

PAPER 3

# STRENGTHENING THE ENABLING ENVIRONMENT FOR SCALING-UP ACCESS TO GOOD QUALITY COMPLEMENTARY FOODS





---

PAPER 3

# STRENGTHENING THE ENABLING ENVIRONMENT FOR SCALING-UP ACCESS TO GOOD QUALITY COMPLEMENTARY FOODS

January 2016

**Acknowledgements:** We acknowledge the important contribution of a great number of people that have worked with the Global Alliance for Improved Nutrition (GAIN) over the years and who are too numerous to mention by name. Our sincere gratitude goes to national and sub-national governments, which have invested their time and resources, and to our civil society partners who have worked with patience and persistence towards a collective goal. We thank the large network of individual specialists and technical experts, including dedicated staff at Accenture Development Partnerships (ADP), who have enabled the organization to accumulate expertise in the area of innovative models to improve the quality of complementary feeding as part of the promotion of optimal infant and young child nutrition (IYCN). We would like to thank the partner companies that took the risk to explore solutions with us, financing at least 50 percent of the total project investment. The authors wish to thank all GAIN staff who have been engaged in the Maternal, Infant and Young Child Nutrition (MIYCN) program during the past few years, and who have contributed to this paper.

Above all, GAIN would like to thank the Bill & Melinda Gates Foundation for its visionary approach and for the substantive financial support and guidance that it has given to the development of GAIN's MIYCN program and its rapid growth in coverage. We are grateful to other donors who have followed their example and who have invested in GAIN-supported projects to improve availability and accessibility of affordable high quality nutritious complementary feeding, including the Children's Investment Fund Foundation (CIFF), Ireland's Department for Foreign Aid and Trade (Irish Aid), the Khalifa Bin Zayed Al Nahyan Foundation (KBZF), the Netherland's Directorate-General for International Cooperation (DGIS), the UK Department for International Development (DFID), and the United States Agency for International Development (USAID). Our investment partners include Acumen Fund, International Finance Corporation, and LGT Venture Philanthropies.

# ABOUT THE GLOBAL ALLIANCE FOR IMPROVED NUTRITION (GAIN)

Driven by a vision of a world without malnutrition, GAIN was created in 2002 at a Special Session of the United Nations General Assembly on Children. GAIN supports multi-stakeholder partnerships to increase access to the missing nutrients in diets necessary for people, communities, and economies to be stronger and healthier. With a reach of over 900 million people in more than 30 countries, GAIN's goal is to improve the lives of one billion people by 2017 from among the most vulnerable populations around the world via improved access to sustainable nutrition.

This paper forms part of a series of three papers exploring the business models, behavior change components and the enabling environment of GAIN's MIYCN portfolio, all of which are available at:

<http://www.gainhealth.org/programs/maternal-infant-and-young-child-nutrition/#resources>

For more information regarding this paper, contact Marti van Liere at [mvanliere@gainhealth.org](mailto:mvanliere@gainhealth.org)

## **Global Alliance for Improved Nutrition (GAIN)**

Rue de Vermont  
37-39, 1202 Geneva  
Switzerland  
+41 2 2749 1850

## **Contributing authors to this report:**

**Marti J. van Liere, Steve Godfrey, Jonathan Siekmann (consultant), Jane Badham (consultant) and Dominic Schofield.**

# TABLE OF CONTENTS

<b>Acknowledgements</b>	<b>3</b>
<b>Glossary</b>	<b>6</b>
<b>1. Executive Summary</b>	<b>7</b>
<b>2. Introduction</b>	<b>9</b>
<b>3. Building Global Consensus Around the Evidence Base</b>	<b>13</b>
The International MIYCN WG	13
Revising the Codex Alimentarius Guidelines on the Formulation of Complementary Foods and Complementary Food Supplements	16
Addressing the Inappropriate Promotion of Foods for Infants and Young Children	18
The Home Fortification Technical Advisory Group (HF-TAG)	20
Advancing Global Standards and Guidance	22
<b>4. Advancing the Enabling Environment for Complementary Feeding at the National Level</b>	<b>24</b>
Support for Standards and National Guidelines: Understanding the Challenge	24
Protecting and Promoting Breastfeeding: National Application of the International Code of Marketing of Breast-milk Substitutes to Complementary Feeding Products	26
Supporting Home Fortification Activities	26
<b>5. Looking Ahead: The Balance Sheet and Future Challenges</b>	<b>28</b>
<b>References</b>	<b>30</b>
<b>Annex 1</b>	<b>32</b>

# GLOSSARY

CDC	US Center for Disease Control and Prevention
CFS	Complementary Food Supplements
CIFF	Children's Investment Fund Foundation
DFID	UK Department for International Development
DGIS	Netherlands' Directorate-General for International Cooperation
ECD	Early Childhood Development
EFA	Essential Fatty Acids
FAO	Food and Agriculture Organization
FCF	Fortified Complementary Food
GAIN	Global Alliance for Improved Nutrition
HF-TAG	Home Fortification Technical Advisory Group
HKI	Helen Keller International
IFPRI	International Food Policy Research Institute
Irish Aid	Ireland's Department for Foreign Aid and Trade
IYCF	Infant and Young Child Feeding
IYCN	Infant and Young Child Nutrition
JSI	John Snow International
KBZF	Khalifa Bin Zayed Al Nahyan Foundation
KEBS	Kenyan Bureau of Standards
LNS	Lipid-based Nutrient Supplements
MIYCN	Maternal, Infant and Young Child Nutrition
MIYCN WG	Maternal, Infant and Young Child Nutrition Working Group
MNP	Multi-Nutrient Powder
NGO	Non-Governmental Organization
PATH	Program for Appropriate Technology in Health
RNI	Recommended Nutrient Index
SCN	Standing Committee on Nutrition
STAG	Scientific and Technical Advisory Group
SQ-LNS	Small quantity-lipid-nutrient supplements
UC Davis	University of California, Davis
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
VMD	Vitamin and Mineral Deficiency
WFP	World Food Programme
WHA	World Health Assembly
WHO	World Health Organization

# 1. EXECUTIVE SUMMARY

Adequate nutrition during infancy and early childhood is recognized as fundamental for children to develop to their full potential. Correspondingly, inappropriate feeding practices and their consequences are major obstacles to sustainable socio-economic development and poverty reduction. Supported by appropriate care practices, optimal infant and young child feeding is based on two key pillars – a) the early initiation of breastfeeding and exclusive breastfeeding for the first six months of life, followed by b) the introduction of timely, safe, appropriate, and high-quality complementary food at 6 months of age (180 days) while continuing to breastfeed to 2 years and beyond. Strengthening the enabling environment for improved access to good quality, affordable complementary foods in resource-poor settings was identified by GAIN as a strategic area for action.

Poor nutrition affects hundreds of millions of infants and contributes to unacceptably high levels of stunting.

Since 2008, GAIN has sought to improve the nutrition of children aged 6 months to 24 months. This has been through fostering partnerships across multiple sectors, specifically government, non-governmental organizations (NGOs), the private sector, and academia. Funded by an initial grant of US\$38.8 million from the Bill & Melinda Gates Foundation, and with other donors joining over time, GAIN's Infant and Young Child Nutrition (IYCN) program combines proven IYCN interventions – such as the protection and promotion of breastfeeding – with a novel focus exploring the potential role of the markets in reaching low-income families with appropriately formulated complementary foods or complementary food supplements, for example, multi-nutrient powders (MNPs) and small quantity-lipid-nutrient supplements (SQ-LNS). The program encompasses a diverse set of 23 IYCN projects in 17 countries in Africa, Asia, and Latin America and the Caribbean, leveraging three times the original investment, reaching 20 million infants and young children.





This third paper in the IYCN series sets out what GAIN, in collaboration with others, learned in this complex and challenging area of work. GAIN sought to act as catalyst, facilitator, and participant of a global scientific and technical dialogue. Through the initiation of two major mechanisms (the MIYCN Working Group and the Home Fortification Technical Advisory Group), GAIN has contributed to consensus building based on existing scientific evidence, contributed to the translation of science into evidence-informed policy, and helped to establish the role and boundaries of private sector in delivering IYCF solutions.

Updating and aligning global recommendations and standards with the latest evidence, research and best practice, GAIN has been able to advance the enabling environment including market-based approaches to improve access to good quality complementary feeding products by low-income families. This work is an integral part of our continued efforts to improve access to good quality complementary foods in the context of the promotion of optimal infant and young child feeding and care practices.

The efforts of GAIN and its partners to strengthen the enabling environment have provided leadership and some successes in this complex arena. However,

sustaining this effort faces continuous challenges. Unless we can align our understanding of the nutritional needs of poor children better and translate this into guidelines for policies and programs, the high level of child malnutrition and consequent health and development problems will persist and hinder the investments needed to scale-up and sustain solutions.

What is needed now is much greater emphasis on evidence gathering of integrated approaches, whilst at the same time linking this to better policy and regulation. More upstream investment in this policy setting is critical to unlock sustainable solutions to reducing global malnutrition levels. There remains a lack of investment to support policy fora and networks of experts and stakeholders to advance public policy around complementary feeding.

GAIN's experience and lessons learned regarding economic models to improve the availability and affordability of high quality commercially produced complementary foods and related products – and access to them – as well as behavior change communication and demand creation for these products, are described in Papers 1 and 2 respectively of the GAIN IYCN Series.

