

Micronutrient Powders Project: Key Findings



Photo Credit: James Giambrone/WFP

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Kanika Bahl, Managing Director

Scaling MNPs will require a multi-sectoral approach driven by public sector leadership but complemented by innovative micro-franchising and commercial approaches

Challenge

- **Globally, diets of hundreds of millions of children are chronically deficient in micronutrients** – undermining development
- **Micronutrient powders (MNPs)** provide a complete set of vitamins and minerals to address iron deficiency anemia (IDA) in infants, and are easily accepted by caregivers and children
- Procurement of MNPs has risen from ~26 M sachets in 2007 to over 300 M sachets in 2012³, **but coverage remains low**
 - Only a small fraction of the 34 million children 6-23 months in high burden countries targeted for micronutrient supplementation have received them⁴, and <5% of all anemic children globally⁵

Primary strategy

- **Scale MNPs primarily via public sector channels since these channels have the ability to overcome affordability challenges and maximize availability to the poor**
 - Activity led by public sector may still include critical roles for private sector actors – e.g. as procurement, distribution, or behavior change partners
- In **low-income countries**, complement public sector distribution with **socially-oriented approaches** that sell subsidized MNPs to the most vulnerable groups
- In **lower-middle & upper-middle-income countries**, focus public resources on ensuring the poorest have access to MNPs while **considering commercial models** to reach wealthier groups
- Across all channels, utilize effective **behavior change communications / social marketing strategies** to drive awareness and adherence

Sources: (1): Black et al, Lancet 2008, Vol. 371.; (2) Ip H et al, "Improved adherence and anaemia cure rates with flexible administration of micronutrient Sprinkles: a new public health approach to anaemia control," European Journal of Clinical Nutrition (2007), 1-7.; (3) UNICEF and WFP Supply Division – UNICEF alone procured 271 M sachets in 2012; (4): Horton et al, "Scaling Up Nutrition, What Will It Cost?" 2010; (5): Interview with Dr. Stanley Zlotkin (cited by Loewenberg in NY Times, Sept 2012: <http://opinionator.blogs.nytimes.com/2012/09/05/easier-than-taking-vitamins/#more-133577>)

Overview of recommendations

Primary Recommendations

- 1 Channels:** Utilize primarily public sector channels to significantly scale-up MNP distribution, complemented by socially-oriented¹ and commercial channels to expand access
- 2 Resources:** Advocate for and mobilize at least ~\$200M USD annually for MNPs from global and local sources to ensure scale-up

Secondary Recommendations

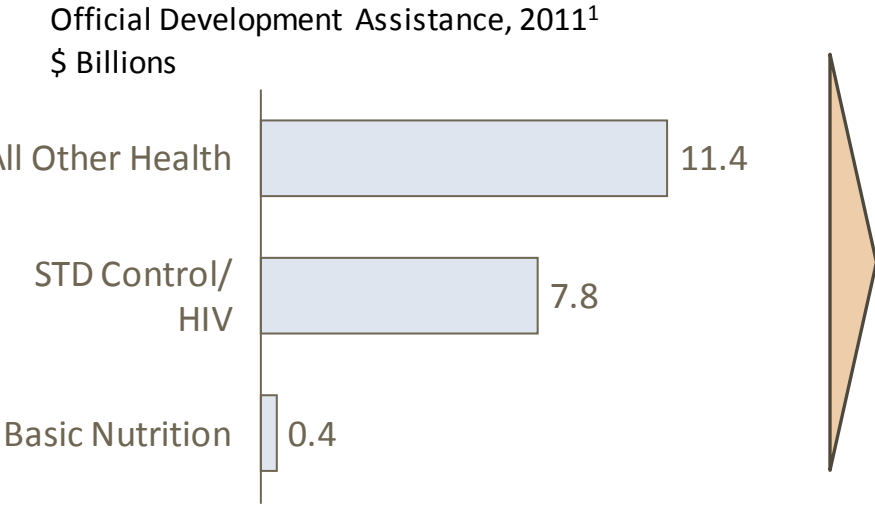
- 3 Suppliers:** Support local suppliers in contexts where their presence can improve political and consumer acceptance
- 4 Guidance/regulation:** Address international guidance and regulatory issues – clarify dosing/formulation and communicate to countries & implementers
- 5 Innovation:** Support suppliers as they continue to refine their products and improve acceptability & health impact

See slides 27-31 for more detail

(1): Socially-oriented models are defined as social marketing and micro-franchising approaches that use private sector tactics to sell subsidized products

Progress in nutrition has been hindered by dramatic underinvestment, though global momentum is building

Despite impact on mortality and economic growth, nutrition has been significantly under-resourced



- Global community has priced the Scaling Up Nutrition (SUN) package of nutrition interventions (which includes MNPs) at **\$11.8B annually** – 26 times current levels of Official Development Assistance (ODA) for basic nutrition (\$444 M in 2011)
- According to the initial 2010 World Bank costing prepared for SUN, **it will cost over \$200M annually** to provide MNPs to targeted children in the 36 highest burden countries

