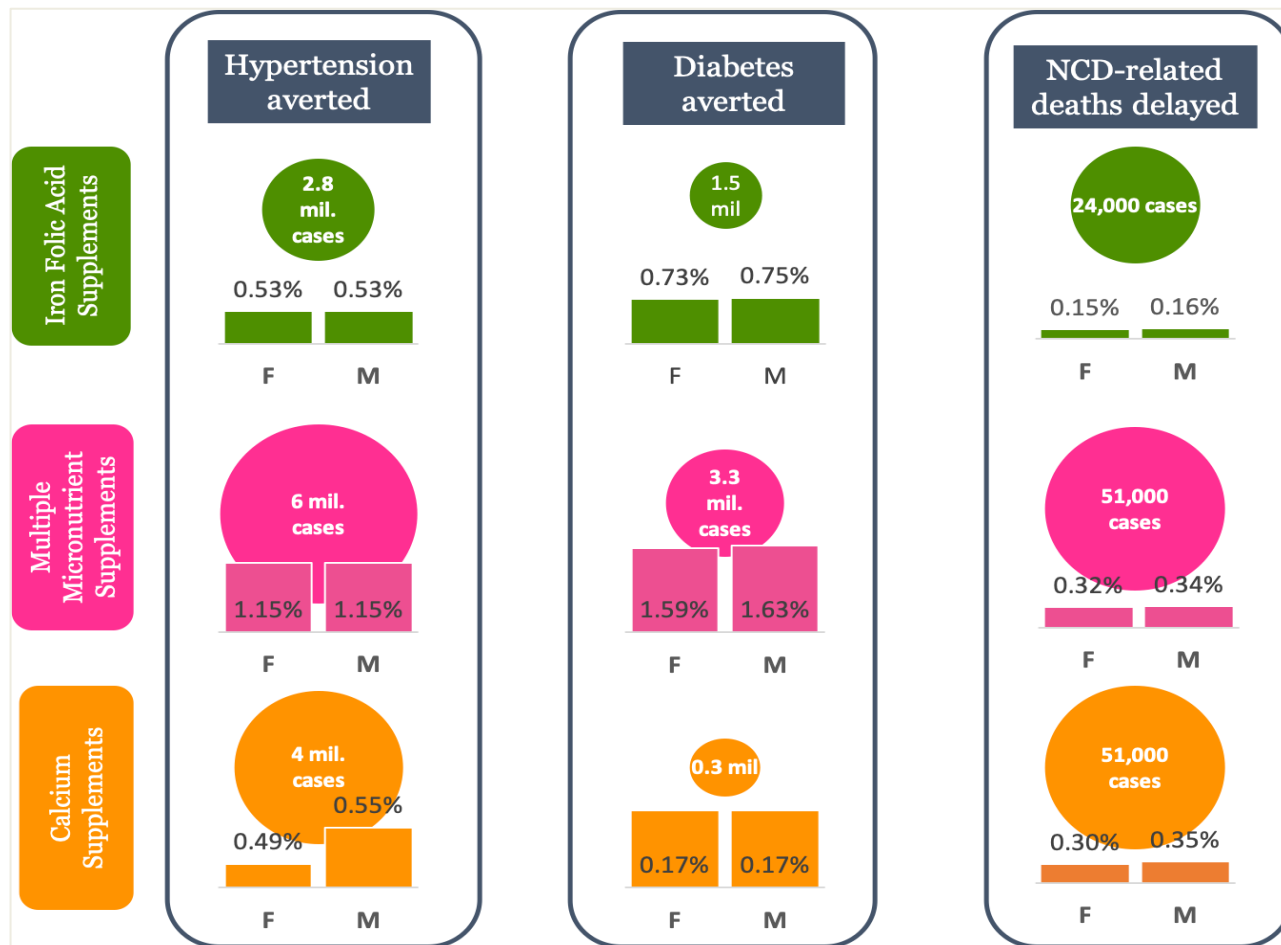
- Study the potential impact of key nutritional interventions on subsequent NCD risk and resulting lives saved (deaths delayed) at national and regional levels in LMICs.
- Provide a holistic and evidence-based understanding of how action or inaction through key nutritional interventions will impact health outcomes in LMICs, and accordingly, how interventions should be prioritized.