# 1. INTRODUCTION

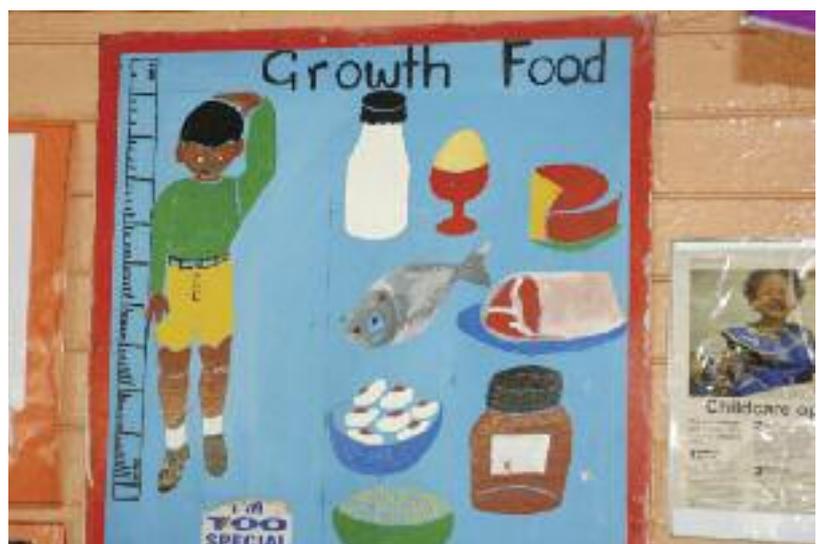
Adequate nutrition during infancy and early childhood is globally recognized as fundamental to the development of children's full human potential. Correspondingly inappropriate feeding practices and their consequences are major obstacles to sustainable socio-economic development and poverty reduction in resource-poor settings. Strengthening the enabling environment for improved access to good quality, affordable complementary foods has been identified by GAIN as a strategic area for action.

Funded by an initial grant of US\$38.8 million from the Bill & Melinda Gates Foundation, and with other donors joining over time (including Children's Investment Fund Foundation (CIFF), Ireland's Department for Foreign Aid and Trade (Irish Aid), the Khalifa Bin Zayed Al Nahyan Foundation (KBZF), the Netherlands' Directorate-General for International Cooperation (DGIS), UK Department for International Development (DFID), and the United States Agency for International Development (USAID)), GAIN's Infant and Young Child Nutrition program combines proven IYCN interventions – such as the protection and promotion of breastfeeding – with a novel focus exploring the potential role of the markets in reaching low-income families with appropriately formulated complementary foods or complementary food supplements (i.e. multi-nutrient powders (MNPs) and small quantity-lipid-nutrient supplements (SQ-LNS)). The program included a diverse set of 23 IYCN projects in 17 countries in Africa, Asia, and Latin America and the Caribbean, leveraging three times the original investment, reaching almost 20 million infants and young children with good quality foods alone, and considerably more with optimal infant and young child feeding (IYCF) messaging over a 7 year period.

Supported by appropriate care practices, optimal IYCF is based on two key pillars – the early initiation of breastfeeding and exclusive breastfeeding for the first 6 months of life, followed by the introduction of timely, safe, appropriate and high-

quality complementary food at 6 months of age (180 days) while continuing to breastfeed to 2 years and beyond. With respect to breastfeeding, while much has been done to promote and protect exclusive breastfeeding, more concerted action is necessary to address low levels of compliance. The second global Access To Nutrition Index report (ATNI) released in January 2016 indicates that the best level of compliance with the ATNI BMS assessment methodology is only 36% (Access to Nutrition Foundation, 2016). The second pillar – appropriate complementary feeding – has barely begun to be addressed effectively.

Over 159 million children remain stunted (IFPRI, 2015) and an estimated 3.1 million child deaths are attributed to malnutrition during the first 1000 days, from conception to 2 years of age (Black et al 2013) with lasting consequences for health, growth, and development among those who survive. Studies have shown that both the introduction of foods other than breastmilk before 6 months of age and prolonged exclusive breastfeeding beyond 6 months of age are associated with higher risk of malnutrition and poor growth (Fawzi et al 1998, Caulfield et al 1999). Guidance on nutrient density and feeding practices exist but is highly complicated for mothers to put into practice.



In addressing complementary feeding practices, locally available, accessible, and culturally acceptable foods should always form the basis of the diet of older infants and young children above 6 months. However, due to their high nutrient requirements, in relation to the amount of food consumed, complementary foods require a higher nutrient density than many of the foods commonly prepared as part of the family diet. The high costs and some cultural practices associated with animal sourced foods can further distance the access to adequate nutrition by low income households.

In addition to limited access to good quality protein and balanced essential fatty acids, reviews suggest that there may be limitations in meeting all the dietary requirements of older infants and young children in certain countries – especially iron, zinc, calcium and possibly vitamin A, niacin, and riboflavin - through the currently available and commonly used local ingredients and foods (Osendarp et al, 2016). This implies that the dietary intake of older infants and young children needs special attention and that they should be consuming foods that have been especially selected or prepared to ensure adequate nutrient density. A number of commercially available and affordable solutions to improve the quality of complementary foods have been developed during the past few years, including industrially processed fortified complementary foods, based on locally available and acceptable ingredients, and MNPs that are now available in more than 50 countries worldwide ([www.hftag.org](http://www.hftag.org)).

## Identified needs

While national governments and program implementers could rely on good quality materials related to the promotion of optimal breastfeeding, it became clear to GAIN early on that this was not matched with equally robust and clear guidance on optimal complementary feeding and care practices. In its absence, there is a genuine risk of introducing inappropriately formulated and inappropriately marketed complementary feeding products through market-based channels, which could undermine optimal breastfeeding and complementary feeding practices.

The following gaps and needs were identified and consequently addressed with support of GAIN through existing or new mechanisms.

### 1. Convening of scientific experts to establish consensus regarding existing evidence

Significant gaps existed in the knowledge and there was a lack of consensus regarding the formulation and utilization of specially formulated foods and food supplements for older infants and young children. For example:

- Although MIYCN was high on the global agenda, there was a need to guide and support the evidence base for the nutritional aspects of fortified complementary foods (FCF) and complementary food supplements (CFS) such as SQ-LNS and MNPs, and to support the adoption and strengthen the implementation of the International Code of Marketing of Breast-Milk Substitutes (WHO, 1981).
- Although home fortification (or point of use fortification) of complementary foods was recognized as a promising intervention, there was no central repository of knowledge and experiences to guide and assist in improving home fortification programs.

### 2. Translating science to evidence-informed policy

There was a clear need, especially in low- and middle-income countries, for policy guidance from global normative bodies in order to establish product standards and a clear regulatory environment for product quality, packaging, labeling, and promotion. This remains fundamental to ensuring optimal IYCF at the national level. For example:

- There was no single, up-to-date, evidence-based reference for product formulation guidance for FCF and CFS around which product standards could be set and products intended for local production and market-based delivery registered. Tools to guide and assist with product formulation were also absent.
- The 1991 Codex Alimentarius 'Guidelines on Formulated Supplementary Food for Older Infants and Young Children' (CAC/GL 8-1991), was outdated and not in line with the latest scientific evidence, and
- The need to provide clarity and guidance for the appropriate promotion of industrially processed complementary foods was identified, given weak reference to the subject in the International Code of Marketing of Breast-milk Substitutes (WHO, 1981) and associated World Health Assembly (WHA) Resolutions.

### 3. Establishing the role and boundaries of the private sector in delivering nutritional solutions for IYCF

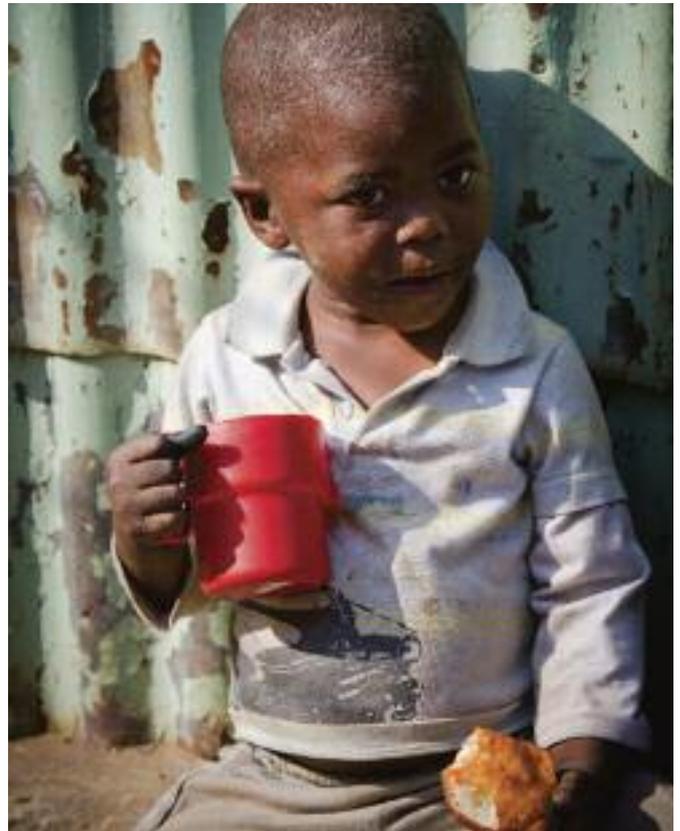
While the inclusion of appropriately formulated and widely available commercially produced complementary foods in the diet of older infants and young children is the norm in many countries, these foods are often expensive and unaffordable to low-income households in developing countries. While it should be possible to catalyze markets to address this problem, it is inhibited by the lack of collaboration between public health and the private sector actors in the nutrition sector beyond procurement arrangements. The problem is further complicated by a general concern among public health policy makers and practitioners who fear that commercially produced foods and food supplements will displace breastfeeding, or replace cheaper local indigenous foods and promote “unhealthy” foods with an undesirable nutrient intake.

The GAIN program sought to disaggregate these issues and focus on adequate, nutrient-dense local diets while also targeting the establishment of a place for appropriately formulated commercially produced foods which contribute positively to healthy diets, and which are generally used together with local foods to fill common nutrient gaps in the diets of infants and young children.