Investment in nutrition produces [economic] **returns up to 16 times** the initial investment
- *Scaling Up Nutrition Task Team*²

(1): All other health includes DAC Codes 120 (Health) and 130 (Population Policy, Program & Repro Health) minus STD Control and Basic Nutrition; STD Control/HIV is DAC Code (13040 – STD Control, including HIV/Aids); Basic Nutrition is DAC Code 12240 (Basic Nutrition) (2): Included in SUN Road Map; aligned with findings from the 2008 Copenhagen Consensus
Sources: OECD data; <http://stats.oecd.org/qwids>; Lancet 2008; 371: 608–21; Source: OECD Data via Creditor Reporting System, 2011: DAC Code 12240: Basic Nutrition; Horton, S., Shekar, M., McDonald, C., Mahal, A., and J.K. Brooks. 2010. *Scaling Up Nutrition: What Will It Cost?* World Bank. Note that SUN is currently updating its costing for all interventions including MNPs

Agenda

- **Project Background & Market Landscape**
- Key Factors Affecting MNP Scale Up
- Recommendations

Micronutrient Powders Project: 2012 - 2013

Project Background

- In June 2012, Results for Development (R4D) launched a Micronutrient Powders (MNP) project, with financial support from the **Bill & Melinda Gates Foundation** and technical support from the **Micronutrient Initiative (MI)**
- Project focused on analyzing MNP market & developing a **scale-up strategy** via *complementary* public & private channels

Project Scope

- Given WHO and HF-TAG's strong recommendation for MNPs as appropriate for addressing iron-deficiency anemia, **project assumed MNPs should be scaled** and sought to identify strategies to achieve this
- Project **did not investigate alternative nutrition products** in development such as lipid-based nutrient supplements or improved complementary foods



Methodology & Approach

- Conclusions are supported by a literature review of sources on MNP interventions as well as interviews with **140 + actors** across the global health marketplace, including countries, suppliers/manufacturers, and global intermediaries (donors, normative bodies, etc.)
- Team assessed a range of MNP projects (public, socially-oriented, and commercial models)
- In addition, team assessed relevant lessons from analogous products such as zinc/ORS, deworming tablets, etc.

Image source: Global Alliance for Improved Nutrition

MNPs have high benefit to cost ratio, but programmatic analysis has not been conducted

- Wesley and Horton in 2011 determined that, for children age 6-12 months in countries w/ high rates of infant mortality, diarrhea, and micronutrient deficiency, the cost to provide MNPs is low at ~ **\$12 to \$20 per disability-adjusted life year** for countries with high rates of infant mortality, diarrhea, and deficiency¹
- Prior work also suggested that the benefit to cost ratio of MNPs could be very high at **37:1**, given iron's impact on enhanced ***cognition and future productivity***²
- More research is essential to determine cost-effectiveness and the cost-benefit ratios of large-scale MNP programs – *though some efforts to determine cost-benefit of national micronutrient programs have been done – e.g. in Albania, where researchers found IDA has a cost of \$5.25 million annually in lost work potential*³

37:1
MNP
estimated
benefit to cost

Sources: (1): Annie S. Wesley, Sue Horton, "Economics of Food Fortification," *Nutrients, Dietary Supplements, and Nutraceuticals Nutrition and Health* 2011; (2): Sharieff W, Horton SE, Zlotkin S. Economic gains from a home fortification program: evaluation of "Sprinkles" from provider's perspective. *Canadian Journal of Public Health*, 2006; in press. (3) Bagriansky, Jack,, "Economic Consequences of Malnutrition in Albania", 2010.

MNP production landscape is concentrated among a few suppliers and has relatively unattractive economics

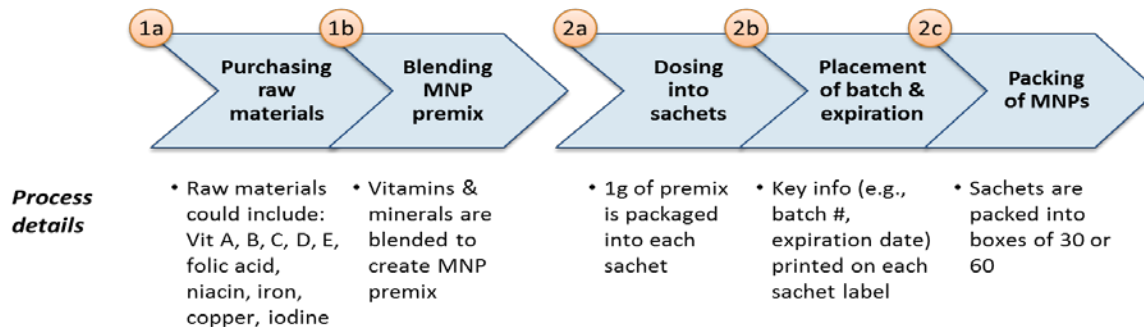
Supplier Overview

- Supplier landscape is mostly comprised of **pharmaceutical** or **'nutraceutical'** companies selling to public purchasers – e.g. Piramal, Hexagon, DSM, Heinz etc.
- Primarily an oligopoly market featuring three suppliers that represent ~90% of sales volumes – DSM (global), Piramal (India), & Hexagon (India)

