Healthier Pregnancies and Brighter Futures for Mothers and Babies

A global investment roadmap for multiple micronutrient supplementation

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NEPAL: *Maheshwori Devi Bishwokarma, pregnant with her second child*

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INDIA: Neha Thakur with her 7-month-old Vanita.

ETHIOPIA: Shitu Nuredin, nine months pregnant.

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PAKISTAN: Hajra and her 6-month-old baby Samia.

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EXECUTIVE SUMMARY: A Clear Investment Case for Scaling Up MMS

Malnutrition is a persistent and growing threat to the well-being of women and girls worldwide. Currently, 1 billion women do not have access to the adequate nutrition and healthy diets they need to survive and flourish through every stage of life[1] — and two out of every three women of reproductive age worldwide have micronutrient deficiencies.[2]

Malnutrition not only limits a woman's ability to meet her full potential; it threatens the health and well-being of future generations. When women are healthy and well-nourished, they are more likely to have healthy pregnancies and give babies the best start in life. Conversely, malnourished mothers are more likely to have serious pregnancy complications, including giving birth to infants who are born too soon and too small. In 2020, one in every four newborns was born small and vulnerable, increasing the risk of serious illness and, tragically, even death. More than half of all newborn deaths are attributed to being small and vulnerable. Malnourished babies who survive infancy are more likely to experience developmental challenges and chronic health conditions that pose difficulties in adolescence and adulthood.

While a comprehensive approach is needed to fully address the causes and consequences of malnutrition in women, there are cost-effective interventions that, if deployed today, can save and improve lives. One small but mighty intervention is multiple micronutrient supplements (MMS) — an improved prenatal supplement that can deliver transformational impact.

With a cost of less than two cents per daily tablet, MMS is one of the best buys in global health and nutrition. When taken daily during pregnancy, it can prevent anemia, support a healthy pregnancy, and reduce the risk of babies being born small and vulnerable or stillborn. Despite its proven effectiveness, in low- and middle-income countries where the prevalence of maternal malnutrition and risk of child mortality are high, most women receive an inferior supplement with only two ingredients (iron and folic acid, or IFA) — if they receive any supplement at all.

This investment roadmap presents an opportunity to reach at least 260 million women with MMS by the end of 2030, an ambition that would deliver profound health impacts for mothers and babies. The plan laid out in this document would save more than 600,000 lives, improve birth outcomes for more than 5 million babies, and prevent anemia in over 15 million pregnant women. At a cost of just over $4 per pregnancy (a total cost of $1.1 billion over seven years), this roadmap would translate to monumental health gains while directing coordinated efforts to strengthen and improve health systems and antenatal care services in parallel.

Dozens of country governments worldwide are taking the first steps to introduce and scale MMS and strengthen health systems to deliver it. Bilateral donors, private philanthropies, multilateral development banks, and the private sector can provide support through a variety of mechanisms, including direct support to governments and assistance to local and international programmatic partners involved in improving maternal nutrition. Partners can make a modest investment that will deliver a big impact for pregnant women and the health and well-being of generations to come.

More than two decades of research has demonstrated that MMS significantly improves birth outcomes compared to the current standard of care. Now is the time for all stakeholders to invest in MMS and ensure women everywhere can utilize its power for healthier pregnancies.

For full citations, please see the global investment roadmap.
https://hmhbconsortium.org/knowledge-hub/mms-global-investment-roadmap/

NEPAL: *Ritika Bidari, her mother, and other mothers at the clinic in Sudal, Bhaktapur.*

The Power of MMS During Pregnancy

Malnutrition causes one in five maternal deaths and nearly half of all child deaths under age five.[3,4] Today, more than 1 billion women lack access to the quality nutrition services and healthy diets they need to survive and thrive, with dire consequences for themselves and their children.[5] Malnourished mothers are more likely to give birth to small and vulnerable newborns. They're also more likely to suffer from conditions — such as anemia — that increase the risk of preterm birth and postpartum hemorrhage, the leading cause of maternal death.

MMS is widely recognized as a high-impact, safe, cost-effective, and affordable intervention to meet the nutritional demands of pregnancy. Because these demands are often not met through diet alone, high-quality prenatal supplements play an important role in preventing malnutrition in pregnant women and supporting a healthy pregnancy for a woman and her child.[6,7]

A better prenatal supplement to combat malnutrition and improve birth outcomes

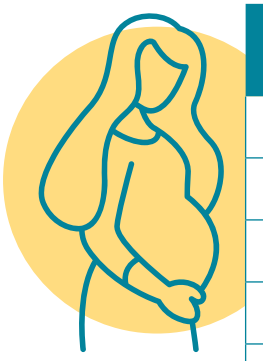
More than 20 years of research and at least 17 clinical trials have shown that the United Nations International Multiple Micronutrient Antenatal Preparation of multiple micronutrient supplements (UNIMMAP MMS, which throughout this document is referred to as MMS) is more effective than IFA, the current standard of care in many low- and middle-income countries. MMS contains 15 essential nutrients (compared with only two in IFA) and is more effective than IFA in preventing babies from being born either too soon and too small or stillborn (Figure 1).[a,8,9] In anemic or underweight pregnant women, the benefits of MMS over IFA are even greater.

Introducing and scaling MMS can also prevent anemia in pregnant women. Providing MMS during pregnancy results in a level of anemia prevention comparable to that of IFA, but with the added benefit of improving the health and nutrition of the baby, too.[10] Expanding access to MMS can significantly reduce maternal anemia, addressing a largely invisible global public health crisis that affects 40% of pregnant women.[11]

An entry point to improve quality and coverage of antenatal care

A coordinated and financed approach to scaling MMS offers an entry point to improve the quality and coverage of antenatal care systems. Across 37 low- and middle-income countries with a high burden of malnutrition and negative health outcomes, the average percentage of women who completed four or more

Figure 1: Increased Impact of MMS on Birth Outcomes Compared to IFA



	All Pregnant Women	Anemic* or Underweight^ women
Reduced risk of stillbirth	8%	–
Reduced risk of 6-month infant mortality	–	29%*
Reduced risk of preterm birth	6-8%	16%^
Reduced risk of low birth weight	12-14%	19%
Reduced risk of small-for-gestational-age	2-9%	8%*

Summary of benefits of MMS vs. IFA on pregnant women overall and in anemic (hemoglobin <110g/L) or underweight (BMI <18.5 kg/m2) pregnant women[12,13]

antenatal care visits was 58%.[b] This coverage remains far too low, despite modest improvements in recent years. And even when women are accessing antenatal services, the quality and comprehensiveness of those services are often lacking. In those same 37 countries, just 36% of women reported taking 90 or more IFA tablets during pregnancy (Figure 2). This considerable gap in coverage of nutrition supplementation indicates an opportunity to improve the quality of antenatal care services.

Introducing and scaling MMS will require continued investments in strengthening health systems and improving the quality of care. This movement provides an opportunity to make requisite investments that will deliver impact far beyond maternal nutrition supplementation. For example, investments to strengthen supply chains and train and equip health workers can address broader health concerns.

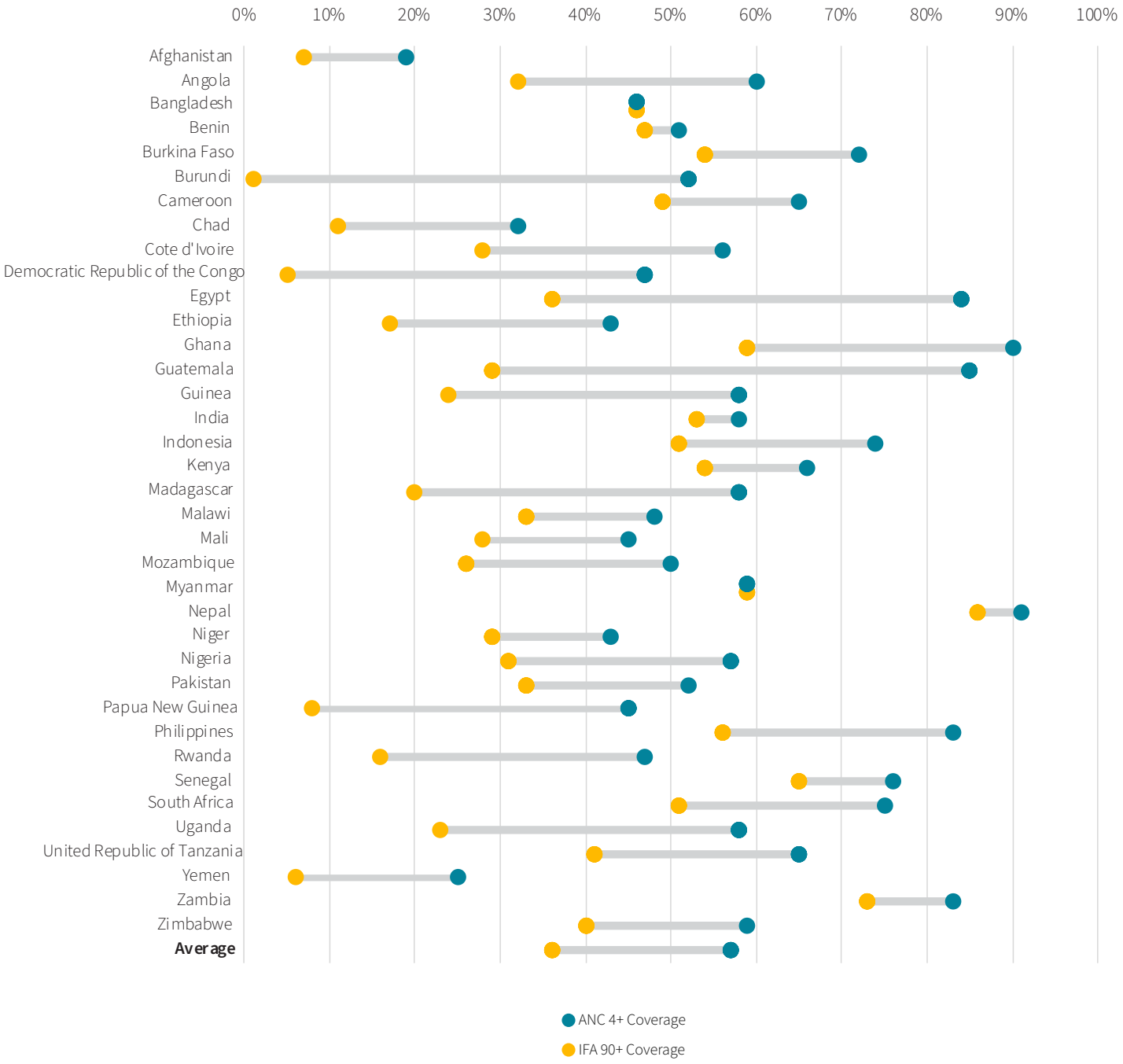
Health systems have a responsibility to deliver high-impact and cost-effective products and care. Broader efforts to improve health systems will never be complete until MMS is sustainably available to the pregnant women who need it; therefore, coverage of MMS is a useful metric by which to measure the success of strengthening health systems.