### 4. Enabling and facilitating open and transparent dialogue based on the evidence

In order to catalyze significant change, a key principle of GAIN’s efforts has been to facilitate open, evidence-based multi-sectoral dialogue with the aim of creating sustainable solutions at scale.

To succeed, this has required breaking down the barriers between the traditionally ‘silo-ed’ interventions that drive policies and action on breastfeeding and complementary feeding, early childhood development, behavior change interventions, product promotion and marketing, and investment in delivery channels. A wide range of diverse stakeholders including nutrition scientists, food technologists, policy makers, and program implementers are needed to contribute their expertise to both the research and policy arenas. By forming broad alliances and engaging in new avenues of dialogue, consensus was achieved leading to consistent and clear guidance and resources for national governments, programmers and the private sector to expand the development, manufacturing, and promotion of appropriate foods for optimal IYCF.



Infant and young child feeding triggers emotional and deeply held views as to the role of the private sector in tackling health issues. GAIN has experienced first-hand how polarized and complex the policy debate is around the desirability, viability, and sustainability of market-based solutions – those either already at play, or as part of a solution to sustain large scale access to improved nutrition. In many cases this has made evidence based dialogue even more difficult, both for gaps in evidence and due to opposing ideological perspectives on solutions held by key stakeholders.

The policy process – at both the global and national levels – has required the involvement and coordination of numerous stakeholders and the appropriate use of the evidence in informing policy decisions. It has been critical that scientists, technical and programming experts, and government officials come together to discuss and debate and ultimately make informed decisions. Working with strategic multi-stakeholder alliances has provided the necessary basis of credibility, trust and transparency needed. Furthermore, since food systems and practices are culturally and locally determined, there is no “one size fits all” solution to this challenge.

In partnership across multiple sectors, specifically with government, NGOs, the private sector, and academia, GAIN has:

- Facilitated and supported processes at the global and national level to progress consensus on the scientific evidence
- Supported the development of product formulation standards and guidance on IYCF and updating and aligning global recommendations and standards with latest evidence, research, and best practice
- Assisted in the creation of an enabling policy environment through the translation of evidence and global standards to ensure evidence-informed policies at the national level
- Developed and tested novel market-based approaches to overcoming barriers related to investment, availability, affordability, accessibility and utilization of nutrient rich complementary foods and food supplements to inform policy
- Establishing inclusive and strategic alliances to evolve evidence-informed policy and regulations

In addition, GAIN helped to establish the MIYCN Working Group (MIYCN WG) and the Home Fortification Technical Advisory Group (HF-TAG) to help consensus building

amongst experts. Whereas researchers often play an advisory role in the early phases of policy development processes, academics, practitioners, and NGO's rarely engage in the subsequent dialogues and final policy formulation at the WHA and Codex meetings at the global level, or Bureau of Standards and Ministries at the country level. Continuous coordination and consensus-building amongst constituencies will remain of utmost importance to ensure that evidence-informed policies and guidelines are developed at both the global and national level.

This third paper in the IYCN series sets out what GAIN, in collaboration with other partners, learned in this complex and challenging area of work, aiming to create an enabling environment for nutritious foods for young children, embedded in a strong regulatory framework. It is an integral part of our ongoing efforts to improve access by the poor to good quality complementary foods in the context of the promotion of optimal infant and young child feeding and care practices.

GAIN's experience and lessons learned regarding economic models to improve the availability and affordability of high quality commercially produced complementary foods and related products – and access to them – as well as behavior change communication and demand creation for these products, are described in Papers 1 and 2 respectively of the GAIN IYCN Series (GAIN, 2015a and 2015b).



## 2. BUILDING GLOBAL CONSENSUS AROUND THE EVIDENCE BASE

As part of the MIYCN program, GAIN sought to act as catalyst, facilitator, and participant of a global scientific and technical dialogue. The aim was to create technical consensus and build alliances needed to develop a framework and enabling environment that includes market-based approaches to improved access by the poor to good quality complementary feeding products. Specifically these alliances contributed to the following:

- **Key stakeholder engagement** and mobilization through evidence-informed policy dialogue, national committees, and multi-stakeholder technical advisory groups
- Identifying gaps in, and further building, the necessary **evidence-base** by bringing scientists together to discuss, identify, and ultimately publish results of studies, analysis, and reviews
- Building the evidence-base relating to critical components of industrially processed complementary foods for optimal health and development, home fortification best practices and Early Childhood Development (ECD) and nutrition linkages
- Developing **technical consensus** through a number of mechanisms such as the HF-TAG; the MIYCN WG, Codex Alimentarius, through support to the World Health Organization (WHO) on multi-country nutrition investment readiness assessments and the Management of Moderate Acute Malnutrition Guidelines, through support to the improvement of IYCN formative research and planning tools, and through targeted support to research priorities presented at scientific and technical fora and published in peer review journals
- Addressing priorities regarding **regulatory gaps** and barriers at the global and national levels through the development of normative guidelines and formulations to inform policy and standard setting with national-level bureau of standards, health ministries, and other national authorities;
- Translating **global guidance** and technical consensus on evidence to **national MIYCN and Child Survival Strategies** and **implementation plans**
- Facilitating the **harmonization of IYCN messaging** and promotion delivered by governments, civil

society, and the private sector through multiple channels that reflect internationally accepted ethical practices at the national and sub-national levels

The GAIN MIYCN program dealt with a range of policy questions through the engagement of nutrition and other expert groups. These included:

- Recommended **nutritional composition** and quality assurance guidelines for industrially processed complementary foods
- **Good practice** in ensuring that program beneficiaries and consumers are protected from misleading product-related messaging and benefit from adequate and accurate product-related information aligned with optimal IYCF and care practices, to help consumers to distinguish between inappropriate products and those specifically formulated for IYCF
- Best practices for **implementation of IYCN programs** that include home fortification of complementary foods.



To ensure broad technical alignment and wider acceptance of products developed through GAIN-led projects, GAIN facilitated dialogue between a wide range of scientists to improve technical consensus at the national level, and by providing financial and secretarial support to two expert working groups: the MIYCN WG and the HF-TAG. The objectives, activities, and results of these two groups are described below.

## The International MIYCN WG

### History and objectives

The MIYCN WG was formed in 2007 under the Ten Year Strategy to Reduce Vitamin and Mineral Deficiencies (VMD) initiated by the most active members of the international nutrition community focused on micronutrient malnutrition at that time (GAIN 2006, Sanghvi et al 2007).

The aim of the group was to focus attention on integrating actions to improve MIYCN across the different stages of the key window of opportunity from preconception through pregnancy, the period of exclusive breastfeeding (0 to 6 months), and the target age for complementary feeding (6 to 24 months).

Through this WG it has become clear that program managers, policy makers and researchers have a full understanding of how nutrition during each of these different phases can affect the health outcomes that are the focus of their efforts. Understanding the synergistic effects of improved nutrition across these different phases, and which interventions are appropriate during each phase, is necessary in order to work jointly, efficiently, and with greater success to reduce the persistent high rates of stunting and micronutrient deficiencies.

Part of the mandate of the group was to consider the evidence base for the nutritional aspects of fortified complementary foods (FCF) and complementary food supplements (CFS), such as MNPs, for optimal infant and young child health and development. It was also to support the adoption and strengthen the implementation of the International Code of Marketing of Breast-milk Substitutes (WHO, 1981). Other working groups were established to address supplementation and dietary diversity led by other organizations.

The MIYCN WG was structured as a virtual network including over 100 global scientists and technical experts from universities, development agencies, international NGOs, civil society organizations, and government public

health agencies<sup>1</sup>. In order to cultivate broad-based consultation, collaboration, and collective ownership of the process, the MIYCN WG was organized around five priority areas each led by a recognized expert from one of the member organizations. GAIN served as its secretariat.

The original terms of reference for the MIYCN WG were developed by the Ten Year VMD Strategy Initiative and approved by the original MIYCN WG at its first meeting. GAIN's responsibilities were to establish the group, convene meetings, liaise with other relevant working groups, represent the group in reference meetings, and present group reports. The terms of reference specified that the MIYCN WG principally focused efforts on "improving IYCN through increased access to, and use of, fortified foods and supplements for low-income women, infants and children". The specific objectives were to:

1. Disseminate guidelines on the appropriate composition of **appropriately formulated complementary foods and supplements** for older infants and young children
2. Enhance **integration of breastfeeding** and the other guiding principles of optimal infant and young child feeding with the promotion of fortified complementary foods and supplements
3. Disseminate successful strategies for delivering **commercially produced products** to low income groups while ensuring their appropriate use
4. Provide guidance on **monitoring/evaluation to assess intervention effectiveness** and delineate research priorities.

The strategic importance of the MIYCN WG was that it brought together experts focused on nutrition in the 1,000 Day Window of Opportunity (World Bank, 2006), when improved nutrition can have a life-changing impact on a child's future and help break the cycle of poverty. At the time of the establishment of the MIYCN WG, a group by the same name was operating as part

<sup>1</sup> Original Working Group members represented the following organizations: Academy for Educational Development (AED); Bill and Melinda Gates Foundation (BMGF); Centre for Disease Control (CDC, US) and CDC, China); DSM; GAIN; Helen Keller International (HKI); International Food Policy Research Institute (IFPRI); International Life Sciences Institute (ILSI); Institute of Child Health (ICH, UK); Instituto de Investigacion Nutricional (IIN, Peru); Institut de Recherche pour le Développement (IRD, France); La Leche League International; Manoff International; Micronutrient Initiative (MI); Nutrilite, Pan-American Health Organisation (PAHO); PATH; Population Services International (PSI); Save the Children; Society for Applied Studies-Delhi, India; SUSTAIN; University of California, Davies; UNICEF; UNILEVER; World Food Program (WFP); World Bank; World Health Organisation (WHO).

of the UN Standing Committee on Nutrition (SCN), focused primarily on promoting the evidence base for optimal breastfeeding. Many members shifted to the new group under the Ten Year VMD Strategy process which had wider participation of organizations implementing IYCN programming and which introduced more attention to issues of optimal complementary feeding and care practices, in addition to breastfeeding.