An intergenerational impact pathway

From maternal micronutrient supplementation to reduced non-communicable disease and death



Select NCDs and NCD-related deaths delayed due to scaled maternal nutrition supplementation



Among nutrition interventions, benefits of prenatal micronutrient supplements go beyond improving child survival and human capital and include noticeable improvements in long-term NCD risk in the offspring generation.

In comparison, the impact of calcium or MMS at scale prenatally is equivalent to nearly half of the all-cause mortality attributable to high consumption of sugar-sweetened beverages in LMICs (0.32% of all deaths) estimated by the GBD.

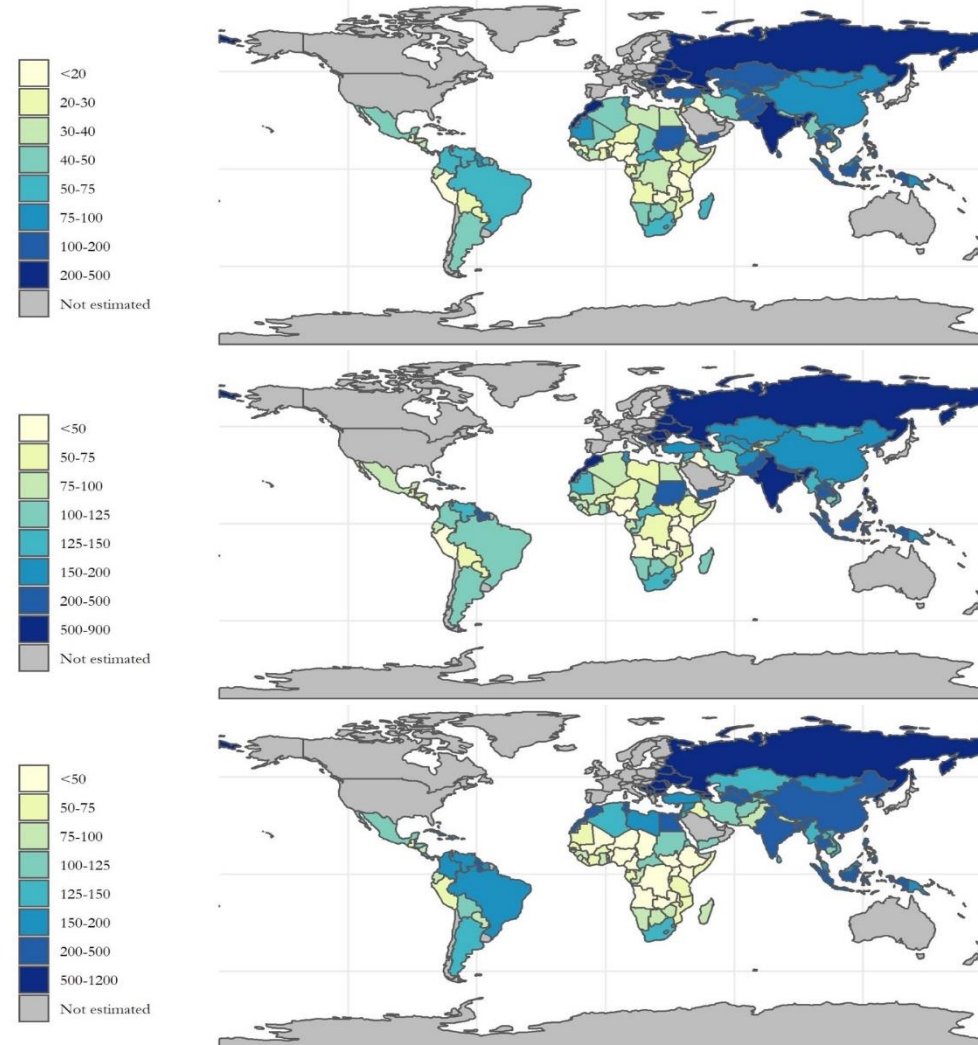
About 50% of deaths delayed were from ischemic heart disease and 30% were from stroke.