A best buy in global development

Malnutrition is estimated to cost the global economy $3.5 trillion in lost productivity and healthcare costs every year. Investing in MMS can prevent human capital losses in educational years and lifetime income.[14] With a cost of $0.01-$0.02 per daily tablet, MMS is one of the best buys in global health and development and is even more cost-effective than IFA.[15] Recent analysis by the Copenhagen Consensus found that transitioning from IFA to MMS has the highest benefit-cost ratio of any single nutrition intervention, with an estimated return on investment of $37 for every $1 spent.[16]

Figure 2: IFA vs. ANC Coverage Rates Across 37 Countries with Available Data

*While the **number of antenatal care (ANC)** visits has increased over recent years, there is a considerable gap in **iron and folic acid (IFA)** supplementation coverage. This indicates an opportunity to improve the quality and impact of ANC services with multiple micronutrient supplementation.*



Now is the Time to Invest in MMS

In high-income countries, doctors have long recommended that pregnant women take a prenatal multivitamin. However, in low- and middle-income countries, where the prevalence of malnutrition and risk of child mortality are the highest, pregnant women receive only IFA — if anything at all. Women around the world should not have to wait to benefit from MMS. Now is the time to invest in scaling MMS because:

The evidence base is stronger than ever. Significant evidence is now available showing MMS is safe, cost-effective, affordable, and more effective than IFA in preventing vulnerable births.[8] Because of this evidence, MMS has been increasingly included in global health guidance. In 2020, the World Health Organization (WHO) updated antenatal care guidelines with a recommendation of MMS in the context of research, and in 2021, added MMS to the model list of essential medicines.[17] UNICEF has included MMS as a critical action within its 10-year nutrition strategy and its recent Improving Maternal Nutrition Acceleration Plan.[18]

Country demand and readiness for MMS scaling has never been greater. Countries are leading a global movement to improve maternal and newborn health by planning for the introduction and scaling of MMS. To date, more than 25 countries are actively working to introduce and ultimately scale MMS in their health systems, and an additional 25 countries have expressed interest in MMS introduction.[19]

The global community has developed innovative resources and partnerships to support MMS scale-up. Together, country governments, donors, and programmatic partners have developed an implementation framework that optimizes for country leadership, efficient use of resources, and sustainability. Additionally, new financing opportunities — including through mechanisms such as the Child Nutrition Fund (Box 1) — as well as experienced implementing partners operating at the country level can be utilized to deploy MMS investments efficiently and effectively. Global and local partners have also coalesced around new and existing mechanisms for coordination and collaboration, including establishing the Global MMS Donor Alliance, coordinating with the UNICEF Supply Forum, and collaborating with National MMS Scale-up Alliances.

PAKISTAN:
Shareefa and her two year old daughter Amna.

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GHANA: *Mary Akorful brings her baby to the Kokrobite Health Center for care.*

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Compounding crises make MMS — and addressing micronutrient deficiencies during pregnancy — more critical than ever before. Around the world, women and girls disproportionately bear the burden of compounding crises, from climate change to conflict. Climate change poses a particular risk to the health of pregnant women, their children, and other vulnerable communities that are already more susceptible to undernutrition and micronutrient deficiencies. Ensuring pregnant women receive a more complete prenatal supplement not only protects against common nutrient deficiencies in pregnancy; but is a foundational step toward building resilience in the face of climate-related disasters.

Box 1: Catalyzing Domestic Resources and Scale through the Child Nutrition Fund

The Child Nutrition Fund is a global initiative aimed at ending child wasting led by UNICEF, with support from the U.K. government, the Children's Investment Fund Foundation, the Bill & Melinda Gates Foundation, and other partners. The Fund serves as a structured co-financing mechanism aimed at catalyzing funding for MMS and other essential nutrition interventions for women and children. Through the Child Nutrition Fund, country governments have the opportunity to double their investments in MMS, leveraging donor contributions to scale up coverage and ensure equitable access for pregnant women.

By providing a catalytic one-to-one matching mechanism, the Child Nutrition Fund incentivizes governments to prioritize MMS within their national nutrition agendas, fostering sustainable, government-led and funded programs. This collaborative approach not only enhances financial resources for MMS, but also strengthens partnerships between country governments, donors, and other stakeholders, driving progress towards global nutrition targets and improving maternal and child health outcomes.

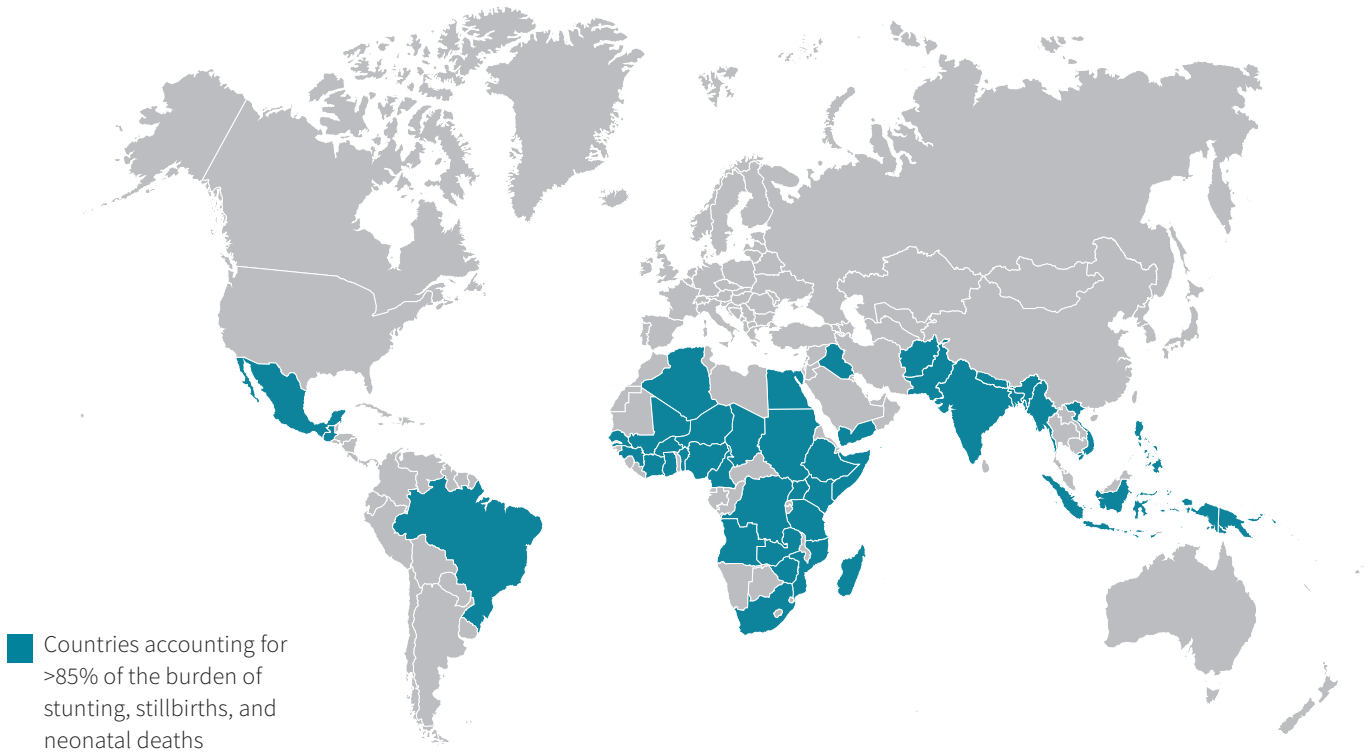
NIGER: *Hamadou Abdoullaye sits with his mother at their home.*

Delivering Impact for 260 Million Mothers and Their Babies

Global momentum for MMS introduction and scale-up is at an inflection point. In a rapidly expanding number of countries, delivering MMS to vulnerable women has been identified as an urgent priority. Governments and country stakeholders are prepared to embark on this effort but require additional support and resources from others to do so.

This investment roadmap provides a framework to assist international funders to meet the moment. It calls for all stakeholders to mobilize $1.1 billion to reach 260 million pregnant women with MMS by the end of 2030. With these resources, MMS can be scaled to reach at least 60% of pregnant women across 45 low- and middle-income countries (Figure 3), delivering profound impact for mothers and their babies. The associated cost considers the broad range of investments, activities, and costs that will be required to achieve this scale-up. It also considers where outside funding can be most complementary to domestically controlled resources. This document is not intended to be an investment plan for any individual country or region, but rather the foundation for coordinated action across relevant stakeholders to address and adapt to specific country needs.