### Activities and Outputs

The MIYCN WG met annually from 2007–2012 to share technical updates and discuss priority issues for securing adequate nutrition for women and young children. There were five sub-groups, each led by an expert from member organisations:

1. **Formulations** for FCF and CFS (led by University of California, Davies)
2. Integration of **breastfeeding** and other guiding principles of optimal IYCF with the use of fortified products for complementary feeding (led by Helen Keller International)
3. Strategies for **delivering and ensuring appropriate use** of appropriately formulated commercially produced products (led by PATH)
4. **Monitoring/evaluation of fortified foods** and point of use fortification programs for maternal, infant and young child nutrition (led by the US Center for Disease Control and Prevention)

5. **Early childhood development** (led by University of Maryland/ The Consultative Group on Early Childhood Care and Development).

Several of these sub-groups worked collaboratively to develop technical documents and address policy concerns in an effort to document the technical consensus generated by the discussions. In addition, the MIYCN WG catalyzed the establishment of similar working groups in countries at the national level, providing impetus and a framework for national nutrition planning with a focus on the multiple needs of women and infants and young children rather than on single nutrient interventions. Case studies of these are presented later in this document.

A number of key publications were produced by the MIYCN WG compiling the research results and technical consensus of members of the group (see Annex 1). Staff time was provided by the organizations that contributed group members, whilst consultant costs and publication costs were covered by GAIN. The dissemination costs for the reprinted 'Using the Code of Marketing of Breast-milk Substitutes to Guide the Marketing of Complementary Foods to Protect Optimal Infant Feeding Practices' were covered by Sight and Life.

Global policy work was pursued in two principal areas: revision of standards related to FCF and CFS, and clarification of appropriate promotion of fortified complementary foods and food supplements. The former encompassed collaboration for revision of the Codex Alimentarius (Codex) Guidelines on Formulated Supplementary Foods for Older Infants and Young Children. The latter included advocacy to gain clarification of the WHA Resolution 63.23 which urges member states "to ensure that nutrition and health claims shall not be permitted for foods for infants and young children" (WHA, 2010). Without claims, consumers do not benefit from crucial information needed to distinguish the good from the bad products, and make informed and appropriate choices when purchasing complementary feeding products.

Successes were achieved in several areas including:

1. The revision of the Codex Guidelines on Formulated Supplementary Foods for Older Infants and Young Children (CAC/GL 08-1991) now updated and re-named 'Guidelines on Formulated Complementary Foods for Older Infants and Young Children (CAC/GL 08-1991 -Adopted in 1991; Revised in 2013) (Codex Alimentarius, 2013).

2. The work currently being undertaken by the WHO to provide guidance on what constitutes appropriate promotion of foods for infants and young children as per the 2012 WHA Resolution 65.6 (WHA, 2012) that *“Requests the Director-General to provide clarification and guidance on the inappropriate promotion of foods for infants and young children cited in resolution WHA63.23, taking into consideration the ongoing work of the Codex Alimentarius Commission.”*

The structure and membership of the MIYCN WG evolved over time. New members joined the group and new subgroups were formed. While a handful of members actively contributed to the group work, the majority participated through attending meetings and/or by receiving documents and information on MIYCN through periodic email updates and/or through their work in their individual organizations and their scientific publications on issues around MIYCN.

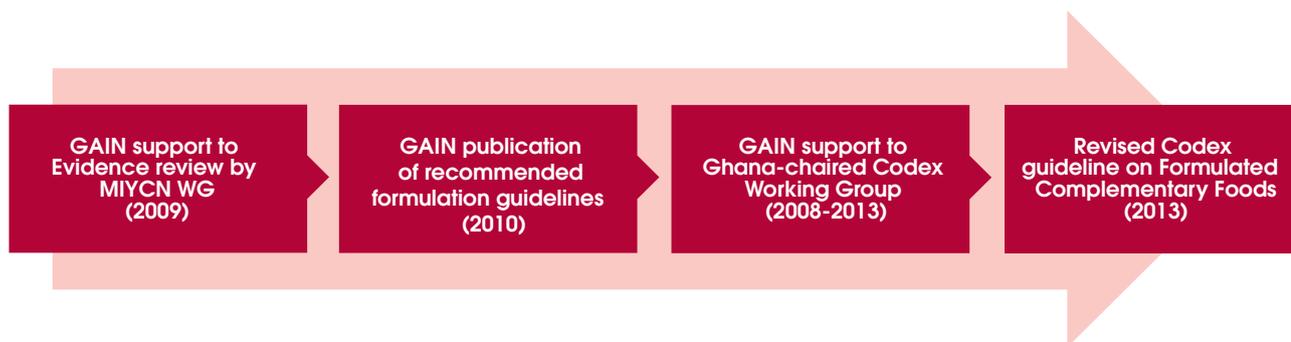


The merits of the organizational arrangements were flexibility and engagement in a clear area of need with the cost of expert consultation shared. Its challenge has been sustaining timely working group outputs, both due to significant opportunity costs on members’ level of effort and limited funding to support for research and publications. As the Ten Year VMD Strategy process evolved to other structures in the global architecture of the nutrition sector – culminating in the Scaling-Up Nutrition (SUN) Movement – the MIYCN WG’s mandate was significantly weakened. Nevertheless, while funding for GAIN’s support to the MIYCN WG ended in 2012, its inception represented a first attempt at breaking down barriers between the various specialties addressing different aspects of optimal MIYCN and a broadening of individual interventions to a more integrated and multi-sectoral approach.

### Revising the Codex Alimentarius Guidelines on the Formulation of Complementary Foods and Complementary Food Supplements

The MIYCN WG reviewed the evidence on the nutritional aspects of FCF and CFS that are critical for children’s optimal health and development. Based on this review, the MIYCN WG developed the paper *Formulations for fortified complementary foods and supplements: Review of successful products for improving the nutritional status of infants and young children* (Maternal, Infant and Young Child Nutrition Working Group: Formulation Subgroup, 2009). Published in the Food and Nutrition Bulletin in 2009 it became the foundation for the Nutritional Guidelines for Complementary Foods and Complementary Food Supplements Supported by GAIN (GAIN, 2011). These formulation guidelines offer appropriate ranges for nutrient composition, protein quality, viscosity, other ingredients such as sugar and sodium, and are accompanied by an interactive formulation calculator.

This work subsequently formed the basis for the recommendations made during the revision of the Codex Alimentarius Guidelines on Formulated Complementary Foods for Older Infants and Young Children. GAIN IYCF Product Formulation Guidelines were compiled and benefitted from broad-based consultation and review by leading global technical experts, including WHO (Figure 1).



**Figure 1: Different steps in the process to establish evidence-based guidelines**

The Codex Alimentarius (Codex), a joint body of the Food and Agricultural Organization (FAO) and WHO, comprises internationally recognized standards, codes of practice, guidelines, and other recommendations relating to foods, food production, and food safety. It has become the global reference point for consumers, food producers and processors, national food control agencies, and the international food trade. UN Resolution 39/248 of 1985 adopted guidelines for use in the elaboration and reinforcement of consumer protection policies. The guidelines advise that “When formulating national policies and plans with regard to food, governments should take into account the need of all consumers for food security and should support and, as far as possible, adopt standards from the Codex Alimentarius or, in their absence, other generally accepted international food”.

The Codex Guidelines on Formulated Supplementary Foods for Older Infants and Young Children (CAC/GL 8-1991) provided guidance on nutritional and technical aspects of the production of formulated supplementary foods for older infants and young children above 6 months of age, including: formulation of such foods based on the nutritional requirements of older infants and young children of this age group; processing techniques; hygienic requirements; provisions for packaging; and provisions for labelling and instructions for use.

Since their adoption in 1991 there have been extensive research and program evaluations, showing that many of the characteristics of foods described in the Codex Guidelines were no longer adequate to support optimal child growth and development. A technical review team, supported by GAIN, highlighted a number of areas in the guidelines that required revision. The Government of Ghana volunteered to propose and then lead the revision process through the relevant Codex Committee – the Codex Committee on Nutrition and Foods for Special Dietary Uses (CCNSDFU). The objective of the revision was to ensure that the guidelines reflected the latest evidence, better protected breastfeeding and provided clear, evidence-based guidance to also cover

newer products being researched and introduced globally. It also specifically addressed the nutritional gap when complementary foods are introduced into the older infant’s diet.

The revision process took 6 years, from 2008 to 2013, when the new Guidelines on Formulated Complementary Foods for Older Infants and Young Children (CAC/GL 8-1991, Revised in 2013) were adopted by the Codex Commission. Included in the revisions were:

- Changing ‘supplementary’ to ‘complementary’ in the name of the guidelines
- Expanding the scope of products included from cereal-based porridges only to include ready-to-use products and food-based home fortificants
- Improved processing techniques to reduce anti-nutrients and improve bioavailability of nutrients in the raw materials
- Decreasing the daily ration from 100g to a range from 10–50g, depending on the nature of the formulated complementary food, thus enhancing breastfeeding protection
- Specific mention of essential fatty acids, particularly omega-3 fatty acids, and the need to ensure a ratio between linoleic acid and alpha-linolenic acid of between 5:1 and 15:1
- Specific mention that partially hydrogenated fats (and oils) should not be used as an ingredient
- Language supporting the principle of minimizing the use of carbohydrate sweeteners
- Guidance on addition of vitamins and minerals and suggestion that a daily ration should provide at least 50 percent of the WHO/FAO recommended nutrient index (RNI) for children aged 1–3 years.