Annual NCD-related deaths delayed

Total deaths delayed were highest in south Asia and far outweighed deaths delayed in sub-Saharan Africa.

In sub-Saharan Africa, proportional benefits were twice the global average due to high prevalence of low birthweight (LBW) and pre-term birth (PTB) and in South Asia, the benefits were even larger due to the combination of high prevalence of LBW and PTB combined with higher prevalence of NCD risk factors.

Annual deaths delayed per 1,000,000 children born to mothers supplemented at 90%



(A) Iron and Folic Acid

(B) Multiple Micronutrient

(C) Calcium

2. No missed opportunities

A systems based approach to nutrition programming:

- Right Interventions (the optimal mix, based on data, context and needs)
- Right Sectors (lowest costs, highest impacts, sustainable mechanisms)
- Right Levels

Where DBM pathways intersect

- **downstream** work on delivery of proven nutrition interventions, improving efficiency, scale/reach and quality
- **upstream** work only justified if there is a strong impact pathway to nutrition-specific outcomes

Systems-Based Approach to Nutrition Programming is a novel approach that can systematically help improve reach and impact

- Considers the complexities of nutrition and enables strategies that can adapt to changing conditions.
- Enables an understanding of how different parts are effecting change rather than simply trying to understand specific components in isolation.
- Calls for leveraging synergies among existing local systems, programs, and structures to promote and enhance practical sustainability.
- Requires anticipating positive and negative consequences that may occur ensuring no harm is done.
- Requires program planners to be focused and purposeful about what they can and cannot do, seeking partnerships with others to fill the gaps.

Systems-Based Approach to Nutrition Programming is a novel approach that can systematically help improve reach and impact

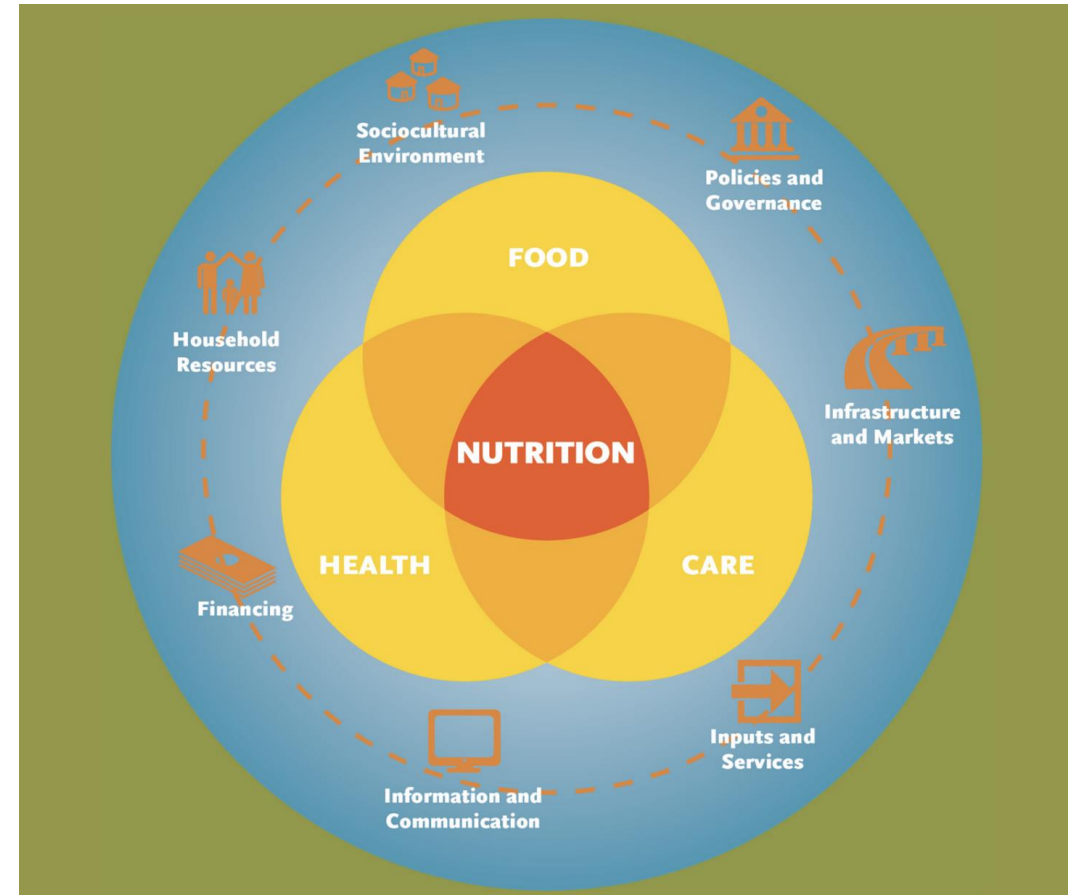
- Recognizes the Complexity of Nutrition
- Considers the complexities of nutrition and enables strategies that can adapt to changing conditions.
- Enables an understanding of how different parts are effecting change rather than simply trying to understand specific components in isolation.
- Calls for leveraging synergies among existing local systems, programs, and structures to promote and enhance practical sustainability.
- Requires anticipating positive and negative consequences that may occur ensuring no harm is done.
- Requires program planners to be focused and purposeful about what they can and cannot do, seeking partnerships with others to fill the gaps.