Figure 3: Countries Included in Investment Roadmap Modeling



The investment roadmap models the cost and impact of scaling MMS in 45 low- and middle-income countries, which account for 85% of the burden of key nutrition and health outcomes, including stunting, stillbirths, and neonatal deaths. Some of these country governments are already exploring MMS and beginning initial implementation, and some are in the process of developing costed roadmaps to support scale-up plans. Detailed, up-to-date information on introduction of MMS at the country level can be found on the Healthy Mothers Healthy Babies website: https://hmhbconsortium.org/world-map/

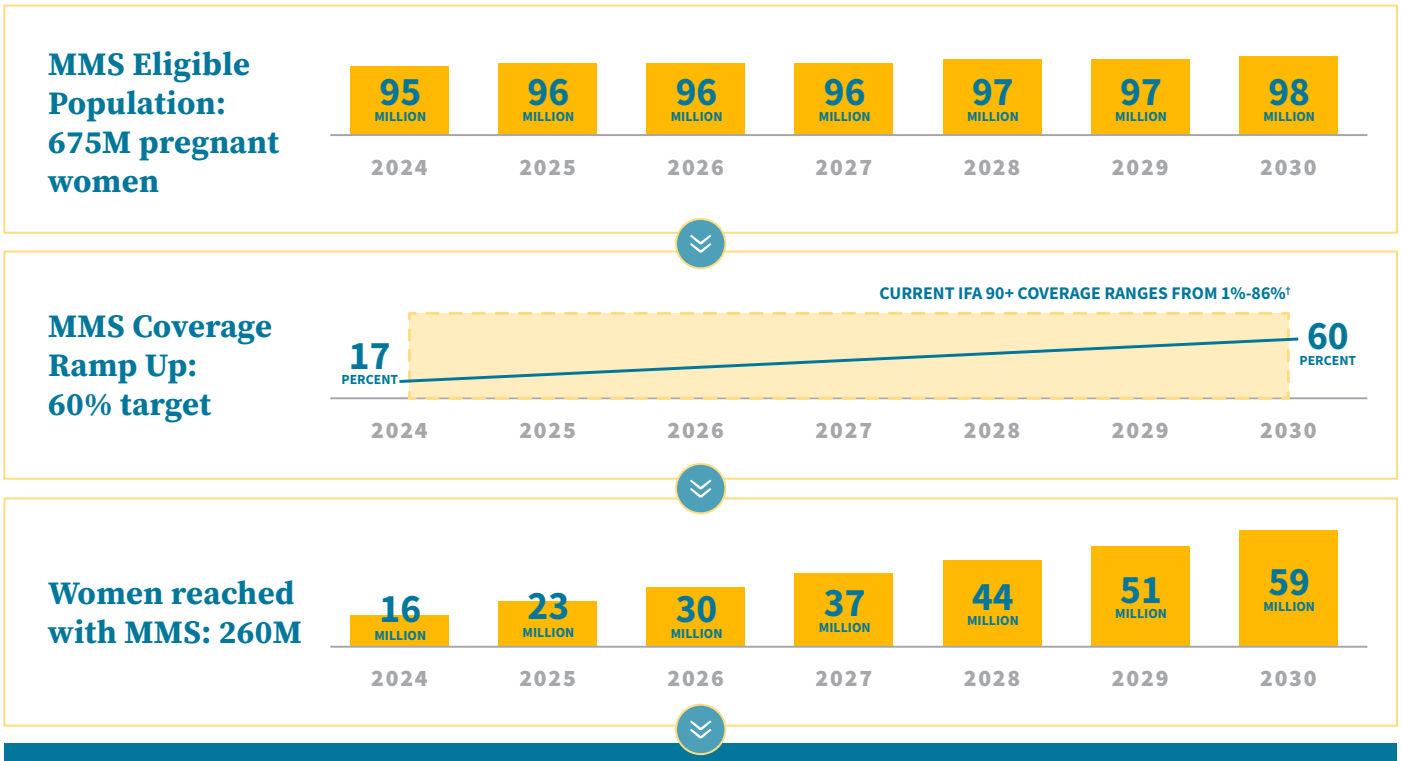
This roadmap shows that this is an effort and investment worth undertaking. At an average cost of $4 per pregnant woman reached,[c] we impact two lives — mother and baby — and deliver life-saving and life-changing impact.

This investment would avert more than 600,000 preventable deaths, 5 million vulnerable births[d], 2 million stunting-years, and 15 million cases of maternal anemia (Figure 4).

Average cost is $4 per Pregnant Women

Figure 4: Lives Saved and Improved from Reaching 260 Million Women in 45 High Burden Countries

MMS Scale-up and Estimated Impact from 2024-2030



Deaths Averted

618,000 LIVES SAVED

411,000 Stillbirths averted

13,000 Post-neonatal deaths averted

193,000 Neonatal deaths averted

Health Outcomes

Vulnerable births averted: **5.3 MILLION**

Stunting-years averted: **2.3 MILLION**

Cases of maternal anemia averted: **15.4 MILLION**

† Source: Demographic and Health Surveys, other national health and nutrition surveys.

Breaking Down the Cost to Scale Up MMS

The investment roadmap considers three main cost categories, representing additional funding needed to scale MMS (Table 1). Please refer to Annex 2 in the appendix for a more detailed description of the costs and financing methodology.

- **Transition cost,** including pilot projects and implementation research, as well as all necessary activities to transition from IFA to MMS as the standard of care (e.g., policy changes requiring advocacy, training of healthcare workers, development of a scale-up plan, technical assistance). These are considered a one-time cost in each country.
- **Scaling cost,** including delivery, monitoring, supervision, and strengthening of antenatal care to reach more women with MMS. Scaling costs are applied only to the population of pregnant women beyond current IFA coverage, since existing antenatal care platforms can be used to distribute MMS. Beyond 2030, these costs are expected to decrease as antenatal care platforms are strengthened; however, they will never reduce to zero given the ongoing cost of delivery.
- **Supply cost,** including a 180-tablet bottle of MMS and shipping. Currently, MMS is estimated to cost $2.60 for a 180-tablet bottle, including shipping and logistics. These costs are applied to all pregnant women who receive MMS and may decrease over time as demand increases and more manufacturers, including local and regional suppliers, enter the market.

Table 1: Cost to Scale Up MMS in 45 Low- and Middle-Income Countries (USD)[d]

Cost Category	Cost Per Woman[e]	Total Cost to Reach 260M Pregnant Women	Donor Resource Mobilization
Transition	$6.00	$224M	$203M
Program	$4.00	$235M	$167M
Supply	$2.60	$678M	$350M
Total	**-**	**$1.1B**	**$720M**

Financing Sources

Introducing and scaling MMS to 60% coverage between now and 2030 is estimated to cost $1.1 billion.[f] Of this overall cost, this roadmap estimates that $720 million will need to come from public and private donors, complementing $380 million from domestic resources. This investment roadmap is built around the expectation that most funding for MMS will come from donors in 2024, with a growing portion shifting to domestic government financing in the following years (Figure 5).

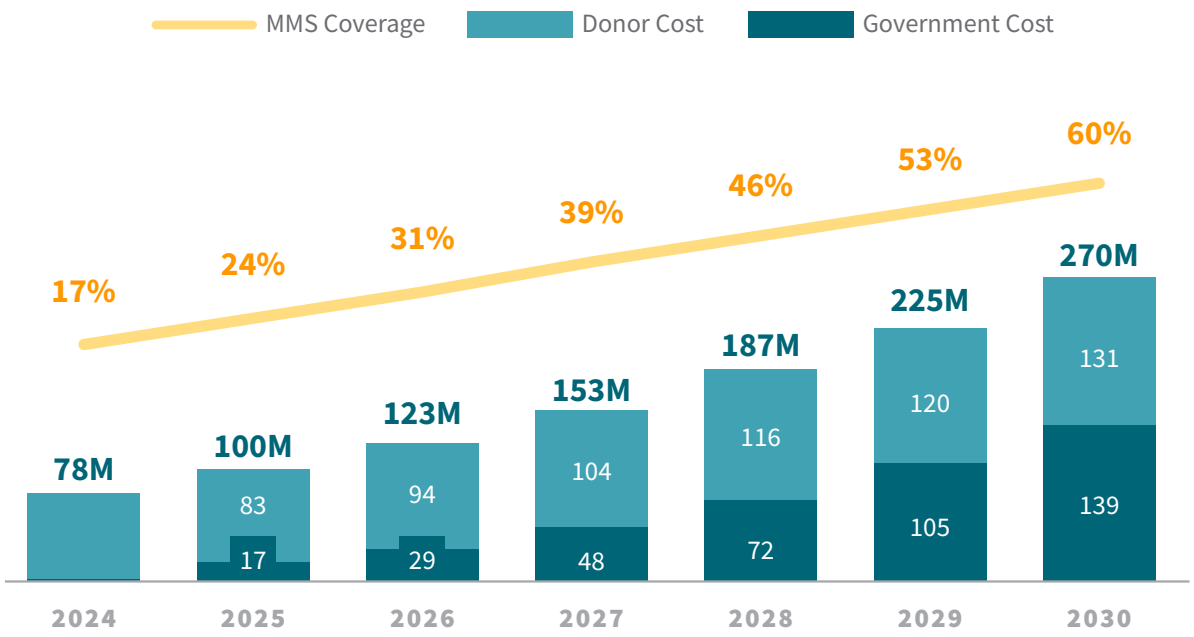
This roadmap considers where external funding can be most additive to existing domestic resource allocation. In particular, significant donor support for upfront, one-time transition costs will be critical for catalyzing the transition to MMS and supporting the broader strengthening and expansion of antenatal care platforms necessary to achieve coverage goals for MMS.

Considering the marginal yet meaningful cost difference between IFA and MMS, as well as higher coverage goals presented in this roadmap, donor support for supply costs will be critical. The MMS supply costs presented in this roadmap do not discount the current resources committed for IFA given the considerable variability in domestic financing and pricing for IFA across countries. Countries can reallocate a portion of their existing IFA supply budget to procure MMS; however, it is critical that funding for MMS is additive, rather than a replacement for existing IFA funding. This is particularly important as iron supplements remain essential to treat women with severe anemia and will need to continue to be procured and distributed in addition to MMS.

Once introduced, sustainably scaling MMS programs requires joint financing between country governments and donors. Country governments are gradually expected to take on more of the product cost and to take the lead on improving antenatal care services to deliver MMS.

This investment roadmap is intended to offer a galvanizing global view of what can be achieved by introducing and scaling MMS. Ultimately, the path towards achieving this vision will require bold commitments from all stakeholders. It will also require that donors commit to engage with country-led efforts to coordinate investment and action in each unique context.