Competitive Dynamics

- **Corporate social responsibility (CSR)** appears to be a strong motivator for suppliers, as does using MNPs as an entry point to gain access to other product markets
- MNPs often represent a **small fraction** of suppliers' product portfolio & have low margins
- Advantages exist for suppliers that:
 - Are **vertically integrated** (e.g. production cost benefits¹); and/or
 - Involve **local firms** in steps like packaging (e.g. political support and local buy-in)

Process Steps



(1): The cost benefits typically represent a fraction of a U.S. cent per sachet

Sources: R4D estimate based on expert discussions and supplier interviews; Premix is a commercially prepared blend of vitamins and minerals. Examples of MNP suppliers with premix businesses include DSM, Hexagon, Piramal; Photos courtesy of Piramal

Opportunities for MNP cost reduction appear limited

In addition to raw materials and direct costs, other variables can also influence production costs, e.g. -

- Indirect costs: Suppliers' costs associated with overhead, amortization, and taxes may vary depending on how they choose to bill these items to MNPs, compared to their other products
 - E.g., Piramal has reported manufacturing MNPs primarily for CSR purposes, which is likely the reason they attribute low overhead costs to this product

These costs typically represent only a fraction of a cent

Key takeaways

1. Opportunities for **cost reduction appear limited** as:
 - Raw materials are typically fixed at market rates and high quality foil must be used
 - Labor, processing and OH costs < \$.015 per sachet appear appropriate
2. A mix of global and local suppliers should continue to be supported as each offers unique benefits:
 - E.g., While labor may be more expensive in locations like South Africa and Africa, local packaging can improve political will and support for MNP programs, and in some cases, may also provide tax benefits to reduce costs¹



Notes: (1) Some countries, such as Kenya, have reported receiving tax exemptions when importing raw materials rather than a finished product. The taxes on a finished product could increase the total cost to the purchaser beyond the production costs noted here

Agenda

- Project Background & Market Landscape
- **Key Factors Affecting MNP Scale Up**
- Recommendations

Key factors affecting scale-up - “4 A’s”

Demand drivers	Key Points for MNPs
Affordability	<ul style="list-style-type: none"> • MNPs cost ~\$1.80 per 60-day course (\$.03 per sachet) for public sector purchasers¹ • In private sector, price per course can be \$3.30 or greater given retail markups and demand generation cost – unaffordable for lower-income consumers²
Availability	<ul style="list-style-type: none"> • Most countries with high prevalence of anemia among children (e.g. Sub-Saharan Africa, India) have not yet achieved large-scale MNP programs³
Awareness	<ul style="list-style-type: none"> • Limited awareness across consumer income tiers on nutrient deficiency and role of home- fortification in preventing and treating IDA & making children healthier • Home-fortification is still a new intervention that requires significant demand generation and education for caregivers to adopt – requires changes to feeding practices
Acceptability	<ul style="list-style-type: none"> • Leading attributes of MNPs, such as ease of use, lack of taste, and few minor side effects make the product more desirable to consumers than their alternatives (iron drops/syrups) • Thoughtful packaging & labeling & strong communication on side effects and proper administration are required to sustain acceptability & proper MNP utilization

Sources: (1) Interviews with suppliers and UNICEF SD HQ; Public off-take prices range from ~\$.017 to \$.03 per sachet, though new tender agreements may include higher prices; (2) Represents rounded estimates of markups in many geographies – may differ based on geography and specific product types. ; (3) Interview with Dr. Stanley Zlotkin (cited by Loewenberg in NY Times, Sept 2012: <http://opinionator.blogs.nytimes.com/2012/09/05/easier-than-taking-vitamins/#more-133577>); UNICEF 2010 analysis suggested only 2% (6 million) children received MNPs as of 2010 – see Micronutrient Programme Overview, UNICEF, 2010; Source for “Four A Framework”: Sheth, Jagdish N. and R.H. Shah, 2003. Industrial Marketing Management

Key factors affecting scale-up - Affordability

Key Findings

- **Public sector critical as commercial price points are unaffordable:** In situations where MNPs are sold via market channels, products (~\$1.80 per course)¹ are likely to at least double in price –potentially unaffordable to poorest w/ low incomes & limited liquidity
- **Subsidized sales show some promise but should be tested:** Early trials for MNPs and analogous products (e.g. LNS-P) show some WTP at subsidized price levels (~\$.03 per sachet),² but these findings may over-estimate buying behavior and should be tested (e.g. via longitudinal trials such as those underway in Somaliland)
- **Demand side interventions:** including vouchers and savings/credit schemes – have expanded access to food,³ bed nets,⁴ and reproductive products,⁵ but have significant transaction costs⁶
- **Supply side interventions:** including decreasing per unit costs and attaining tax/marketing subsidies – require supply innovation & coordination with governments, but may enhance affordability

Implications for each delivery model

Public sector: given affordability challenges, free distro. via public channels – as in Bolivia with *Desnutricion Cero* –will maximize access and health outcomes. Clinics & extension workers are critical conduits and conditional cash transfer programs (e.g. *Oportunidades in Mexico*) should be considered for targeting vulnerable groups. BCC should be employed to enhance uptake & adherence.