Collectively, these revisions and others significantly improved the guidelines so that they better reflect the current evidence that supports optimal IYCF principles. The guidelines are available on the Codex Alimentarius website <http://www.codexalimentarius.org/>

## Addressing the Inappropriate Promotion of Foods for Infants and Young Children

The International Code of Marketing of Breast-Milk Substitutes (the Code) was adopted at the 34th WHA in 1981 and is an indispensable tool aimed at protecting, promoting, and supporting breastfeeding in infants and young children, and promoting optimal feeding during the first 2 years of life.

The Code applies to the marketing of breast-milk substitutes, feeding bottles, and teats. The term breast-milk substitute includes any food being marketed or otherwise represented as a partial or total replacement for breast milk, whether or not designed for that purpose. It therefore includes some complementary foods, such as foods marketed as suitable for introduction below 6 months of age or those that promote larger than appropriate portions that might compete with appetite for breastmilk. Subsequent WHA resolutions limiting labeling, such as WHA Resolution 63.23, have specifically included foods for infants and young children.

Although not legally binding at a national level, it carries 'moral and political weight' and UN Member States are urged to incorporate its provisions as a minimum standard into national laws/regulations. The Code specifically applies to the marketing of breast-milk substitutes, feeding bottles, and teats. The Code must be read in conjunction

with subsequent WHA resolutions adopted since 1981 as these have equal standing to the Code.

Currently there is no quantitative assessment of the extent of adherence to the Code, and therefore no means of rewarding companies that comply with the Code. Current monitoring practices of the Code tend toward a zero-sum equation and it is unclear what steps companies violating the Code must take to be recognized as compliant, and over what timeframe. The fact that there is no roadmap for transformation toward compliance that can be monitored may be acting as a disincentive for transformation to Code violators, as well as to new entrants into the market. There is also a bias in monitoring that focuses on the actions of multinationals and overlooks the transgressions of local companies. Though there are certainly intentional breaches of the Code by certain companies, in GAIN's experience there is also confusion about its implementation with regards to complementary feeding, and subsequently inconsistent advice to national governments from international experts.

The MIYCN WG sub-group on 'Integration of Breastfeeding and the Other Guiding Principles of Young Child Feeding with Use of Fortified Products for Complementary Feeding' took on the task of developing guidance on how the Code applied to the marketing of commercialized complementary foods and supplements to ensure that optimal breastfeeding practices are protected and promoted. This was based on the recognition that the private sector is increasingly engaged in producing complementary food and complementary food supplement products. It was felt that guidance was needed - even if preliminary and incomplete - that could provide governments, private companies, and other interested groups basic information on the appropriate marketing of complementary foods and complementary food supplements that would also ensure the protection and promotion of optimal infant feeding practices.

This culminated in 2010 in the release of the document *'Using the Code of Marketing of Breast-milk Substitutes to Guide the Marketing of Complementary Foods to Protect Optimal Infant Feeding Practices (Quinn et al, 2010).'* Its foreword contextualizes the purpose of the document: "This Working Paper should be seen as only a 'first step' in a longer and more formal, future process which will be guided by evidence on what constitutes 'appropriate' and 'non-appropriate' marketing of complementary foods and supplements. Whereas the Code will inform some of the discussions during this process, there are significant areas which the Code does not consider; these gaps will need to be addressed."



Every 2 years, Infant and Young Child Nutrition features on the WHA agenda, and recent discussion and resolutions have begun to address not only the marketing of breast-milk substitutes, but the wider category of foods for infants and young children. In 2010 WHA Resolution 63.23 (WHA, 2010) was passed that urged member states “to end inappropriate promotion of foods for infants and young children and to ensure that nutrition and health claims not be permitted for foods for infants and young children, except where specifically provided for, in relevant Codex standards OR national legislation”. GAIN was actively involved in assessing the impact of Resolution 63.23 and this included a detailed review of the relevant Codex standards referred to in Resolution 63.23. It became clear that the relevant Codex standards in the resolution made provision for nutrition and health claims on foods for infants and young children, but deferred to national legislation to make such provision and that for Member States to implement resolution 63.23, further clarification was required.

While the MIYCN WG document provided a valuable resource, it was only intended as an initial document to provide interim guidance. As such GAIN worked in alliance with other NGOs and civil society organizations and some member states to increase awareness of the need for more detailed information regarding what constituted ‘inappropriate promotion’ in order to

support the work of countries in setting their own policies and regulations. In 2012 the WHA passed Resolution 65.6 (WHA, 2012) requesting the WHO to “provide clarification and guidance on the inappropriate promotion of foods for infants and young children cited in WHA Resolution 63.23, taking into consideration the ongoing work of the Codex Alimentarius Commission.”

In response, the WHO formed a Scientific and Technical Advisory Group (STAG) on Inappropriate Promotion of Foods for Infants and Young Children to provide the clarification requested by the WHA. Five criteria for inappropriate promotion formulated by the STAG (WHO, 2013) were presented at the 2014 WHA:

“Promotion is inappropriate if:

1. It undermines recommended breastfeeding practices
2. It contributes to childhood obesity and non-communicable diseases
3. The product does not make an appropriate contribution to infant and young child nutrition in the country
4. It undermines the use of suitable home-prepared and/or local foods
5. It is misleading, confusing, or could lead to inappropriate use.”

The WHA decided that the Director General be requested to complete the work before the end of 2015, for consideration by Member States at the 69th WHA in 2016. The work of the STAG has resulted in a draft document ‘Clarification and Guidance on inappropriate marketing of foods for infants and young children’ which was subject of a public consultation by WHO and which will be revised for discussion by Member States at the WHA Executive Board meeting in 2016.



## The Home Fortification Technical Advisory Group (HF-TAG)

The provision of micronutrients is ranked as one of the most cost-effective interventions for economic development, according to the 2012 Copenhagen Consensus (Hoddinott, Rosegrant and Torero, 2012). Provision of micronutrients to specific target groups has been facilitated by the development of MNPs that can be readily added to semi-solid foods in the home or at point-of-use. In an increasing number of countries (>50), governments are now taking on the distribution of MNP in their national health programs and increasingly MNP provision is being linked to other nutrition, health, social protection, and education intervention packages.

The HF-TAG was launched in 2009 and provides global leadership by advocating for, and supporting, well-designed and effective programs and delivering evidence-based direction to those seeking to improve the nutritional status of vulnerable populations through home fortification of complementary foods. HF-TAG operates as a global network of stakeholders<sup>2</sup> engaged in home fortification, comprised of members from governmental, UN, NGO, private, and academic sectors. The network seeks to represent all these key stakeholder groups and address the most important and feasible barriers to home fortification. The HF-TAG is built on the principle of inclusion and expands home fortification information/guidance within the public domain. Guidance is based on a review of evidence as well as on best practice and experience with policy formulation and program implementation.



HF-TAG's work is managed by an Executive Committee and is currently comprised of volunteers from different organizations involved in this field. The Secretariat supports working groups to facilitate technical consensus on priority topics, facilitates conference calls and in-person meetings, coordinates the activities of the Executive Committee, manages the development and content of the website and the creation of HF-TAG resources.

Until January 2015, GAIN hosted the Secretariat and has funded development of HF-TAG manuals, the first HF-TAG website (launched in 2010) and the new HFTAG website (launched in April 2015, which includes The MNP Toolkit), and all operating costs of the HF-TAG Secretariat.

HF-TAG's objectives are to:

1. Support implementation of effective home fortification programs
2. Track global program status and challenges
3. Drive a research agenda to improve the design and implementation of home fortification products and programs
4. Strengthen the enabling environment and advocate for home fortification
5. Facilitate communication, collaboration, and alignment for home fortification among implementers, supporting agencies, manufacturers and funders

The strategic importance of the HF-TAG lies in linking national level policy formulation, programing, and product manufacturing related to the use of complementary food supplements to consistent and evidence-based technical guidance provided at the global level. This has been operationalized by the organization of events at country-level to address regulatory issues and advocating for scaling-up national programs, as well as events at global level to advance the home fortification model based on work by Dr Stan Zlotkin, the inventor of MNPs (Sprinkles) and a public-private partnership between the World Food Programme (WFP) and DSM, producer of micronutrient premixes.

The HF-TAG provides critically important harmonized technical guidance to ensure the best chances for scale-up of home fortification at a national level (while supporting the normative agencies to issue their guidance). The WHO/FAO normative process achieved technical consensus by grouping scientists and experts involved in food fortification, and was involved in drafting guidance that was published in 2011 (WHO, 2011).

<sup>2</sup> Members of the HF-TAG include HKI, the Micronutrient Initiative, GAIN, PSI, Sight and Life, SPRING (USAID), the Sprinkles Global Health Initiative, UNICEF, UC Davis Program in International and Community Nutrition (PICN), US Centers for Disease Control and Prevention, WFP and others. In order keep at arm's length of technical deliberations so that potential conflicts of interest are avoided in the development of normative guidance, WHO participates as an Observer on the HF-TAG Executive Committee



### HF-TAG Activities and Outputs

Since its inception in 2009, the HF-TAG has succeeded in bringing together a large network of experts specializing in nutrition science and research, IYCN programming, product formulation and packaging, monitoring and evaluation, social behavior change communication and demand creation, production and quality assurance, supply-chain management and logistics, policy and regulation, multi-sectorial partnerships and advocacy, at both global and national levels. It has also succeeded in issuing a broad range of technical resources that has served as the backbone for the introduction of HF in over 50 countries, tripling the number of countries since 2011. These and other activities are highlighted below.