Figure 5: Distribution of MMS Cost Between Governments and Donors from 2024-2030



A Proven Framework for Transitioning and Scaling MMS at Country Level

Countries must plan carefully to ensure appropriate policies and guidelines are in place, health and procurement systems are ready, and sufficient financing is available to transition and scale MMS. To support this process, we have developed a first-of-its-kind framework based on previous experience introducing nutrition supplements and maternal health products in select countries (Figure 6). The framework details a set of enablers, objectives, and activities for governments, donors, and implementing partners to consider, fund, and adapt. It was primarily designed for development settings; humanitarian contexts will require unique considerations, including increased reliance on sustained donor funding (Box 2).

Figure 6: Framework for Country MMS Scale-up

	Activities			*Outputs*	
	I. BUILDING AN ENABLING ENVIRONMENT »	**II. DESIGN & TEST IMPLEMENTATION STRATEGIES** »	**III. SCALING & MAINTENANCE** »	**STRATEGIC OBJECTIVES** »	**OUTCOMES**
POLICY/ REGULATORY	» Landscaping & analysis » Stakeholder mapping & engagement » Advocacy	» Advocacy » Policy & guideline development » Roadmap	» Policies & guidelines adoption » Operationalize Roadmap	**Product is included in relevant policies & instruments at all levels of government**	REACH COVERAGE » IMPROVED MATERNAL NUTRITION & BIRTH OUTCOMES
FINANCING	» Cost-effectiveness analysis	» Forecasting » Financing strategy	» Demand planning » Finance mechanisms » Market shaping	**Sufficient funding committed by governments & donors for procurement & delivery of Product**	
QUALITY PRODUCT	» Supply readiness assessment	» Manufacturing support » Supply chain strengthening	» Cost-effective procurement coordination » Monitor & address supply chain/ distribution/stock outs	**Sufficient volumes of quality product are manufactured, available & procured**	
DELIVERY CHANNELS	» Delivery platform(s) assessment » Exploratory distribution of Product	» Demonstration projects » System strengthening	» National rollout » Expansion of delivery channels	**Product is available & accessible & pregnant women receive product during ANC & use as recommended**	
	COORDINATION AND MLE				

Pillar 1: Policy & Regulatory

Countries must ensure the appropriate policy and regulatory environment is in place to support the procurement and distribution of MMS in health systems as the standard of care. This includes ensuring the inclusion of MMS in the national Essential Medicines List and antenatal care guidelines. Additionally, development of a country-specific costed roadmap is essential for governments to identify and quantify the expected costs to scale up MMS, begin country scale-up planning, and coordinate additional support as needed.

Pillar 2: Financing

Sustainable financing of MMS requires development of a phased financing strategy and a clear understanding of current and future demand. Establishing a comprehensive multi-year financing strategy with sliding scale funding — e.g., a decreasing contribution of donors and proportional increase in domestic resources — will facilitate sustainable, long-term financing by supporting country governments in gradually allocating a recurring domestic budget for MMS. The product costs can also be supported by utilizing innovative financing mechanisms such as the Child Nutrition Fund (Box 1).

Pillar 3: Quality Product

Sustainable procurement of quality MMS that meets international standards (i.e., UNIMMAP formulation) begins with an assessment of existing supply chains and bottlenecks. Government selection of local, regional, and global MMS manufacturers and subsequent development of a forecasting and procurement plan are important steps to ensure sufficient volumes are procured, manufactured, and made available. Additionally, forecasting of future demand will be critical for placing advanced orders with manufacturers and receiving sufficient supply of product. Active stock and logistics monitoring are key to preventing stock-outs and forecasting demand.

Pillar 4: Delivery Channels

Strengthening national antenatal care systems alongside scale-up of MMS is critical to ensuring sustainability of delivery channels. Because of IFA's generally low levels of coverage, countries need to prioritize a comprehensive systems-strengthening approach to deliver MMS at scale and realize the full potential of this life-changing product. This includes activities that expand access to antenatal care and improve its quality, like growing the portion of the community health workforce that is appropriately trained to deliver MMS within an integrated antenatal care service.

Box 2: MMS in Emergency Settings

In the first three years following the onset of the COVID-19 pandemic, the number of people requiring humanitarian assistance doubled from 168 million to 339 million.[20] The United Nations Population Fund (UNFPA) estimates that women and children make up more than 75% of refugees and displaced persons. Of this at-risk population, a quarter are women of childbearing age — and it's estimated that one in five of these women are pregnant.[21] Scaling MMS in emergency settings presents an immediate opportunity to improve the lives of the most vulnerable women and children — yet significant challenges remain. A 2024 report published by the Emergency Nutrition Network and UNICEF found that 28 out of 39 countries surveyed reported distribution of MMS to women in humanitarian programs.[22] However, it is unclear how many bottles ultimately reached pregnant women given limited data on usage of MMS in emergency settings.[23]

Effective deployment of MMS in emergency settings around the world will rely primarily on donor funding for humanitarian programs. Donors could, for example, establish pooled financing for an emergency stock of MMS that humanitarian actors could utilize in order to reach pregnant women in emergencies. Prioritizing funding for MMS in emergency contexts will not only have a significant impact on the most vulnerable, but will also create a market shaping opportunity, creating a guaranteed demand for product that can be used to increase affordability and develop adequate supply chains to reach the most vulnerable women.

INDIA: A mother cleans her newborn baby.

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Coordination and Monitoring, Learning, and Evaluation (MLE)

A steadfast commitment to measuring progress across all these elements, and a persistence to change course if coverage and adherence are lagging, will be key to sustainably scaling MMS. Today, just 60% of countries are monitoring the provision of antenatal IFA supplements, and only 36% are monitoring whether pregnant women receive nutrition counseling — a complementary component of administering prenatal supplements.[24] Accountability and action will be crucial to progress once better monitoring is established.

Stimulating MMS demand through the marketplace

The focus of this investment roadmap is on distribution of MMS through government-led public health systems. However, in certain populations and settings, it may be viable for pregnant women to purchase MMS directly from private suppliers. Some governments and funders are actively exploring feasibility within these contexts to understand consumer behaviors and preferences regarding MMS uptake and adherence. These initiatives recognize the importance of leveraging market dynamics and consumer choice to enhance access to prenatal supplements, particularly for populations of women who may benefit from alternative distribution channels. Through careful evaluation and collaboration with private sector partners, we can explore innovative approaches to deliver MMS in ways that complement existing public provision efforts — ultimately maximizing coverage and impact. See the Bangladesh country snapshot in Annex 1 for an example of introduction of MMS via private suppliers.

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CAMEROON: Dawai poses for a photo with his mom Poline.

MALAWI: Bridget Chinseu with her daughter Emmaculate and son Nathan.

© Gates Archive/Andrew Kapakasa

Supplying a High-Quality Product at an Affordable Cost

Sustainably scaling MMS will only happen if it is manufactured with assured quality according to the UNIMMAP formulation, and if it is available for government procurement at affordable prices. Global efforts are underway to expand manufacturing capacity for MMS; however, demonstrated funded demand is critical to driving down prices and increasing production. Concerted and coordinated global action can continue to shape the market for MMS to make it more readily available and affordable.

Manufacturing Capacity

Globally, there are four UNICEF-contracted UNIMMAP MMS manufacturers (Table 2), and manufacturers across Bangladesh, Brazil, China, India, Indonesia, Nigeria, Pakistan, and the USA are at various stages of product development. U.S.-based manufacturer, Contract Pharmacal Corporation, produces 12-15 million bottles of MMS each year — about 80% of total annual available supply — and has the capacity to produce up to 40 million bottles of MMS annually. Kirk Humanitarian and UNICEF Supply Division are actively supporting manufacturers to increase global and local production capacity and create mechanisms to track quality, demand, and supply. As a result of these efforts, it is anticipated that production capacity across suppliers will be able to support the MMS scale-up goal to reach 260 million pregnant women with MMS by 2030. However, donor funding for advanced purchase agreements to support current and future demand is necessary for suppliers to maintain and expand manufacturing of MMS at an affordable price.

In the short term, donated MMS product is readily available and accessible. In the long term, MMS scale-up success is dependent on governments developing and executing a sustainable MMS procurement and financing strategy. In an effort to make manufacturing more locally available, a network of verified regional MMS manufacturers is being formed, from which governments and other stakeholders can purchase a standardized product.

Table 2: MMS Manufacturers

Status	Manufacturer	Region of MMS Supply	Country
Contracted UNICEF suppliers	Bioplus	Global	India
	Contract Pharmacal Corporation	Global	United States
	Lomapharm	Global	Germany
	Renata	Regional	Bangladesh

Quality Assurance

MMS quality assurance is crucial, as low-quality multivitamins with no demonstrated health impacts are common in many markets. To achieve consistent quality at an affordable price, it will be critical to establish a basic product standard for MMS and implement a regimen for independent verification of the quality of manufactured products. This quality control also creates a competitive and sustainable marketplace to reach even more pregnant women. To ensure long-term quality assurance, there is a need for independent product verification programs and strengthening of national regulatory and procurement systems to ensure they procure only UNIMMAP MMS manufactured to internationally accepted product standards.

Mobilizing Resources to Drive Impact

For the first time, this roadmap sets out guidance for a range of stakeholders to invest in transitioning and scaling MMS with clear funding targets and associated impacts. Donor support in the short term can accelerate progress towards fully sustainable, government-led programs. In the long term, sustainable impact relies on country governments strengthening and financing their antenatal care programs to distribute MMS at scale. International donors should act urgently and decisively to mobilize resources to support these efforts. Coordination with country governments at every step is critical to driving impact.