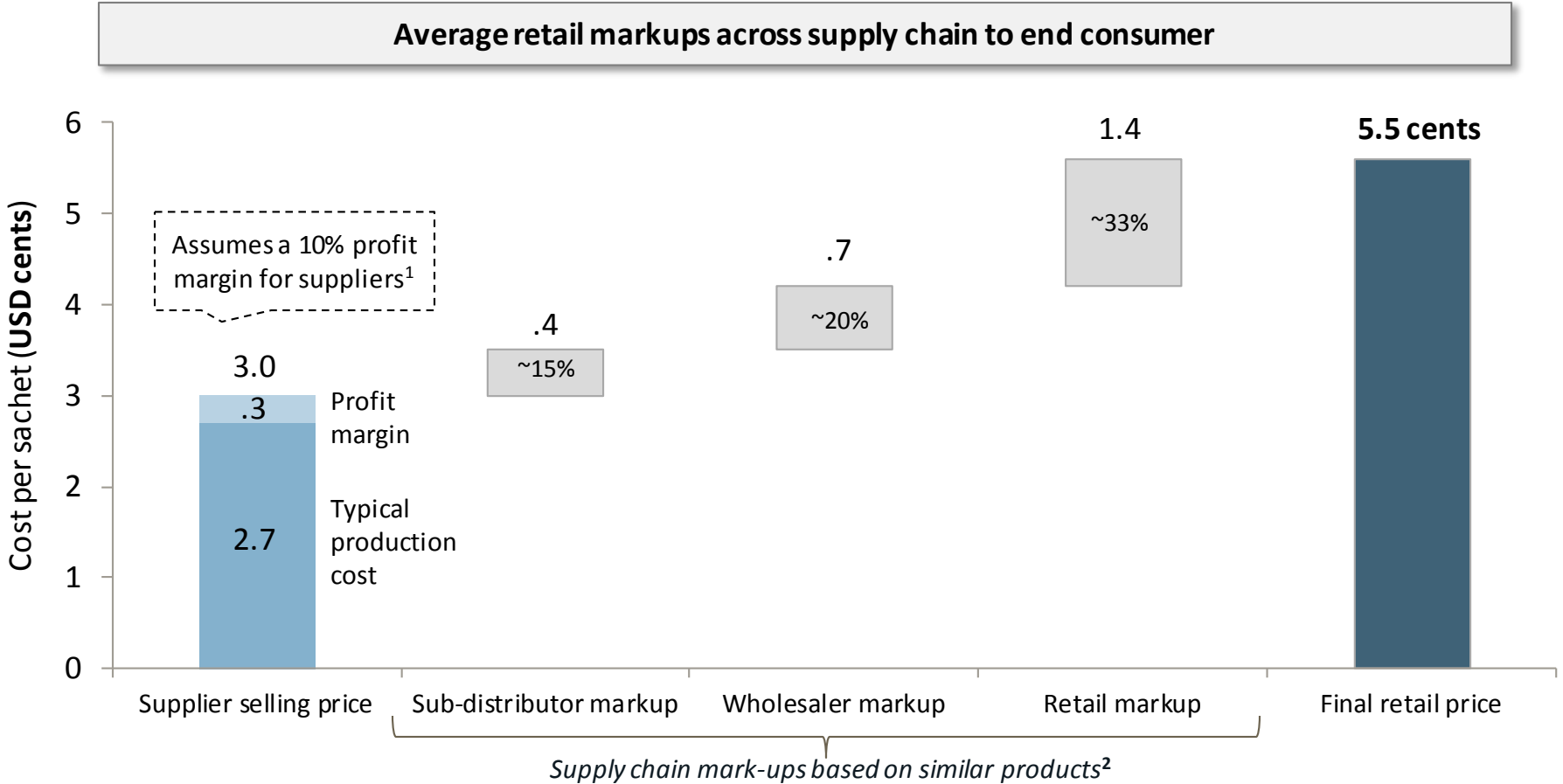
Commercial channels: middle and upper income consumers may have sufficient cash flow and wealth to access MNPs at full commercial prices – in Bolivia, caregivers are now buying locally made MNPs at ~\$.06 per sachet.⁷ Larger scale and longer-term research and data collection is required.