The main outputs of the HF-TAG to date are listed below, and referenced in Annex 1:

- Technical consensus leading up to the Cochrane Review and WHO Guidelines of Use of MNP for Home Fortification of Foods Consumed by Infants and Children 6-23 Months of Age (WHO, 2011)
- Global Assessment of home fortification interventions
- Technical program guidance in the form of seven manuals:
  1. *HF-TAG Programmatic Guidance Brief on Use of MNPs for Home Fortification*
  2. *HF-TAG MNP Composition Manual*
  3. *HF-TAG Quality Manual on MNPs*
  4. *HF-TAG Planning for Implementation Manual,*
  5. *A Manual for Developing and Implementing Monitoring Systems for Home Fortification Interventions*
  6. *MNP and the International Code of Marketing of Breastmilk Substitutes*
  7. *New WHO Guidelines and HF-TAG Program Guidance on the Use of MNP for Home Fortification of Foods for Pregnant Women and Young Children*
- The HF-TAG Website – <http://www.hftag.org> – an important source of technical guidance and best practices of home fortification programming
- HF-TAG MNP Toolkit (online resource covering topics on programming planning, policy, program management, procurement, supply and distribution, behavior change interventions, and monitoring)
- HF-TAG Webinar Series covering the following topics:
  - Aiming for Program Excellence – Launching the HF-TAG Webinar Series
  - MNP and the International Code of Marketing of Breastmilk Substitutes
  - MNP Formulation, Dosing Regime and Delivery Channels
  - Addressing MNP Supply Issues
  - Navigating the HF Network Website
  - HF Network Community of Practice (<http://network.hftag.org/>) is a venue for showcasing program experience and exchanging lessons learned to cultivate and scale-up good practice.

A key success of the HF-TAG was to accelerate the issuing of normative guidance on the use of MNPs by WHO (WHO, 2011). HF-TAG provided input into the WHO's formal guideline-development process contributing to normative guidance on the use of MNPs for home fortification of foods targeted to complement breastfeeding for infants aged 6-24 months. The HF-TAG created the initial PICO (*Problem, Intervention, Comparison, Outcome*) table for WHO that was used to guide the development process of the WHO guideline on MNP for children 6 through 23 months of age. It also created the Programmatic Guidance Brief on MNP to help operationalize the WHO guideline for programs. Its members have contributed program design expertise to a range of projects, organizations and companies, as well as having made recommendations for adaptations of product formulations and provided advice to ensure that package labeling and product promotion support optimal infant and young child feeding and care practices, and comply with internationally recognized ethical practices.



The HF-TAG also collaborated with UNICEF, the US CDC, International Micronutrient Malnutrition Prevention and Control Program (IMMPaCt), and GAIN to conduct a series of regional workshops on scaling up home fortification to improve complementary feeding. Over a period of 5 years, five workshops convened nutrition and IYCN leaders in Asia, Latin America and the Caribbean, sub-Saharan Africa, the Middle East and Northern Africa, and the Commonwealth of Independent States. Representatives from 66 countries participated. The workshops were instrumental in assisting country teams in designing and strengthening their home fortification programs. GAIN supported the HF-TAG in the development of an MNP toolkit, which was launched on the HF-TAG website in April 2015 (<http://www.hftag.org/resources/toolkit/>).

Operationally there have been challenges as the Executive Committee members are both few in number and high level leaders in their respective organizations. As with the MIYCN WG described in the previous section, the secretariat was funded by a single source and its continuation depends on broader funding. Nevertheless, there remains a strong commitment from HF-TAG Executive Committee members to continue with the initiative and to support the transition of the Secretariat to its new host, as well as strengthen engagement at the country level, and collaborate on new technical areas. For example, while inspired by growing evidence of the

effectiveness of MNPs, the HF-TAG has also begun to explore options for the application of lipid-based products as complementary food supplements.

One of the first steps on this pathway was the organization of a meeting on *'Fat in the critical 1000 days: Ensuring adequacy of essential dietary fats for mothers and young children in low and middle income countries'*, held in April, 2011 in Washington, DC, USA. The meeting was organized by the International Union of Nutritional Sciences (IUNS), GAIN, PAHO, UNICEF, UNILEVER and HF-TAG. Participants from UN agencies, governments, and the public, private, academic and NGO sectors met to review the evidence on essential fats in terms of function, assessment and programs at they relate to the critical 1000 days of life from pregnancy through 24 months of age. The aim was to link evidence to programs so that scientific knowledge can be applied to program improvement. The stated long-term objectives of the meeting were to:

1. Increase understanding of key opinion formers working in middle- and low-income countries regarding the role of essential fats in maternal and child health
2. Increase collection of data on essential fats intake and status in nationally representative surveys
3. Increase breastfeeding and consumption of foods and products containing essential fats by pregnant and lactating women and young children

Guided by this initial exploration, the HF-TAG is now working closely with the International Lipid-Based Nutrient Supplements (ILiNS) Project, compiling evidence related to small quantity lipid-based nutrient supplement (LNS) and guidance on its application for complementary feeding.

## Advancing Global Standards and Guidance

The MIYCN WG and the HF-TAG have proven to be effective mechanisms for engagement at both the global and national levels. Annex 1 lists the key achievements and outputs developed by the MIYCN WG and HF-TAG. The effort made under the Scaling up Nutrition (SUN) movement, alongside the recent Second International Conference on Nutrition (November 2014), to develop a new pillar of engagement around research – in addition to the UN, donor, civil society and business networks - points to a growing awareness that the gaps between research and learning from implementation and policy, need to be closed.



Engaging the research community in communicating and translating their findings to ensure there is an impact on policy-making has proven to be a powerful and necessary mechanism for advancing new programmatic areas and ensuring their inclusion in global and national policies. Such consultative structures are making a considerable, although often unrecognized, contribution to building technical consensus amongst the global MIYCN community in relation to appropriate complementary food composition and marketing of CFC, as well as technical guidance on home fortification.

The MIYCN WG, through its composition of technical experts engaged in the field of MIYCN research as well as experts in other relevant fields and its collaborative approach, led to consensus on formulations for appropriately formulated complementary foods (CF) and CFSs. This in turn created the evidence-base to assist with the specific revisions to the Codex Guidelines on Formulated Complementary Foods for Older Infants and Young Children.

However, the revision process of the Codex guidelines was less straightforward largely due to the fact that the majority of the country representatives, who have decision-making power at the Codex Committee on Nutrition and Foods for Special Dietary Uses (CCNFSDU), were not technical experts in MIYCN. The Ghana delegation, which proposed and volunteered to lead the working group on the revision process together with the United States as co-Chair, however, ensured that a strictly evidence-based approach was followed. GAIN, as an

observer organization, was able to provide technical assistance to the working group and give inputs at the CCNFSDU meeting.

Expert nutrition observer organizations, including but not limited to the American Society for Nutrition (ASN) and the International Food Policy Research Institute (IFPRI), can and should make a major contribution to Codex processes and need to provide country delegates with appropriate information early on, in order to strengthen the contribution of scientific evidence to decisions. Their participation is yet to be maximized.

An important lesson learned around the sustainability of similar expert groups, was that whilst all participants generously contributed their time and expertise to the meetings and the outputs, additional financial support is needed to organize meetings, to publish the documents, and in certain circumstances to pay for consultants who bring much needed additional expertise.

When GAIN's financial support came to an end for the MIYCN WG in 2012, the continuity of the activities became a challenge. A survey as to the future mandate and organization of the group amongst MIYCN WG members yielded a very low response and led GAIN to discontinue the group's activities. This may point to an evolution in the global nutrition architecture reflecting a greater openness to collaboration among key stakeholders. The MIYCN WG was formed at a time when closer collaboration across sectors was much needed to ensure that nutrition programming benefits in design and implementation from the integration with other development agendas.



### 3. ADVANCING THE ENABLING ENVIRONMENT FOR COMPLEMENTARY FEEDING AT THE NATIONAL LEVEL

Tackling malnutrition requires a whole-of-society effort and cannot be solved by public health interventions alone. A specific feature of the GAIN portfolio was to provide support to national governments to build global and national enabling environments that encourage multi-stakeholder engagement, to address the challenge of malnutrition. In many countries, standards and legislation regulating the formulation and marketing of complementary foods and CFS are either absent, vague, or do not reflect international guidance and best practice or the latest evidence-based product innovations. By supporting up-to-date, evidence-based international standards and guidelines, these can and do serve as a reference to countries for consideration at the national level, especially in low- and middle-income countries that often do not have the resources to develop such guidance on their own and who rely on normative bodies for guidance.

As part of its work, GAIN supported authorities in a number of countries including Afghanistan, Bangladesh, Cambodia, Côte d'Ivoire, Ethiopia, Ghana, India, Indonesia, Kenya, Mozambique, Namibia, Nigeria, South Africa, Uganda, and Vietnam as they undertook work to address appropriate complementary feeding. The support ranged from enabling individuals to attend international meetings to technical support to develop a home-fortification strategy or developing a product standard aligned with international guidance.

In a number of these countries GAIN supported national working groups focused on MIYCN. In Namibia, for example, GAIN supported the creation of a Namibian Alliance for Improved Nutrition (NAFIN) and provided technical and financial support for the initial meetings. In Indonesia, GAIN supported the creation of an Indonesian MIYCN working group, with an initial aim to identify the gaps in essential fatty acids intake and the role of SQ-LNS for addressing these gaps.

GAIN also supported the analysis of the composition of commonly used local foods with a potential high contribution to essential fatty acids, to strengthen the

Indonesia Food Composition table and allow subsequent secondary analysis of the ongoing national household consumption survey.

In Uganda, GAIN supported the Ministry of Health to strengthen the nutrition component of its National Child Survival Strategy and facilitated the drafting of a costed national implementation plan for the strategy. Both were published by the Government of Uganda and widely disseminated to relevant government departments and development partners, serving as a base for attracting multilateral budget support.

#### **Support for Standards and National Guidelines: Understanding the Challenge**

There are a number of challenges that country-level actors face when seeking guidance that is up-to-date, evidence-based, and reflects best practices. The actors include policy makers from government agencies such as Ministries of Health or Food and Drug Administrations, and NGOs, civil society organizations, and other organizations that are implementing nutrition interventions. Many of these actors lack technical expertise and access to the international scientific evidence base, best practices, and experiences of other countries. It is therefore difficult to build consensus on priorities at the national level or identify which knowledge gaps need to be filled and where expertise and experience can be drawn from the wider global community.