Funding Channels

Based on the investment needs outlined in this roadmap, donors can leverage multiple funding channels to support MMS transition and scale-up:

- **Direct support to governments:** Support can be provided directly to country governments in alignment with their MMS scale-up goals and in response to their interest in scaling MMS. Funds can be utilized to assist government-formed taskforces and technical advisory groups in planning and execution of MMS introduction initiatives.
- **Bilateral funding of programmatic partners:** There are highly experienced local and international programmatic partners already working in coordination with country governments to conduct research and support the scale-up of MMS. Donors can invest strategically in priority geographies to support these efforts and as part of a broader portfolio to improve nutrition for women and children.
- **Contribute to pooled funding mechanisms:** For donors who want to support a range of geographies, support can also be provided to governments via the Child Nutrition Fund. The Fund is led by UNICEF and is a vehicle for structured, phased co-financing of key nutrition commodities for women and children, including MMS. The match window of the Child Nutrition Fund is a catalytic one-to-one matching mechanism that will allow country governments to double their investments in MMS (Box 1).
- **Funding to MMS suppliers:** Maintaining a reliable, high-quality supply of MMS is critical to programming. Funding to suppliers can help scale up manufacturing capacity to meet growing demand and can subsidize suppliers to bring down procurement costs.

In light of constrained resources, it will be important to cultivate more ways to generate catalytic financing for MMS.

Catalytic financing for MMS should ensure:

- **Equity:** Countries with the highest needs and lowest ability to self-finance should receive more support than those with lower needs and stronger finances.
- **Additionality:** New donor resources supporting MMS scale-up should supplement rather than crowd out existing domestic resources for IFA and antenatal care.
- **Supporting government systems:** Financing models should support rather than detract from existing government systems for procurement or management of essential medicines.
- **Long-term sustainability:** Catalytic financing will need to be time-limited, and phased in a way that facilitates progressively increasing levels of national ownership.

By rallying around these catalytic principles, the global community can support domestic ownership, maximize long-term impact, and direct scarce resources to the most nutritionally vulnerable communities.

Coordination of Resources

Coordination of resources will be important for reducing inefficiencies and reaching communities most in need as even more governments set course to introduce MMS and more funders follow their lead with financial support. The mechanisms to ensure alignment of MMS funding are in the early stages of development but are growing — and they can benefit significantly from the leadership and input of all stakeholders. Scaling MMS will mean charting a new course — at country and global level — and there are many opportunities for greater collaboration and impact.

MMS Coordination Mechanisms

- **National MMS Scale-up Taskforces:** Within several countries, such as those listed in Annex 1, country governments, donors, and programmatic partners are leading national MMS scale-up taskforces to effectively coordinate and deploy resources. In countries where these forums do not yet exist, country governments can work with donors and implementing partners to establish a national scale-up taskforce.
- **MMS Supply Forum:** UNICEF Supply Division is coordinating an effort to track the quality, demand, and supply of MMS globally. The forum is actively addressing challenges related to MMS product including quality assurance, regulatory engagement, manufacturer engagement, and country demand.
- **Global MMS Donor Alliance:** The Bill & Melinda Gates Foundation, Children's Investment Fund Foundation, The Eleanor Crook Foundation, and Kirk Humanitarian represent a coordinated, collaborative MMS donor network. Any donor interested in engaging in MMS scale-up and aligning efforts is invited to join regular discussions to coordinate resources. The Global MMS Donor Alliance is also available to offer guidance and best practices to country-level stakeholders, based on experience in multiple countries.

Meeting the Moment with MMS: A New Standard of Care

To accelerate progress toward our global goals and save more lives, we must make greater investments in nutrition for women and children. MMS is an intervention that is ready to scale — and one that helps mothers, children, and communities not only survive, but thrive.

As shown throughout this document, MMS is continuously recognized and recommended as cost-effective and impactful for maternal and child health and survival. Despite the enormous potential to save and improve lives with MMS, few pregnant women in low- and middle-income countries receive it. We cannot allow this inequity to continue any longer.

Setting an ambitious target to reach the majority of pregnant women with MMS across 45 countries with the highest burden of malnutrition sends a clear message that the status quo will not stand. By supporting MMS scale-up, together we can take one step closer to achieving the Sustainable Development Goals, building resilience in the face of mounting climate disasters, and addressing the growing crisis of malnutrition in women and children.

Scaling MMS with a $1.1 billion investment will save more than half a million lives, improve birth outcomes for more than five million babies, and improve health outcomes for over 15 million mothers. Not only will this commitment have direct nutrition and health benefits for millions of women and children, but it will bolster antenatal care and maternal health services to better deliver quality care.

Country governments, bilateral donors, philanthropies, and the private sector can come together now to power this investment roadmap. Together, we can contribute to the global goal of ending preventable maternal and child deaths. The time has come to harness the power of MMS for a healthier future.

INDIA: *Jashodaben bathes one of her grandchildren.*

UGANDA:
Nakanyike Annet with her 3-month-old Natasha

ANNEX 1:

Country Snapshots

Today, a growing number of countries have initiated the introduction of MMS, with plans to scale up these efforts. Under the leadership of country governments and with support from key stakeholders, governments and donors are collaborating with programmatic partners to implement MMS scale-up activities around the world. As a result of these efforts, approximately 12 million women were reached with MMS in low- and middle-income countries in 2022.[g] While this is a strong foundation, further commitment from governments and additional support from donors is essential to achieving the goal of reaching five times more women annually by 2030.

Strong collaboration between country governments, donors, and programmatic partners — as well as coordination with MMS manufacturers and suppliers — is critical to the successful scale-up of MMS. Learnings from five countries that have started the journey to MMS scale-up clearly demonstrates the importance of government ownership and collaboration across stakeholders.

COUNTRY SNAPSHOT:

Bangladesh

21 million pregnant women from 2024-2030

KEY COUNTRY HEALTH INDICATORS		
MALNUTRITION	**MORTALITY**	**DELIVERY**
28% children under 5 stunted	**123** Maternal Mortality (per 100,000 live births)	**91%** 1+ ANC
37% anemia among women of reproductive age	**16** Neonatal Mortality (per 1,000 live births)	**46%** 4+ ANC
10% children under 5 wasted	**21** Stillbirths (per 1,000 live births)	**46%** IFA 90+

Sources: 2018 Bangladesh Demographic and Health Survey (malnutrition and delivery indicators); 2021 World Health Organization estimates (Mortality)

Path to MMS scale-up

The Government of Bangladesh is beginning implementation of MMS as an intervention to improve maternal and child health outcomes. In 2024, the National Nutrition Services (NNS) Institute of Public Health Nutrition integrated MMS into its operational plan and estimated budget to procure 30 million MMS tablets (166,000 pregnancies) per year for public health system distribution. The Government has also included MMS in several national policy documents, established a technical advisory group on MMS, and approved local production and distribution of MMS. Bangladesh is now producing MMS and the product is available for purchase nationwide through pharmacies. Two demonstration projects have been led by the Government, public sector distribution and a market-based model, which have shown improved adherence for MMS compared to IFA.

The Government is partnering with donors including the Bill & Melinda Gates Foundation, the Children's Investment Fund Foundation, Kirk Humanitarian, and the Church of Jesus Christ of Latter-day Saints and programmatic partners including GAIN, Social Marketing Company, Sight and Life, icddr,b, UNICEF, Renata, SGS Bangladesh, The Hunger Project, and Obstetrical and Gynaecological Society of Bangladesh to achieve government MMS introduction and scale-up goals. Partners are supporting key activities such as the set-up of a sustainable business model for MMS through pharmacy network, free demonstration projects in 11 sub-districts, support for local MMS production, and cost-effective analysis. Examples of additional activities donors are currently supporting can be found in Figure 7.

Scaling up MMS in Bangladesh to 60% coverage by 2030 will avert:

- **257,610** cases of maternal anemia
- **285,336** vulnerable births
- **18,953** infant deaths

Figure 7: Current MMS Activities Funded and Opportunities for Additional Donor Support in Bangladesh

Key: **Black** = currently funded by donors, **Teal** = additional donor support needed

	I. BUILDING AN ENABLING ENVIRONMENT	II. DESIGN & TEST IMPLEMENTATION STRATEGIES	III. SCALING & MAINTENANCE	STRATEGIC OBJECTIVES
POLICY/ REGULATORY	» Landscaping & analysis » Stakeholder mapping & engagement » Advocacy	» Policy & guideline development » Roadmap/Scale-up plan	» Policies & guidelines adoption » Inclusion in EML » Operationalize Roadmap	**MMS is included in relevant policies & instruments at all levels of government**
FINANCING	» Cost-effectiveness analysis » Budget impact analysis	» Forecasting » Financing strategy	» Demand planning » Market shaping » Finance mechanisms	**Sufficient funding committed by governments & donors for procurement & delivery of MMS**
QUALITY PRODUCT	» Supply readiness assessment	» Manufacturing support (QA/QC for locally made MMS) » Supply chain strengthening	» Cost-effective procurement coordination » Monitor & address supply chain/ distribution/stock outs	**Sufficient volumes of quality UNIMMAP-MMS are manufactured, available & procured**
DELIVERY CHANNELS	» Strengthening functional distribution channel » Market-based model through pharmacy network » Free demonstration on adherence/feasibility	» System strengthening » Healthcare worker training	» National rollout » Expansion of delivery channels	**Product is available & accessible & pregnant women receive MMS during ANC & consume as recommended**

Opportunities for Additional Donor Support:

Additional donor support is important for various priorities related to scaling up MMS including policy advocacy for MMS inclusion in essential policy documents, like the Essential Medicines List and the 9th Five-Year Plan, as well as strengthening production and supply chains to ensure widespread availability. Additionally, conducting the second National Low Birth Weight survey, launching a country-wide MMS consumer awareness campaign, and supporting capacity building for healthcare professionals are essential to promoting MMS uptake and ensuring effective implementation.