Systems-Based Approach to Nutrition Programming is a novel approach that can systematically help improve reach and impact

- Requires a shift away from fixed, planning to more iterative and adaptive planning, and a focus on co-creation with local stakeholders
- Requires the search for context-specific solutions rather than generic ones, and a recognition that our paradigms and pre-conceived ideas often limit our ability to understand local contexts.
- Defines clear pathways for the integration of nutrition into different systems (e.g., adapting education approaches to ensure the integration of nutrition)
- Requires a critical assessment of those not reached by current programming (e.g., how to reach the remaining 20% of adolescent girls)
- Provides visibility into potentially untapped opportunities by leveraging non-conventional sectors

Why is this approach unique?

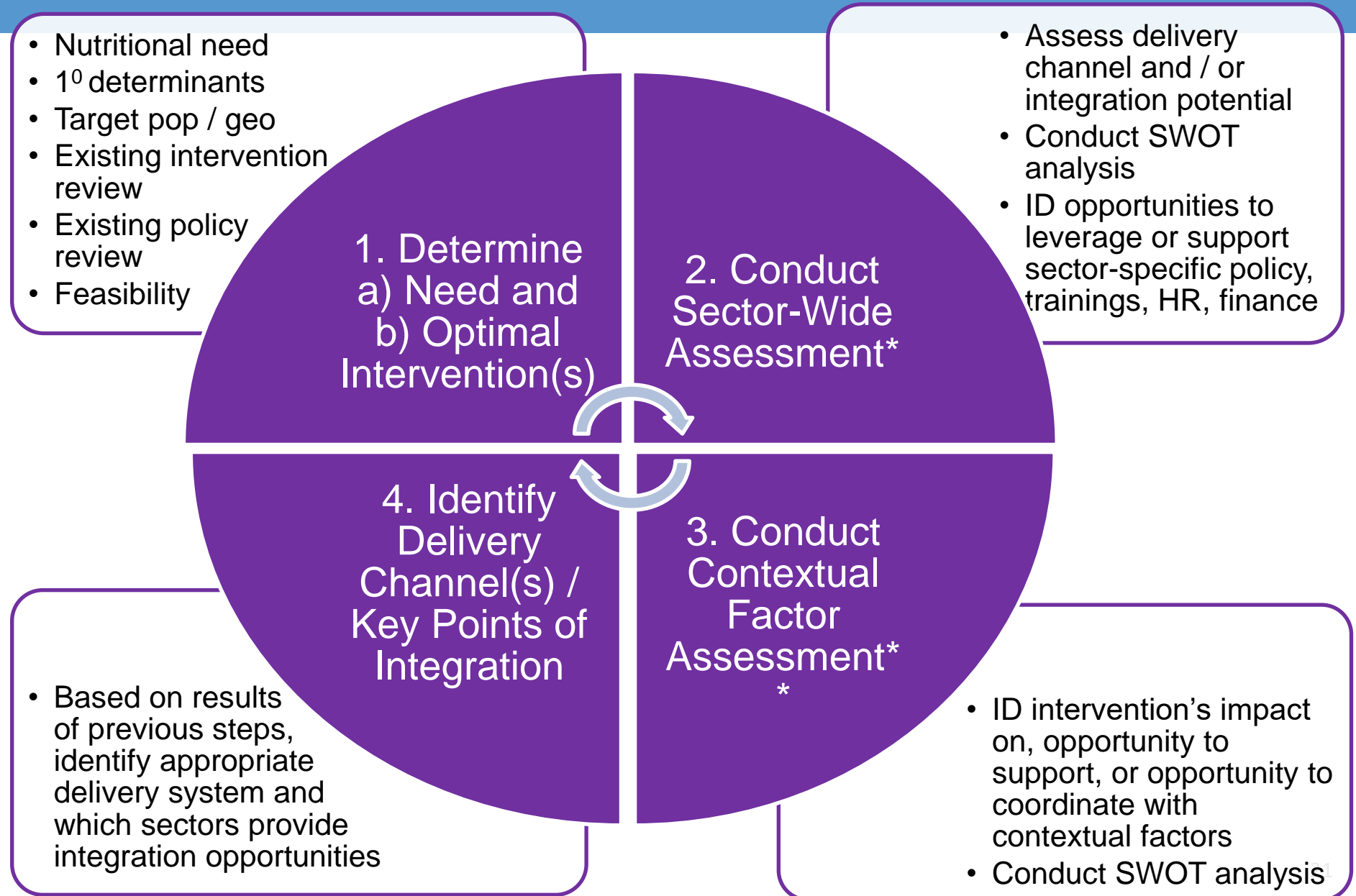
- Not just ANY “multi-sectoral nutrition” approaches are effective¹
 - Not attempting to integrate nutrition into *every* sector, sharp focus and targeted actions in key sectors
 - Significant difference made by the right tools and necessary technical expertise
 - Attempting to ensure nutrition programs are effectively integrated into other sectors, if and as relevant, *with an intentional design to improve nutrition outcomes or determinants*, in light of a country’s contextual factors
 - Focusing on proven nutrition interventions (not *any* nutrition interventions)



Conceptual Framework

*Health, education, agriculture, WASH, social protection

**Policy and governance, infrastructure and markets, inputs and services, info and comms, financing, HH resources, sociocultural environment



In summary

- The global landscape for health and nutrition continues to evolve, and increasingly, the distributions of multiple burdens of malnutrition and NCDs overlap.
- Opportunity for a triple benefit exists from the investment in maternal and early childhood nutrition interventions: actions that benefit one generation in addressing both under and overnutrition (double duty actions), and carry through to the next generation (triple benefit).
- Data and reliable, expert analyses are needed to identify the right mix of interventions, and the right platforms to be leveraged for policy and decision-making. Systems integration allows for synergistic benefits and savings at all levels of the pathway.
- Nutrition is central to addressing the increasing burden of non-communicable diseases. Nutrition should be prioritized as part of a larger focus on addressing all the NCD targets, and overall investments in health and human capital.
- Within the post-pandemic recovery efforts, there are opportunities for integration, for example, in the social safety net platforms.



Thank You!

#RDFS2022