Socially-oriented approaches: social marketing companies can introduce MNPs to low-middle income at subsidized price points, though reach is likely limited; **micro-franchising organizations can** likely offer MNPs at lower prices to wider groups.⁸

Sources: (1) Interviews with suppliers and UNICEF SD HQ; Public off-take prices range from ~\$.017 to \$.03 per sachet, though new tender agreements may include higher prices; (2): Segre et al, "Willingness to pay for lipid-based nutrient supplements for young children in four urban sites of Ethiopia," Blackwell Publishing Ltd, *Maternal and Child Nutrition* (2012). (3): WFP News, "WFP Starts Food Voucher Program in Burkina Faso," 17 February 2009. WFP "Cash and Vouchers for Food," April 2012. (4): Hanson et al, "Household ownership and use of insecticide treated nets among target groups after implementation of a national voucher programme in the United Republic of Tanzania: plausibility study using three annual cross sectional household surveys," *BMJ* 2009;339:b2434. (5): Lindsay Morgan, "More Choices for Women: Vouchers for Reproductive Health Services in Kenya and Uganda," The World Bank, January 2011. (6): Ibid

Retail markups could lead to a final price of 5.5 cents per sachet (~\$3.30 per course) for consumers

ILLUSTRATIVE

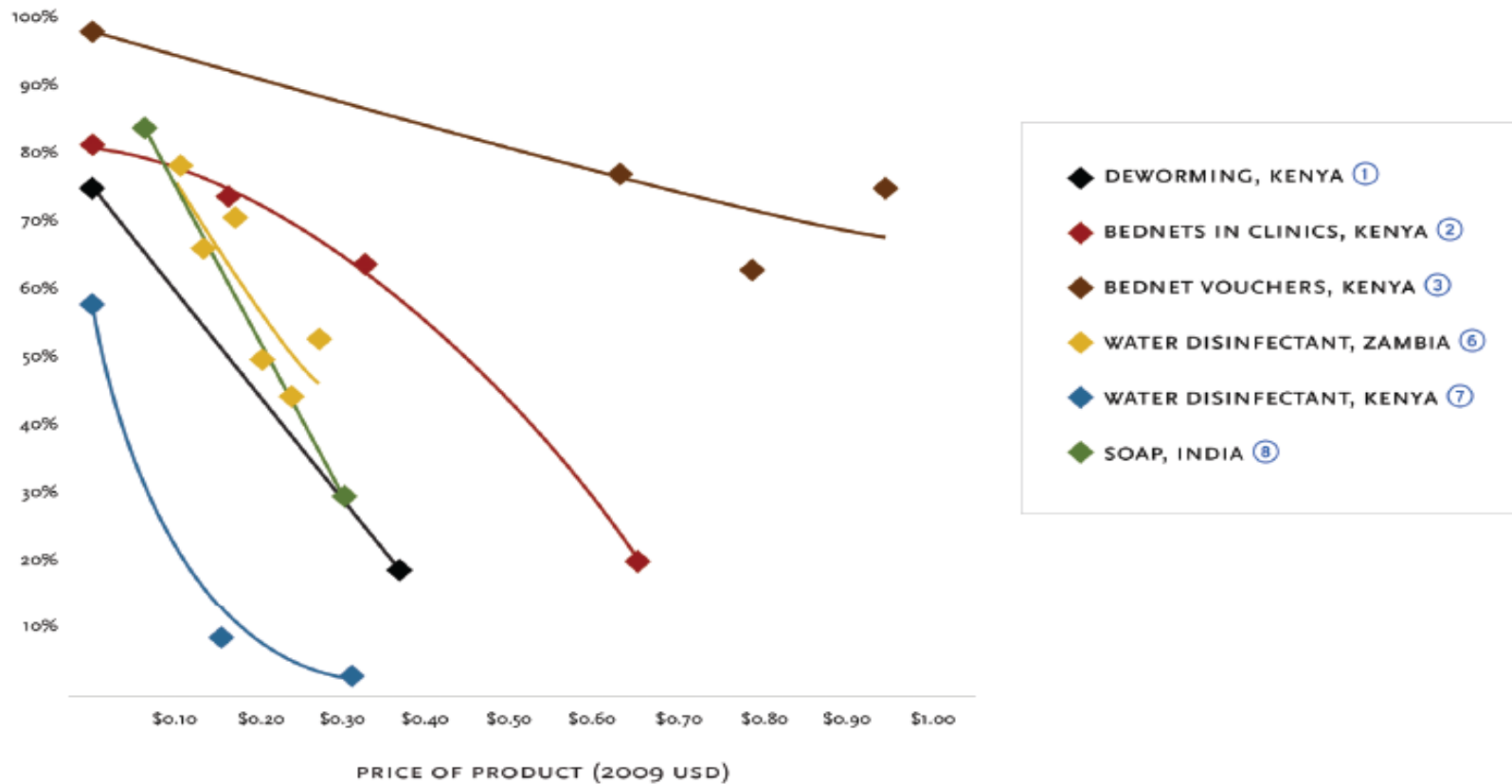


Notes: (1) Discussions with public health pharmaceutical industry experts indicate that an 8-12% profit margin is standard to ensure supplier sustainability. (2) Represents rounded estimates of markups across geographies – may differ based on geography and specific product types

Source: Supplier Interviews 2012

At \$3.30/course, demand is likely to be extremely low

Demand for Preventative Healthcare Products Based on Price



Source: The Abdul Latif Jameel, Poverty Action Lab. "The Price is Wrong: Charging small fees dramatically reduces access to important products for the poor." J-PAL Bulletin: April 2011.