COUNTRY SNAPSHOT:

Ethiopia

30 million pregnant women from 2024-2030

KEY COUNTRY HEALTH INDICATORS		
MALNUTRITION	**MORTALITY**	**DELIVERY**
37% children under 5 stunted	**267** Maternal Mortality (per 100,000 live births)	**74%** 1+ ANC
24% anemia among women of reproductive age	**27** Neonatal Mortality (per 1,000 live births)	**43%** 4+ ANC
7% children under 5 wasted	**21** Stillbirths (per 1,000 live births)	**17%** IFA 90+

Sources: 2019 Ethiopia Mini Demographic and Health Survey (ANC 1+ and ANC 4+, malnutrition indicators), 2022 Food and Nutrition Survey (IFA 90+); 2021 World Health Organization estimates (Mortality)

Path to MMS scale-up

The Government of Ethiopia is currently exploring the implementation of MMS as an intervention to improve maternal and child health outcomes. Efforts are underway to gather evidence on the feasibility of scale given current low antenatal care 4+ and IFA 90+ coverage rates. To achieve successful implementation of MMS in Ethiopia, overall health system strengthening is essential. To pave the way for MMS scale-up, the Government has initiated key activities, including the establishment of an MMS task force and a technical advisory group to support the transition from IFA to MMS. Policy and guideline updates are also in progress, with recent revisions to antenatal care and Adolescent, Maternal, Infant, and Young Child Nutrition (AMIYCN) guidelines. Antenatal care guidelines now incorporate the mention of MMS "when feasible," while AMIYCN guidelines underscore the importance of "multiple micronutrients" during pregnancy. Before full endorsement into policy, the Government has requested additional evidence on feasibility, cost, uptake, and coverage.

The Government is partnering with donors including the Bill & Melinda Gates Foundation, Children's Investment Fund Foundation, and Kirk Humanitarian and programmatic partners including Johns Hopkins University, UNICEF, and Results for Development to achieve government MMS introduction and scale-up goals. In response to Government requests to better understand feasibility of MMS in the context

Scaling up MMS in Ethiopia to 60% coverage by 2030 will avert:

- **803,502** cases of maternal anemia
- **199,623** vulnerable births
- **30,725** infant deaths

of Ethiopia, donors are funding two projects to reach 800,000 pregnant women through public channels by the end of 2025. This work will include supporting the Government with activities including development of a costed roadmap for transition and scale-up of MMS, strengthening of community-based nutrition platforms, utilization of the Child Nutrition Fund, and development of training materials. Examples of additional activities donors are currently supporting can be found in Figure 8.

Figure 8: Current MMS Activities Funded and Opportunities for Additional Donor Support in Ethiopia

Key: **Black** = currently funded by donors, **Teal** = additional donor support needed

	I. BUILDING AN ENABLING ENVIRONMENT »	II. DESIGN & TEST IMPLEMENTATION STRATEGIES »	III. SCALING & MAINTENANCE »	STRATEGIC OBJECTIVES
POLICY/ REGULATORY	» Landscaping & analysis » Stakeholder mapping & engagement » Advocacy	» Policy & guideline development » Roadmap	» Policies & guidelines adoption » Operationalize Roadmap	**MMS is included in relevant policies & instruments at all levels of government**
FINANCING	» Cost-effectiveness analysis	» Forecasting » Financing strategy	» Demand planning » Market shaping » Finance mechanisms	**Sufficient funding committed by governments & donors for procurement & delivery of MMS**
QUALITY PRODUCT	» Supply readiness assessment	» Manufacturing support » Supply chain strengthening	» Cost-effective procurement coordination » Monitor & address supply chain/ distribution/stock outs	**Sufficient volumes of quality UNIMMAP-MMS are manufactured, available & procured**
DELIVERY CHANNELS	» Delivery platform(s) assessment » Exploratory distribution of MMS	» Feasibility study with 800,000 pregnant women » System strengthening	» National rollout » Expansion of delivery channels	**Product is available & accessible & pregnant women receive MMS during ANC & consume as recommended**

Opportunities for Additional Donor Support:

In the near term, funding is needed to support supply chain and service delivery strengthening for MMS. Following completion of the ongoing feasibility study in 2025, additional funding will be required to scale up MMS across all of Ethiopia and introduce MMS as the standard of care for pregnant women. This will require significant investment in expanding access to and increasing the quality of antenatal care systems including training of health care providers. Additionally, funding is needed for MMS supply as costs transition from donors to governments.

COUNTRY SNAPSHOT:

Indonesia

31 million pregnant women from 2024-2030

KEY COUNTRY HEALTH INDICATORS		
MALNUTRITION	**MORTALITY**	**DELIVERY**
22% children under 5 stunted	**189** Maternal Mortality (per 100,000 live births)	**96%** 1+ ANC
23% anemia among women of reproductive age	**11** Neonatal Mortality (per 1,000 live births)	**74%** 4+ ANC
8% children under 5 wasted	**9** Stillbirths (per 1,000 live births)	**38%** IFA 90+

Sources: 2021 World Health Organization estimates (neonatal mortality and stillbirths), SSGI Indonesia Nutritional status Study, 2022 (stunting and wasting), Riskesdas 2013 survey (anemia), Long Form Population Census, 2020 (maternal mortality), Riskesdas 2018 survey (ANC and IFA)

Path to MMS scale-up

Over the past four years, the Government of Indonesia has explored adoption of MMS and is now working towards implementation of the recently approved MMS national scale-up plan. To support MMS introduction, the Government established an Indonesia MMS Taskforce and Technical Advisory Group (TAG) comprised of national stakeholders. Its task has been to provide policy guidance to implementing partners; coordinate implementing partner activities; facilitate entry of MMS onto the national Essential Medicines List; and provide the Ministry of Health (for their final approval) a draft MMS policy and associated implementing regulations needed to replace IFA with MMS as the standard of care; draft implementation guidelines; draft an MMS product standard for local manufacturers consistent with Indonesia's food and drug regulations and internationally accepted quality standards; and develop an MMS scale-up plan — inclusive of but not limited to cost-effectiveness analysis, budget projections, budget impact analysis and a financing plan. The Government has prioritized local production of MMS, with the first locally produced MMS anticipated to be approved for use in 2025. Most recently, the Ministry of Health approved a draft national MMS scale-up plan and associated implementing regulations and is now working to set an official launch date for MMS scaling this year.

The Government is partnering with Kirk Humanitarian, the Children's Investment Fund Foundation, and the Vitamin Angel Alliance as key donors and technical advisors and with international programmatic partners including the Initiative to Advance Implementation Science in Nutrition at the Johns Hopkins Bloomberg School of Public Health, Sight & Life Foundation, and UNICEF to achieve government MMS introduction

Scaling up MMS in Indonesia to 60% coverage by 2030 will avert:

- **402,638** cases of maternal anemia
- **109,498** vulnerable births
- **13,563** infant deaths

and scale-up goals. Additionally, the Government is partnering with several national partners including University of Indonesia, Hasanuddin University, Airlangga University, Padjajaran University, and Indonesia Nutrition Institute (IGI).

To date, the Indonesia National Task Force/TAG in partnership with donors and an array of international and national programmatic implementation partners have successfully supported the government's efforts to create an enabling environment for MMS adoption (including conducting cost-effectiveness and budget impact analyses), identify and test service delivery and MMS supply strategies, and create an MMS scale-up plan. Importantly, critical activities have been undertaken to build local MMS manufacturing capacity (to supply both domestic and regional markets), and develop a social and behavior change strategy and related tools to support MMS adherence. Examples of activities donors are currently supporting and activities where additional donor support is needed can be found in Figure 9.

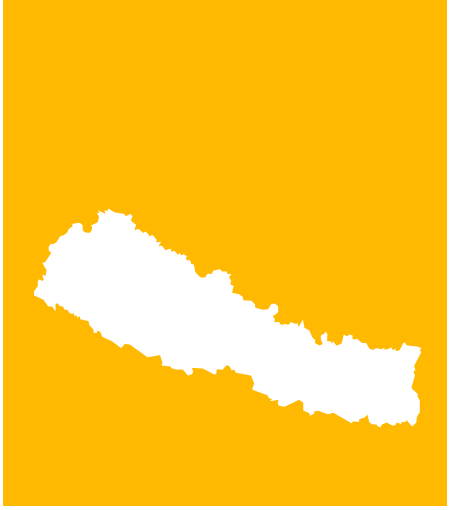
Figure 9: Current MMS Activities Funded and Opportunities for Additional Donor Support in Indonesia

Key: **Black** = currently funded by donors, **Teal** = additional donor support needed

	I. BUILDING AN ENABLING ENVIRONMENT	II. DESIGN & TEST IMPLEMENTATION STRATEGIES	III. SCALING & MAINTENANCE	STRATEGIC OBJECTIVES
POLICY/ REGULATORY	» Landscaping & analysis » Stakeholder mapping & engagement » Advocacy	» Draft policy & guideline development » Develop roadmap/ scale-up plan	» Policies & guidelines adoption » Inclusion in EML and national formulary » Implement roadmap/ scale-up plan	**MMS is included in relevant policies & instruments at all levels of government**
FINANCING	» Cost-effectiveness analysis	» Forecasting scale-up costs » Financing strategy » Budget impact analysis	» Demand planning » Market shaping » Finance mechanisms	**Sufficient funding committed by governments & donors for procurement & delivery of MMS**
QUALITY PRODUCT	» Supply readiness assessment » Identify process to list MMS on national EML	» Test procurement & supply strategy » Set product standards » Manufacturing support » Supply chain strengthening	» Cost-effective procurement coordination » Monitor & address supply chain/ distribution/stock outs	**Sufficient volumes of quality UNIMMAP-MMS are manufactured, available & procured**
DELIVERY CHANNELS	» Delivery platform(s) assessment	» Delivery strategy testing in 12 provinces » Formative research to inform delivery strategy » System strengthening	» National rollout (implementing scale-up plan) » Expansion of delivery channels » Healthcare worker training	**Product is available & accessible & pregnant women receive MMS during ANC & consume as recommended**

Opportunities for Additional Donor Support:

In the short-term, support for key transition and scaling-up activities is needed, including rollout of interpersonal skill communication strategies; training on MMS implementation guidelines; training for regulatory officials; continuing technical support to manufacturers; support to improve quality assurance in the form of product verification services provided by the United States Pharmacopeia; support for importation, relabeling, and warehousing for MMS product to be imported while local manufacturing is being scaled; shipping and onward distribution of donated MMS product being provided for initial scaling-up; and support for all other scale-up activities enumerated in the final approved MMS Scale-Up Plan.