To address these challenges, GAIN provided technical support to countries by connecting individuals at national level with on-going developments at the international level providing technical input, reviewing of draft documents and providing consultants to support government to draft standards/guidelines/regulations. A summary of some of these interventions is given in Panel 1.

## PANEL 1: GAIN provided technical support to country standards authorities

In **Afghanistan**, GAIN provided technical assistance via a consultant to the Afghan National Standards Authority (ANSA) to develop standards on:

1. Formulated Complementary Foods For Older Infants And Young Children (Fortified Blended Foods And Complementary Food Supplements) — Nutrition, Fortification, Hygiene, Sampling And Testing
2. Lipid-Based Nutrient Supplements For The Treatment Of Moderate Acute Malnutrition — Nutritional Requirements, Fortification, Hygiene, Sampling And Testing

In **Bangladesh**, GAIN provided critical review and input into the draft micronutrient deficiency control strategy in 2014 and engaged the US CDC and HF-TAG in the review process.

In **Kenya**, GAIN engaged with the Kenya Bureau of Standards (KEBS) around the development of a national standard for LNSs, which would be the first ever standard for LNSs in the world. A standard was drafted in 2011 and was finalized in 2012 (KS/2348-2:2012). Standards developed in one of the five member countries of the East Africa Standards Committee (EASC), that forms part of the East African Community are binding in all five countries (Kenya, Uganda, Tanzania, Rwanda and Burundi). Kenya supported the development of, and subsequently adopted, the East African Community Standard (KS EAS 798:2013). Kenya standards are available at: <http://webstore.kebs.org/online-shop/>. KEBS also drafted a standard for MNPs, called the 'Kenya Standard Micronutrient Powder KS 2514:2013 ICS 67.040', which was finalized in 2013. GAIN, through the HF-TAG, offered a critical review of this draft standard, which has important consequences for Kenya's MNP program and potentially for other countries in the region.

In **Nigeria**, GAIN gave extensive feedback on several rounds of the draft National Guidelines for the Control of Micronutrient Deficiency Control. As a result of GAIN's input, these guidelines were revised on December 4, 2012, to include, amongst other revisions, the use of MNPs.



## Protecting and Promoting Breastfeeding: National Application of the International Code of Marketing of Breast-milk Substitutes to Complementary Feeding Products

Since the creation of the Code, countries have adopted and enforced it in various ways. The Code applies to the marketing of breast-milk substitutes, feeding bottles, and teats. The term breast-milk substitute includes any food being marketed or otherwise represented as a partial or total replacement for breast milk, whether or not designed for that purpose. It therefore includes some complementary foods, such as foods marketed as suitable for introduction below 6 months of age or those that promote larger than appropriate portions that might compete with appetite for breastmilk. Subsequent WHA resolutions limiting labeling, such as WHA Resolution 63.23, have specifically included foods for infants and young children.

Enacting the Code in national regulation is a critical step towards improving breastfeeding practices which support the timely introduction of appropriate complementary foods at 6 months of age. In Côte d'Ivoire, GAIN and HKI partnered to support advocacy for the adoption of the Code between 2010 and 2014. On 6 June 2014, the Ivorian Code of Marketing of Breast Milk Substitutes was adopted by Presidential Decree (Décret 2013-416) in the Council of Ministers. The development of national normative specifications for complementary foods was entrusted to the 'Organisme National de Normalisation et de Certification de la Côte d'Ivoire', CODINORM.

In South Africa, GAIN reviewed and gave input to the draft Regulations Relating to Foodstuffs for Infants and Young Children. The final regulations were published in December 2012 and are in the process of staged implementation.

## Supporting Home Fortification Activities

In addition to its support for HF-TAG, GAIN has engaged in a number of home fortification activities at national level.

In Nigeria, The Federal Ministry of Health, with support from GAIN and UNICEF, invited key stakeholders from various government departments and agencies, development partners (including WHO, Save the Children, HKI, SPRING) and academics to a series of workshops in Lagos and Minna in December 2012 and March 2013 to revise the existing Micronutrient Deficiency Control guidelines to include a chapter on the use of MNP. The delegates also developed an operational manual for the use of MNP at the household level. Both documents were adopted by all delegates and have since been endorsed by the National Council of Health in August 2013 for nationwide implementation.

GAIN also engaged with key individuals within the Federal Ministry of Health and other government agencies, along with Nigerian company Bio Organics to explore an MNP program in Nigeria. In 2013, GAIN, Bio Organics, and government officers in Benue State launched an MNP home fortification initiative that coordinated with Child Health Days. The program continues to this day.



## PANEL 2: In-Country MNP Challenges – A Bangladesh Case Study

For several years GAIN worked in Bangladesh with relevant government agencies, BRAC (the largest NGO in the country), Renata, Social Marketing Company (SMC), and others to support home fortification with MNP. Renata had been producing and selling an MNP – Pushtikona – which contains 15 vitamins and minerals and is sold through BRAC’s Shastya Shebikas and in Renata’s pharmacies.

After the release of the WHO Guideline on the use of MNPs for home fortification of foods consumed by infants and children 6–23 months of age (WHO, 2011), Bangladesh interpreted the WHO guideline as endorsing an MNP with only five vitamins and minerals and requested evidence of impact for the other ten vitamins and minerals as a condition for retaining them. GAIN explained that the WHO guideline allows for other vitamins and minerals at currently recommended nutrient intake (RNI) doses for the target population in addition to iron, vitamin A, and zinc. But the debate then turned to whether Bangladesh should use MNP as part of their strategy. Faced with the prospect of having MNP withdrawn in Bangladesh, GAIN supported an MNP containing only five vitamins and minerals.

Subsequently the dosing frequency also became an issue. Initially, the guidance for using MNP in Bangladesh was on a flexible basis but, after the release of the WHO guidelines that recommended daily consumption for 2 months, followed by a 4-month break, Bangladesh health authorities chose to follow this guidance. Challenges with the 2-month on and 4-month off schedule are that in a market-based approach it is necessary for the consumer to have the means to buy a 2-month supply upfront or be able to purchase 1 sachet daily and having a 4-month period without supplementation, can negatively impact adherence or compliance. There are benefits of providing fewer doses of MNPs in a continuous manner over a longer period of time because water-soluble vitamins, which are not stored by the body, would otherwise not be available for a 4-month period. Therefore, BRAC agreed to continue with the flexible dosing schedule. Bangladesh health authorities however are still in favour for the more rigid 2-month on, 4-month off approach.

This experience highlights the many challenges faced when translating global guidance to local implementation, which requires a high level of continued engagement to support adoption and sustainability.



## 4. LOOKING AHEAD: THE BALANCE SHEET AND FUTURE CHALLENGES

Through its experience of 23 IYCN projects in 17 countries in Africa, Asia, and Latin America over a 7-year period between 2008 and 2014, GAIN has identified numerous gaps in international guidance on appropriately formulated complementary foods and CFS. GAIN's approach of opening dialogue and encouraging collaboration towards improved evidence-based standards, guidelines, and other aspects of the enabling environment, has been effective and influential and has led to greater consensus on key issues within the nutrition community. This in turn has enabled appropriate programming at the national level that is more soundly informed by evidence and best practice, ultimately contributing to improved IYCF practices.

One of the successes of this work was the **generation of technical consensus by the global MIYCN WG** in relation to complementary food composition, resulting in the *Nutritional Guidelines for Complementary Foods and Complementary Food Supplements*, (GAIN, 2011), and ultimately to the revision of the Codex Guidelines on Formulated Complementary Foods for Older Infants and Young Children (Codex Alimentarius, 2013)

By engaging with both the research community and public health nutrition practitioners, GAIN has demonstrated that this can have a significant impact on **evidence-informed policy decision-making**. The MIYCN WG and the HF-TAG have proven to be effective structures for harnessing interest in and promoting multi-sector engagement at the global and national level. The work of these groups has showed how the case for appropriately formulated complementary foods or home fortification requires strengthening of local policy decision-making. In countries where GAIN had strong government relationships, there was a greater understanding and support for **product-based approaches** as having a potentially positive role when embedded in comprehensive nutrition interventions for IYCF.

Collaboration with partners and experts has also led to a deepened understanding of the International Code of Marketing of Breast Milk Substitutes and how it links to **guidelines for the appropriate promotion of industrially processed complementary foods**. GAIN worked with nutrition and legal experts to interpret how the Code can

be used to guide **the marketing of complementary foods**, while protecting optimal older infant and young child feeding practices, and successfully advocated for the WHO to clarify what constitutes the inappropriate promotion of foods for infants and young children as referred to in WHA Resolution 63.23. Working towards greater availability of these products surfaced that a blanket prohibition of all nutrition and health claims on foods for older infants and young children would constitute a potential barrier to the accessibility and choice of appropriately formulated and affordable complementary foods to supplement the local diet.

However, efforts to permit limited and verifiable nutrient content claims for foods for infants and young children during the revision of the **Codex Guidelines on Formulated Complementary Foods** for Older Infants and Young Children were unsuccessful. Consequently, appropriately formulated FCFs and CFS designed to address specific public health gaps and needs are prevented from providing the consumer with valuable information that would assist them in selecting appropriate products in preference to foods of a less optimal nutritional composition that are permitted to make claims. This may inhibit market entry of appropriately formulated complementary foods, but will not halt the utilization of inappropriate foods for older infants and young children. It is hoped that the draft WHO guidance and clarification on inappropriate marketing will address and resolve this important issue.