Key factors affecting scale-up - Availability

Key Findings

- **Low current coverage:** since launch of global MNP programs (~2001), coverage has remained low – small fraction of 34 million 6 -23 month olds in high burden countries targeted for intervention have received MNPs¹
- **Public sector essential for increasing global coverage beyond current low levels:** examples from Bolivia, Mongolia, Mexico and Nepal² show public sector can be effective at extending availability – important to leverage practices from other health campaigns, e.g. vaccines
- **Registration:** Each approach to MNP registration has implications for marketing and delivery across channels – e.g. registration as a food allows distro. via retail channels, while registration as a pharma product may enhance product status. *While country context should be considered in registration, registering MNPs as a food product likely to maximize availability³*

Implications for each delivery model

Public sector: critical for reaching poorest,

- Integrate MNPs within health & nutrition programs to capitalize on existing infrastructure & current interactions with caregivers
- Continually refine public sector distribution model to mitigate stock-outs and delays and ensure availability – e.g. in Bolivia, municipalities can procure directly from suppliers to avoid bottlenecks that occurred when procurement was solely via the central government

Commercial channels: important for reaching middle and upper-income individuals, especially in urban areas - many of whom are currently accessing healthcare via private channels (50% for middle and upper income in SSA).⁴ Some potential to leverage CPG best practices and/or private sector medical supply chains (depending on MNP registration status)

Socially-oriented approaches: can expand availability to poor/ most rural by bringing products to household at lower price point. Critical complement to public channels, but coverage limited since social marketing / micro-franchising companies are not in every geography

Sources: (1): Horton et al, "Scaling Up Nutrition, What Will It Cost?" 2010; (5): Interview with Dr. Stanley Zlotkin (cited by Loewenberg in NYTimes, Sept 2012) (2): Team Analysis of Bolivia MNP Program; World Vision PPT, 2011; and Eval of Mongolia Program, 2005 (3): Team analysis; interviews with UNICEF & Other (4): Private Healthcare in Developing Countries, "Source of Healthcare – Sub-Saharan Africa." Per author's notes, all data is drawn from the sum of all Population-Weighted Sub-Saharan Africa Demographic and Health Surveys conducted after 2000.

Key factors affecting scale-up - Awareness

Key Findings

- **BOP unaware:** Many rural poor caregivers are unaware of importance of nutrition - esp. micronutrients – and role of home fortification
- **Extensive demand generation is required** to drive uptake and proper adherence, but creative approaches are necessary - only ~40% of rural poor in India access television¹
- **Messaging key:** Messaging that emphasizes impact of MNPs on child health, intelligence, and growth have been shown to be critical for driving uptake, while social support and interpersonal counseling are critical as well²
- **Know the rules:** Local interpretation of International Code of Breastmilk Substitutes may have implications for demand generation activity – critical for commercial & social marketing companies

Implications for each delivery model

Public Sector Models:

Best practices from Mongolia, Bolivia, Nepal, etc:

- Integrate messaging on MNPs into broader public sector campaigns on nutrition³
- Incorporate MNP programming into existing infant and young child feeding programs essential for sustainability
- Provide MNP-specific medical detailing and training for pharmacists, clinicians, and frontline workers

Commercial Channels:

- Use **innovative BOP demand generation strategies** – e.g.: HUL promotion of PureIT purifier via public⁴ demonstrations and micro-franchise institutions (MFIs)
- Consider public/ donor promotion that **'primes pump'** for branded promotion⁵

Socially-oriented Approaches:

- **Person-to-person marketing** & quality training for vendors have proven critical, as shown in Nyanza, Kenya, and BRAC's program in Bangladesh – in Nyanza, 98% were aware of MNPs, with most learning about them from SWAP vendors⁶

Sources: (1): From "Strategic Innovation at the Base of the Pyramid," Anderson and Markides, MIT Sloan Management Review. (2) : Tadelis, S. and F. Zetzmeyer, 2011. "Information Disclosure as a Matching Mechanism: Theory and Evidence from a Field Experiment." Mimeo ; (3): R4D site visit to Bolivia; (4): R. Ganesan and S. Chankova, "Lessons Learned from the Safe Water Project Pilots in India, Kenya, and Vietnam," 2012 (5): Koh, Karamchandani, Katz, "From Blueprint to Scale," Monitor Group, 2012; (6): Suchdev, "Monitoring the marketing distribution and use of sprinkles micronutrient powders in rural western Kenya," Food and Nutrition Bulletin, 2010.