COUNTRY SNAPSHOT:

Nepal

4 million pregnant women from 2024-2030

KEY COUNTRY HEALTH INDICATORS		
MALNUTRITION	**MORTALITY**	**DELIVERY**
25% children under 5 stunted	**239** Maternal Mortality (per 100,000 live births)	**94%** 1+ ANC
34% anemia among women of reproductive age	**21** Neonatal Mortality (per 1,000 live births)	**80%** 4+ ANC
8% children under 5 wasted	**10** Stillbirths (per 1,000 live births)	**86%** IFA 90+

Sources: 2022 DHS

Path to MMS scale-up

The Government of Nepal is currently exploring the introduction of MMS through a partnership with the Eleanor Crook Foundation and Helen Keller Intl. Nepal is uniquely positioned for success given the IFA program has achieved high coverage levels for pregnant women. Eighty-six percent of pregnant women in Nepal benefited from IFA for at least 90 days or more, according to DHS 2022 data. However, because the country continues to grapple with a significant burden of micronutrient deficiencies, Nepal's Ministry of Health and Population has signaled a strong interest in MMS. Women in Nepal grapple with a high burden of micronutrient deficiencies caused by poor nutrition and infectious diseases, among other factors.

In March 2023, Helen Keller Nepal conducted a landscape analysis, funded by Vitamin Angel Alliance, to assess the enabling environment of transition to MMS. The landscape analysis included a desk review of the state of maternal health and nutrition in Nepal and relevant national policies, stakeholders interviews, and a workshop of key stakeholders (i.e., government, professional associations, UN agencies, INGOs) to build consensus on the way forward for MMS.

The Nepalese Government has prioritized generating additional evidence on MMS acceptability and adherence, especially compared to a well-performing IFA program, and operational feasibility. For this reason, Helen Keller is conducting a randomized controlled trial in the Lumbini province to test whether adherence to MMS is at least as high

Scaling up MMS in Nepal to 60% coverage by 2030 will avert:

- **56,078** vulnerable births
- **3,087** infant deaths

as IFA. Demonstration pilots in Nepal's remaining six provinces will explore acceptability of MMS by pregnant women and health care providers. In addition to this research, Helen Keller and Sight and Life Foundation are also conducting a joint supply assessment to facilitate future procurement and distribution of MMS. All these research activities are being overseen by Nepal's Nutrition Technical Committee led by the Family Welfare Division in Nepal's Health Ministry. Examples of additional activities donors are currently supporting can be found in Figure 10.

Figure 10: Current MMS Activities Funded and Opportunities for Additional Donor Support in Nepal

Key: **Black** = currently funded by donors, **Teal** = additional donor support needed

	I. BUILDING AN ENABLING ENVIRONMENT »	II. DESIGN & TEST IMPLEMENTATION STRATEGIES »	III. SCALING & MAINTENANCE »	STRATEGIC OBJECTIVES
POLICY/ REGULATORY	» Landscaping & analysis » Stakeholder mapping & engagement » Advocacy	» Policy & guideline development » Roadmap	» Policies & guidelines adoption » Operationalize roadmap	**MMS is included in relevant policies & instruments at all levels of government**
FINANCING	» Cost-effectiveness analysis	» Forecasting » Financing strategy	» Finance mechanisms to cover the differential costs between MMS and IFA	**Sufficient funding committed by governments & donors for procurement & delivery of MMS**
QUALITY PRODUCT	» Supply readiness assessment	» Procurement mechanisms	» Cost-effective procurement coordination » Monitor & address supply chain/ distribution/stock outs	**Sufficient volumes of quality UNIMMAP-MMS are manufactured, available & procured**
DELIVERY CHANNELS	» Delivery platform(s) assessment	» Randomized controlled trial in one province to establish non-inferiority of MMS and demonstration pilots in remaining provinces	» National rollout » Monitoring of national rollout for quality implementation	**Product is available & accessible & pregnant women receive MMS during ANC & consume as recommended**

Opportunities for Additional Donor Support:

If the Government of Nepal moves forward with a full transition to MMS from IFA, donor funding will be critical to support transition activities such as updating policies, retraining health workers, and refitting supply chains for MMS.

Donor funding will also be needed in the initial scale-up years to address the difference in product costs. Currently, the Nepalese Government supports its IFA programming with domestic resources but repurposing that amount for MMS will not be sufficient to maintain coverage levels because of the slightly higher product cost. Likewise, in the initial years of scale-up, there will also be a cost for monitoring and evaluation to ensure the transition is on track.

COUNTRY SNAPSHOT:

Nigeria

63 million pregnant women from 2024-2030

KEY COUNTRY HEALTH INDICATORS		
MALNUTRITION	**MORTALITY**	**DELIVERY**
32% children under 5 stunted	**1,047** Maternal Mortality (per 100,000 live births)	**67%** 1+ ANC
55% anemia among women of reproductive age	**35** Neonatal Mortality (per 1,000 live births)	**57%** 4+ ANC
7% children under 5 wasted	**23** Stillbirths (per 1,000 live births)	**31%** IFA 90+

Sources: 2018 Nigeria Demographic and Health Survey (delivery, malnutrition indicators); 2021 World Health Organization estimates (Mortality)

Path to MMS scale-up

The Government of Nigeria and select states are currently exploring the implementation of MMS as an intervention to improve maternal and child health outcomes. In 2021, the National Guidelines for the Prevention and Control of Micronutrient Deficiency were updated with a Ministerial Order to include MMS for pregnant women. Additionally, MMS is included in various strategic plans such as the National Strategic Plan of Action for Nutrition 2021-2025. Recently, MMS was approved by the Essential Medicines List (EML) review committee for inclusion in the 8th edition of the Essential Medicines List, subject to Ministerial sign-off. To date, MMS scale-up in Nigeria has been planned in line with government priorities for scale, including demonstrated feasibility in the country context, cost considerations, and sustainability. To facilitate MMS scale-up, the Government is establishing an MMS task force and is leveraging the Child Nutrition Fund.

The Minister of Health has put MMS scale-up as a priority for Nigeria and has requested donor support and engagement.

The Government is partnering with donors including the Bill & Melinda Gates Foundation, Children's Investment Fund Foundation, Kirk Humanitarian, USAID, the World Bank, and the Church of Jesus Christ of Latter-day Saints and programmatic partners including UNICEF, Alive & Thrive, Sight & Life Foundation, Civil Society Scaling Up Nutrition in Nigeria (CS-SUNN), Helen Keller Intl, Nutrition International and Results for Development to achieve government MMS introduction

Scaling up MMS in Nigeria to 60% coverage by 2030 will avert:

- **2,364,032** cases of maternal anemia
- **246,351** vulnerable births
- **70,795** infant deaths

and scale-up goals. In response to government requests for demonstration projects within the context of Nigeria, donors are funding a large-scale MMS demonstration project to reach two million women with MMS across five states: Bauchi, Imo, Kaduna, Kano, and Lagos. The Nutrition Department is leading the MMS scale-up efforts in Nigeria and coordinating the donors and programmatic partners' support across demand forecasting, costed roadmap development, establishment of local manufacturing, improved service delivery and utilization of the Child Nutrition Fund. Examples of additional activities donors are currently supporting can be found in Figure 11.

Figure 11: Current MMS Activities Funded and Opportunities for Additional Donor Support in Nigeria

Key: **Black** = currently funded by donors, **Teal** = additional donor support needed

	I. BUILDING AN ENABLING ENVIRONMENT »	II. DESIGN & TEST IMPLEMENTATION STRATEGIES »	III. SCALING & MAINTENANCE »	STRATEGIC OBJECTIVES
POLICY/ REGULATORY	» Landscaping & analysis » Stakeholder mapping & engagement » Advocacy	» Policy & guideline development » Roadmap » Technical support for state-level policies	» Policies & guidelines adoption » Operationalize roadmap	**MMS is included in relevant policies & instruments at all levels of government**
FINANCING	» Cost-effectiveness analysis	» Forecasting » Financing strategy	» Demand planning » Market shaping » Finance mechanisms	**Sufficient funding committed by governments & donors for procurement & delivery of MMS**
QUALITY PRODUCT	» Supply readiness assessment	» Manufacturing support » Supply chain strengthening	» Cost-effective procurement coordination » Monitor & address supply chain/ distribution/stock outs	**Sufficient volumes of quality UNIMMAP-MMS are manufactured, available & procured**
DELIVERY CHANNELS	» Delivery platform(s) assessment » Exploratory distribution of MMS	» Large-scale MMS demonstration project in 5 states » System strengthening » Proof of concept in additional states	» National rollout » Expansion of delivery channels	**Product is available & accessible & pregnant women receive MMS during ANC & consume as recommended**

Opportunities for Additional Donor Support:

In the near term, funding is needed to support MMS including MMS across the remaining 31 states in Nigeria and introduce MMS as the standard of care for pregnant women. Additionally, funding is needed for capacity building of health care providers and for MMS supply as costs transition from donors to governments.

GUATEMALA:
Mireya Palmieri holds her son, Karim Bougma

ANNEX 2:

MMS Modeling Methodology

Country Sample Selection

The impact and cost of MMS scale-up were modeled across 45 countries (Table 3). Countries were selected by reviewing available data on nutrition and health outcomes impacted by MMS. Estimates were available for three key outcomes: stunting, stillbirths, and neonatal deaths.[h] For each outcome, the top 40 countries with the highest absolute burden were identified. Then a list across all three outcomes was compiled, resulting in 45 countries that account for greater than 85% of the burden of stunting, stillbirths, and neonatal deaths. China was excluded from this analysis due to high gross domestic product (GDP) per capita.

Target Population

Following country identification, the MMS eligible population was calculated across each country from 2024-2030 using methodology from the Lives Saved Tool (LiST) (Table 4). MMS eligible population was calculated as the number of pregnancies that result in live births or stillbirths using United Nations Population Division female population and projected fertility rate estimates.