Awareness Case Study: Though data is limited, implementers have found focusing on child health, growth, and intelligence helpful for uptake & adherence

Compelling MNP Messaging

'Localizing' should include local languages and contextually relevant packaging, but likely incorporate messages around health, growth, and intelligence

- **Kenya:** "...key messages...included increased **child appetite, disease prevention, reduced illness severity, healthier children, and strengthened immunity.** Few home study participants mentioned the prevention of anemia or iron deficiency as an important message" – Jefferds et al, "Formative research exploring acceptability..."FNB 2010
- **Bolivia:** "We are encouraging providers to change their messaging around Chispitas...moving away from the standard public health message on anemia, and instead saying, 'This will make your **baby smart, make him grow tall, and will prevent him from getting sick.**'" – MOH Bolivia

SMC Markets MNPs in Bangladesh



Source: GAIN Website

Sources: Jefferds et al, "Formative research exploring acceptability...", Food and Nutrition Bulletin, vol.31, no. 2, 2010; Ministry of Health, Bolivia

Key factors affecting scale-up - Acceptability

Key Findings

- **Product designed with consumer in mind:** MNPs were invented to solve acceptability problems of iron drops & syrups¹
- **Education remains critical:** Without education and training for caregivers and providers, MNP's inherent acceptability can be at risk – adherence as low as 32% in some cases²

Key features / remaining challenges

- **Ease of use:** ability to add MNPs to a food improves acceptability, but counseling critical to ensure adherence during a 60+ sachet regimen
- **Taste:** caregivers across programs have noted appreciation for the lack of taste in MNPs, though may prove a hindrance when MNPs are compared to sweet & flavored products (e.g. LNS)
- **Side effects:** less frequent and intense than with iron drops, though education critical for mitigating caregivers concern/reactions (e.g. *darkened stool*)
- **Packaging:** locally-appropriate imaging important

Implications for each delivery model

Across all delivery models (public, commercial, socially-oriented)

1. Appropriate guidance to caregivers & providers on side effects (e.g. increased appetite) essential for mitigating concerns/poor adherence
2. Possible to have multiple MNP products/brands available in same geography, but use of generic logos (such as those used with Affordable Medicines Facility for Malaria (AMFm)) that indicate product quality will be important for driving demand & reducing consumer confusion
3. As long as there is some uniformity in formulation or use of generic logos, possible to introduce 'improved' or aspirational forms of MNPs into market place – e.g. Sight & Life's MixMe now includes phytase, which helps with zinc & iron absorption, Biomate's Ying-Ying Bao contains soy

Sources: (1): Ip H et al, "Improved adherence and anaemia cure rates with flexible administration of micronutrient Sprinkles: a new public health approach to anaemia control," European Journal of Clinical Nutrition (2007), 1-7 (2): Home fortification of foods with multiple micronutrient powders for health and nutrition in children under two years of age," Cochrane Database Syst Rev 2011;9:CD008959

Agenda

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- Key Factors Affecting MNP Scale UP
- Recommendations

Primary Recommendations focus on channels & resources

Recommendation

Rationale

Potential Next Steps

1 Channels: Utilize primarily public sector channels to significantly scale-up MNP distribution, complemented by socially-oriented and pure commercial channels to expand access

- Public sector can be effective at reaching majority of children at scale (as seen with vaccination campaigns, etc.)
- Partner w/ private sector where high-impact – e.g. on supply chain mgmt.
- Socially-oriented distro. and pure commercial models can complement public sector initiatives – with precise combination depending on country

- Target additional countries for scale up, using criteria such as need, political buy-in, existing infrastructure, etc.
- Carefully design & test model prior to large-scale implementation

2 Resources: Advocate for and mobilize resources at least \$200 M for MNPs from global and local sources to ensure scale-up

- Nutrition remains chronically underfunded (just over 2% of official ODA to total health, including reproductive health, in 2011) despite huge need and tremendous benefit to cost ratios for MNPs (37: 1)

- Engage SUN and emphasize to donors & governments economic and health benefits to individuals & society of MNPs
- In line w/ 2010 SUN/WB estimate, work with donors & governments to raise at least \$200 M annually for MNPs

Source: Horton, S. et al, 'Scaling Up Nutrition – What will it cost?' 2010. Note: The latest estimates for achieving full coverage of MNPs in SUN countries is determined on the cost basis of approximately \$3.60 per child including both commodity and programmatic costs. As of March 2013, SUN was updating these costs and resource requirements with new numbers forthcoming

Key components of scale-up via the public sector

As the foundation for MNP scale-up, a public sector MNP program must operate as smoothly and effectively as possible

Operational effectiveness is contingent on several key factors related to the level of commitment and resourcing dedicated to the program.



- ❖ **High-level political commitment** – Head of State, MOF, MOH commitment and advocacy for MNP program
- ❖ Sufficient allocation of **resources** domestically and/or internationally to nutrition and especially preventative interventions
- ❖ Significant **awareness-raising efforts** to inform caregivers of the purpose of MNPs, their proper use, and support for continued administration - efforts should utilize ‘best in class’ behavior change
- ❖ Focused effort on **program improvement**– e.g., after recognizing that centralized procurement of MNPs was leading to delays and stock outs, Bolivia shifted procurement to municipal level
- ❖ Where appropriate, integrate MNPs into social assistance programs such as conditional cash transfer programs– e.g., Mexico’s *Oportunidades* program

Source: Team visit to Bolivia; Maclean, “National Distribution of MNP in Bolivia,” Micronutrient Initiative, 2012

Bolivia: well-positioned for mixed-model scale-up

Context

Bolivia is a 'Lower middle income country' per the World Bank, with a GNI per capita of \$4,890 USD (PPP); 51.3% of the population is at/below poverty line.

Anemia among young children is prevalent across all incomes, ranging from 69% in children in the lowest income quintile to 45% in the highest income quintile.



Public Sector MNP Program

- As part of Bolivia's Desnutricion Cero initiative, a national program for MNP distribution (called 'Chispitas') via public sector channels was launched in 2006
- The program targets low-income households who receive Bolivia's universal maternal and infant health insurance, which fully covers full courses of MNPs for children 6-23 months
- In 2011, national coverage of Chispitas among under 2's was 59%

Private sector Complement

- INTI (Bolivian pharmaco) supplies public sector program
- In late 2011, INTI initiated sales of Chispitas (same product presentation) in private pharmacies
- A lack of monitoring/research prevents firm conclusions about sales volumes, consumers, and utilization of Chispitas made available through retail channels; however, Bolivia's income profile and purchasing/care-seeking behavior indicate potential for this emerging commercial model to be a key complement to public sector

Source: R4D Visit to Bolivia, August 2012; World Bank Country Classifications; interviews with MI, MoH, clinicians, INTI, SIGMA, and LAFAR; DHS data, World Bank data; Photo: Micronutrient Initiative

ANNEX

Secondary recommendations seek to improve supply-side & guidance/regulation on MNPs

Recommendation	Rationale	Potential Next Steps
3 Local suppliers: Support local suppliers in contexts where their presence can improve political and consumer acceptance	<ul style="list-style-type: none">• Current landscape is dominated by few suppliers w/ over ~90% of MNP volume between them• Presence of local suppliers (e.g. for packaging or distribution) can be important for boosting political support and improving consumer acceptance	<ul style="list-style-type: none">• Encourage establishment of additional local MNPs suppliers and support existing operations• Global suppliers can provide TA to emerging local suppliers• Multilaterals and governments can split tenders as with RUTF and other commodities
4 Guidance/regulation: Address international guidance and regulatory issues	<ul style="list-style-type: none">• WHO and HF-TAG suggest different formulations/dosing, potentially confusing govt's, implementers, suppliers• Ambiguity at a national level on how to interpret the International Code ¹• in relation to complementary foods	<ul style="list-style-type: none">• Align around a common formulation and dosing standard & communicate to all groups• Develop fact base pertaining to the status of national implementation of International Code
5 Innovation: Support MNP innovation	<ul style="list-style-type: none">• Non-profit arms of major suppliers (e.g. Sight and Life) are working to improve MNP acceptability & health impact, but at significant risk	<ul style="list-style-type: none">• Support additional research that will provide public benefit (e.g. through soft loans/ grants)• Provide technical assistance to additional 'open source' competitions

(1): International Code of Marketing of Breast-milk Substitutes

Global MNP guidance differs by source, causing confusion for implementers

	WHO Guidelines	HF-TAG Guidance <i>(developed by multiple stakeholders for programmatic purposes)</i>	Joint Statement (Emergency)
Formulation	Must include iron, vitamin A and zinc -typically 5 ingredient formulation	15-formulation	15-formulation
Indication	Improve iron status and reduce anemia	Prevent micronutrient deficiencies	Prevent micronutrient deficiencies
Dosing frequency	One sachet per day for a minimum of 2 months, followed by 3-4 months without supplementation before re-starting	Between 60 -180 sachets every six months, at a consumption of no more than one sachet per day	One sachet per day until the emergency is over
Age range	Children aged 6-23 months	Targeted at children 6-23 months, though where micronutrient deficiencies are widespread also include children 24-59 months	All children aged 6-59 months

Sources: WHO Guidelines: "Guideline: Use of Multiple Micronutrient Powders for Home Fortification of Foods Consumed by Infants and Children 6–23 Months of Age," WHO, 2011, http://whqlibdoc.who.int/publications/2011/9789241502030_eng.pdf; Joint Statement: "Preventing and Controlling Micronutrient Deficiencies in Populations Affected by an Emergency," WHO, WFP and UNICEF, 2007, www.who.int/nutrition/publications/WHO_WFP_UNICEFstatement.pdf;