Table 3: Countries selected for MMS scale-up modeling

Afghanistan	Guatemala	Pakistan
Algeria	Guinea	Papua New Guinea
Angola	India	Phillipines
Bangladesh	Indonesia	Rwanda
Benin	Iraq	Senegal
Brazil	Kenya	Somalia
Burkina Faso	Madagascar	South Africa
Burundi	Malawi	South Sudan
Cameroon	Mali	Sudan
Chad	Mexico	Uganda
Côte d'Ivoire	Mozambique	United Republic of Tanzania
Democratic Republic of the Congo	Myanmar	Viet Nam
Egypt	Nepal	Yemen
Ethiopia	Niger	Zambia
Ghana	Nigeria	Zimbabwe

Table 4: MMS Eligible Population across 45 countries from 2024-2030

	2024	2025	2026	2027	2028	2029	2030
MMS Eligible Population	95 million	96 million	96 million	96 million	97 million	97 million	98 million

MMS Coverage and Pregnant Women Reached with MMS

MMS coverage was assumed to scale linearly, starting with 17% coverage in 2024 and achieving 60% coverage by the end of 2030 (Table 5). The 17% initial coverage was estimated based on 2024 donation projections from Kirk Humanitarian, who currently donates the largest volume of MMS globally.[26] The coverage target was set at 60% MMS coverage across all countries for 2030. However, actual target coverage set by governments during MMS implementation will vary by country based on various factors such as current IFA 90+ coverage, strength of antenatal care systems, and government priorities. Currently, IFA 90+ coverage is just under 40% on average across all 45 countries.

Table 5: MMS Coverage from 2024-2030

	2024	2025	2026	2027	2028	2029	2030
MMS Coverage (% of eligible population)	17%	24%	31%	39%	46%	53%	60%
Pregnant women reached with MMS	16 million	23 million	30 million	37 million	44 million	51 million	59 million

Impact Modeling

Impact modeling was conducted using the Lives Saved Tool (LiST) which was developed by the Institute for International Programs at Johns Hopkins Bloomberg School of Public Health and funded by the Bill & Melinda Gates Foundation. LiST calculates changes in cause-specific mortality based on change in MMS coverage, effectiveness for that cause, and the percentage of cause-specific mortality sensitive to MMS. LiST was used to estimate the number of additional neonatal lives saved, child lives saved, and stillbirths prevented from the scale-up of MMS as well as suboptimal health outcomes prevented (preterm births, small-for-gestational age cases, low birthweight cases, stunting-years, and maternal anemia cases) compared to provision of IFA. The impact of MMS on the reduction of maternal anemia was estimated for the population of pregnant women who would receive MMS beyond current IFA 90+ coverage. Impacts were calculated in each country and added up to determine the total impact of MMS scale-up. Additional information on LiST methodology can be found on the LiST website.

Cost Modeling

Cost modeling was completed across 45 countries. Cost assumptions represent estimates at the global level and may not represent actual country-level costs. Cost assumptions were broken down into three categories: Transition, Scaling, and Supply.

- Transition costs were assumed to be $6.00 per woman, which is applied as a one-time cost to the population of pregnant women who receive 90+ IFA tablets based on latest country-level survey estimates. Country-level survey data was available in 39 out of 45 countries. In countries where survey estimates were not available, the average IFA 90+ coverage across all countries with available

data was used as an approximation. Transition cost is broken down into two sub-categories:

- $2.00 per woman for implementation research to identify effective strategies for delivering MMS and for securing a sustainable supply of MMS product over the long term. This often includes pilot or demonstration programs. This cost estimate is derived from ongoing projects funded by donors in specific countries. To date, implementation research costs have varied between approximately $0.5 million and $5 million per country. These figures were utilized to approximate country-level costs based on population size, resulting in a median cost per pregnant woman of $2.00. However, it is important to note that actual implementation research costs may not scale directly with population size and depend on factors such as the types of research questions the government aims to address.
- $4.00 per woman based on UNICEF estimates for all other transition costs including policy changes requiring advocacy, technical support to governments, training of health workers, adjustment of local supply chains, market shaping, certification processes, development of social behavior change materials, development and execution of a scale-up plan, etc.

» Scaling costs were assumed to be $4.00 per woman based on UNICEF estimates. The cost includes program delivery through health centers and communities, as well as monitoring and supervision. Costs also include antenatal care strengthening to achieve higher coverage rates and are applied only to the population of pregnant women beyond current IFA 90+ coverage from latest country-level survey data.

» Supply costs were assumed to be $2.60 per woman based on latest procurement data from Kirk Humanitarian.[i] Supply costs include the cost of a 180-tablet bottle of MMS and shipping.

Donor Contribution

Donor contribution was analyzed across two dimensions. The first is country income, as countries with a higher gross domestic product typically have a greater budget available for health expenditure and ability to self-finance programs. Country income is also one of the key predictors of the cost of health service provision, indicating the countries with lower income will face a greater cost to scale up MMS.[27,28] Country wealth variation was analyzed using the World Bank country income groups: upper-middle-income, lower-middle-income, and low-income.[29]

The second dimension is geographic region. Countries were categorized using WHO geographic regions: African Region, Region of the Americas, Eastern Mediterranean Region, South-East Asia Region, and Western-Pacific Region.[30] Geographic region serves as a proxy for factors beyond country wealth that could impact the cost of delivering nutrition interventions such as country infrastructure. A study by Bhutta et al. 2013 estimated the regional breakdown of additional costs to scale-up 10 nutrition interventions, including MMS, and found that the South-East Asia Region, Africa Region, and Eastern Mediterranean Region had higher costs than the Region of the Americas and Western-Pacific Region.[31] Therefore, it was assumed that governments in these regions would face a larger incremental cost to scale-up MMS and would likely require greater support from donors.

Country income and geographic region were then used to place countries into three distinct categories with varying levels of estimated donor contribution (Table 6). Donor contributions represent an estimate of the average need across countries within the category and the actual donor contribution will vary based on individual country needs.

Table 6: Anticipated Donor Contribution per Country

Category	Inclusion Criteria	Countries	Donor transistion cost contribution	Donor program cost contribution	Donor supply cost contribution
1	Upper-middle-income countries in Region of the Americas or Western-Pacific Region	Mexico, Brazil, Guatemala	33% from 2024-2030 to support implementation research	0% from 2024-2030	0% from 2024-2030
2	Upper-middle-income countries in Africa Region, Eastern Mediterranean Region, or South-East Asia Region; lower-middle-income countries in Region of the Americas or Western-Pacific Region	Iraq, South Africa, Indonesia, Viet Nam, Philippines, Papua New Guinea	75% from 2024-2030 to support implementation research and select additional transition costs	50% from 2024-2030 to support antenatal care strengthening	100% in 2024, 50% in 2025 and 2026, 33% in 2027 and 2028, and 0% in 2029 and 2030
3	Lower-middle-income countries in Africa Region, Eastern Mediterranean Region, or South-East Asia Region; low-income countries in any region	Remaining 36 countries	100% from 2024-2030	75% from 2024-2030 to support antenatal care strengthening and monitoring and supervision	100% in 2024, scaling down linearly to 33% (1/3rd) by the end of 2030

Notes

[a] The MMS Technical Advisory Group at the New York Academy of Sciences and the Micronutrient Forum convened a technical consultation to develop an open access UNIMMAP-MMS Product Specification for the manufacturing of this product. The UNIMMAP MMS formula includes vitamin A in the form of retinyl acetate (800 mcg RAE), vitamin C in the form of ascorbic acid (70 mg), vitamin D in the form of cholecalciferol (5 mcg, (200 IU)), vitamin E in the form of alpha tocopheryl succinate (10 mg -TE), vitamin B1 in the form of thiamine mononitrate (1.4mg), vitamin B2 in the form of riboflavin (1.4 mg), vitamin B3 in the form of niacinamide (18 mg NE), vitamin B6 in the form of pyridoxine HCl (1.9 mg), folic acid (680 mcg DFE (400 mcg)), vitamin B12 in the form of cyanocobalamin (2.6 mcg), iron in the form of ferrous fumarate (30 mg), iodine in the form of potassium iodide (150 mcg), zinc in the form of zinc oxide (15 mg), selenium in the form of sodium selenite (65 mcg), and copper in the form of cupric oxide (2 mg). Although there are other multivitamins on the market that may benefit women of reproductive age, the benefits discussed in this document as it relates to MMS pertain specifically to the UNIMMAP-MMS formulation that has been used in clinical trials.

[b] National demographic, health, and nutrition surveys in Afghanistan, Angola, Bangladesh, Benin, Burkina Faso, Burundi, Cameroon, Chad, Cote d'Ivoire, Democratic Republic of the Congo, Egypt, Ethiopia, Ghana, Guatemala, Guinea, India, Indonesia, Kenya, Madagascar, Malawi, Mali, Mozambique, Myanmar, Nepal, Niger, Nigeria, Pakistan, Papua New Guinea, Philippines, Rwanda, Senegal, South Africa, Uganda, United Republic of Tanzania, Yemen, Zambia, Zimbabwe

[c] $4 per pregnancy represents an average cost to introduce and scale MMS per pregnant woman (i.e., $1.1 billion divided by 260 million pregnant women reached). Individual costs presented in this document are not applied equally to all pregnant women reached and therefore may not total $4 per pregnancy.

[d] Includes preterm births, small-for-gestational age, and low birthweight

[e] Note: All costs shown are in United States Dollars (USD)

[f] Transition and Scaling costs presented in this plan are only applied to subset women who receive MMS, leading to a total cost per woman of just over $4. Additional details can be found in Annex 2.

[g] Cost numbers presented in this document are estimates based on global averages except where otherwise noted and may not reflect the actual costs at the country level. Country-specific costed roadmaps should be developed to better understand MMS scale-up costs within specific contexts.

[h] Stillbirth burden was calculated using World Bank 2021 Global Health Observatory Estimates (Stillbirth rate per 1000 births). Stunting burden was calculated using UNICEF – World Health Organization – World Bank 2022 Joint Malnutrition Estimates. Burden of Neonatal Deaths was calculated using 2023 UNICEF Neonatal Death Country Estimates.

[i] Per unit cost based on procurement estimates from Contract Pharmacal Corporation (CPC) for 5,000,000 bottles of MMS.

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