It has not yet proven possible to disentangle the contribution of evidence-based lessons around the role of FCF and CFS in optimal IYCF from a more ideological debate on the appropriate role of the private sector in nutrition policy and nutrition interventions. Our view is that the concerns raised are important, and an **open and transparent multi-stakeholder dialogue** as to how interested parties influence policy setting and how they address nutrition issues needs to be stimulated. From a public health perspective, **engaging the private sector** should be seen as a critical means to an end, not an end in itself. The debate would be improved by a pragmatic and evidence-based approach resulting in suitable and sustainable solutions, as well as clearly defined roles and responsibilities of all stakeholders.

Overall, it has proven possible to strengthen the enabling environment for a wide range of evidence-based, affordable, and accessible market-based complementary feeding solutions, resulting in a number of significant outputs that further the realization of optimal IYCF at scale (see Annex 1).

In summary, GAIN contributed to:

1. Convening of scientific experts to establish consensus regarding existing evidence
2. Translating science to evidence-informed policy
3. Establishing the role and boundaries of the private sector in delivering nutritional solutions for IYCF
4. Updating and aligning global recommendations and standards with latest evidence, research, and best practice

## Going forward

The engagement of scientific and technical experts was successful in improving policy outcomes globally but could not be fully sustained – a clear weakness in the global architecture. The intention of an initial financial support by GAIN to both the MIYCN WG and HF-TAG was to enable these groups to become financially independent and sustainable over time. Whereas the HF-TAG is continuing under the leadership of the SickKids Centre for Global Child Health in Toronto, there was insufficient financial support to sustain the MIYCN WG.

A concern going forward is the continued lack of coordination, at both the global and national level, to ensure that all stakeholders are engaged in the

establishment of normative standards that reflect the full evidence and knowledge base. At present, outside of formal intergovernmental fora, there is a lack of platforms for robust debate and dialogue across sectors and stakeholders, so as to ensure that the totality of the latest available evidence and best practice form the basis of global guidance and national policy decisions. In a policy field which is complex and polarized there is a lack of clear coordination at both the global and national level, therefore a lack of engagement across all stakeholders including nutrition researchers, food scientists, policy makers, agriculturalists and program implementers that will ultimately inhibit progress. Ultimately, the victims of this policy deficit are the undernourished children of the poor.

The challenge is therefore to ensure that scientists not only undertake relevant research to fill knowledge gaps but are also actively engaged in the process of creating consensus. They need to recognize the need and be enabled to translate scientific findings into global policies that are practical, can be implemented and adapted to suit different national contexts, through active contribution to global and national policy-making platforms.

The design of comprehensive approaches that include advocacy for evidence-based policies and programming, to prevent malnutrition by addressing known gaps in the diet through both public and private sector delivery channels, will be critical to achieve the health and nutrition indicators under the UNs new Sustainable Development Goals (SDGs). Only then will we truly be able to address the challenges of infant and young child feeding.



## REFERENCES

- Access To Nutrition Foundation. *Access To Nutrition Index: Global Index 2016*. Utrecht, 2016.  
<https://www.accesstonutrition.org/>
- Black RE, Victora CG, Walker SP, Bhutta ZA, Christian P, de Onis M, Ezzati M, Grantham-McGregor S, Katz J, Martorell R, Uauy R and the Maternal and Child Nutrition Study Group. (2013). Maternal and child undernutrition and overweight in low-income and middle-income countries, *Lancet* 2013; 380: 427-451.
- Caulfield LE, Huffman, SL, Piwoz EG. Interventions to improve intake of complementary foods by infants 6 to 12 months of age in developing countries: Impact on growth and on the prevalence of malnutrition and potential contribution to child survival. *Food & Nutrition Bulletin* 1999; 20; 2:183-200.
- Codex Alimentarius. *Guidelines on Formulated Complementary Foods for Older Infants and Young Children*. CAC/GL 08-1991 Adopted in 1991; Revised in 2013. <http://www.fao.org/fao-who-codexalimentarius/standards/list-of-standards/en/>
- Fawzi WW, Herrera MG, Nestel P, El Amin A, Mohamed KA. A longitudinal study of prolonged breastfeeding in relation to child undernutrition. *International Journal of Epidemiology* 1998;27:255-260.  
<http://ije.oxfordjournals.org/content/27/2/255.full.pdf>
- GAIN. *Stakeholder Perception Analysis, Ten Year Strategy for the Reduction of Vitamin and Mineral Deficiencies*. Global Alliance for Improved Nutrition, Geneva, 2006.  
<http://www.gainhealth.org/knowledge-centre/stakeholder-perception-analysis-ten-year-strategy-reduction-vitamin-mineral-deficiencies/>
- GAIN. *Nutritional Guidelines for Complementary Foods and Complementary Food Supplements supported by GAIN*: Global Alliance for Improved Nutrition; Geneva, 2011.  
<http://www.gainhealth.org/knowledge-centre/nutritional-guidelines-complementary-foods-complementary-food-supplements-supported-gain/>
- GAIN. *Public and Private Sector Business Models for Nutritious Foods at the Base of the Pyramid*. Global Alliance for Improved Nutrition; Geneva, 2015a.  
[http://www.gainhealth.org/wp-content/uploads/2015/04/WhitePaper1\\_final.pdf](http://www.gainhealth.org/wp-content/uploads/2015/04/WhitePaper1_final.pdf)
- GAIN. *Behaviour Change and Demand Creation*. Geneva; Global Alliance for Improvement Nutrition; Geneva, 2015b. [http://www.gainhealth.org/wp-content/uploads/2015/04/WhitePaper2\\_final.pdf](http://www.gainhealth.org/wp-content/uploads/2015/04/WhitePaper2_final.pdf)
- Hoddinott J, Rosegrant M and M Torero. *Investments to reduce hunger and malnutrition, A Copenhagen Consensus Challenge Paper*. Washington, 2012.  
<http://www.copenhagenconsensus.com/sites/default/files/hungerandmalnutrition.pdf>
- International Food Policy Research Institute. Global Nutrition Report 2015: Actions and Accountability to Advance Nutrition and Sustainable Development*. Washington DC, 2015. <http://globalnutritionreport.org/>
- Maternal, Infant and Young Child Nutrition Working Group (MIYCN WG) (2009). Formulation Subgroup. Formulations for fortified complementary foods and supplements: review of successful products for improving the nutritional status of infants and young children. *Food and Nutrition Bulletin* 2009; 30 (2 Suppl):S239-55.
- Osendarp SJM, Bahirathan L, Klassen E, Van Liere MJ, Neufeld MN. Using local foods to meet nutrient requirements of 6-23 month old infants in developing countries: a review of the evidence. 2016 (submitted).
- Quinn V, Zehner E, Schofield D, Guyon A, Huffmann S. *Using the Code of Marketing of Breast-Milk Substitutes to Guide the Marketing of Complementary Foods to Protect Optimal Infant Feeding Practices*. GAIN Working Paper Series No. 3. Global Alliance for Improved Nutrition; Geneva, 2010. (Published as part of the GAIN Working Papers Series, 2010).  
<http://www.gainhealth.org/wp-content/uploads/2015/02/Working-group-paper-on-Complementary-Feeding.pdf>
- Sanghvi T, Van Ameringen M, Baker J, and J Fiedler. Vitamin and mineral deficiencies technical situation analysis: a report for the Ten Year Strategy for the Reduction of Vitamin and Mineral Deficiencies *Food and Nutrition Bulletin*, vol. 28, no. 1 (supplement), 2007  
<http://www.gainhealth.org/knowledge-centre/vitamin-mineral-deficiencies-technical-situation-analysis-report-ten-year-strategy-reduction-vitamin-mineral-deficiencies/>
- UNICEF-CDC. *Global Assessment of Home Fortification Interventions*, 2011. Geneva: Home Fortification Technical Advisory Group, 2013. <http://www.hftag.org/resource/global-assessment-of-home-fortification-interventions-2011-pdf>

World Bank. *Repositioning Nutrition as Central to Development: A Strategy for Large Scale Action* (Directions in Development). World Bank: Washington DC, 2006. <http://www.unhcr.org/45f6c4432.pdf>

World Health Assembly. *Resolution 63.23 on Infant and Young Child Nutrition*. Geneva: World Health Organization, 2010. [http://apps.who.int/gb/ebwha/pdf\\_files/WHA63/A63\\_R23-en.pdf](http://apps.who.int/gb/ebwha/pdf_files/WHA63/A63_R23-en.pdf)

World Health Assembly. *Resolution 65.6 on Infant and Young Child Nutrition*. Geneva: World Health Organization, 2012. [http://apps.who.int/gb/ebwha/pdf\\_files/WHA65/A65\\_R6-en.pdf](http://apps.who.int/gb/ebwha/pdf_files/WHA65/A65_R6-en.pdf)

World Health Organization. *International Code of Marketing of Breast-milk Substitutes* Geneva: WHO, 1981. <http://www.who.int/nutrition/publications/infantfeeding/9241541601/en/>

World Health Organization. *Use of multiple micronutrient powders for home fortification of foods consumed by infants and children of 6-23 months of age. Guideline*. Geneva: WHO, 2011. [http://www.who.int/nutrition/publications/micronutrients/guidelines/guideline\\_mnp\\_infants\\_children/en/](http://www.who.int/nutrition/publications/micronutrients/guidelines/guideline_mnp_infants_children/en/)

World Health Organization. *Technical Paper on Definition of Inappropriate Promotion of foods for infants and young children* by the Scientific and Technical Advisory Group (STAG) on Inappropriate Promotion of Foods for Infants and Young Children. Geneva, WHO, 2013. [http://www.who.int/nutrition/events/2013\\_STAG\\_meeting\\_24to25June/en/](http://www.who.int/nutrition/events/2013_STAG_meeting_24to25June/en/)

World Health Organization. *Clarification and Guidance on Inappropriate Promotion of Foods for Infants and Young Children*. Draft Discussion Paper, Geneva, WHO, 2015. <http://www.who.int/nutrition/events/draft-inappropriate-promotion-infant-foods-en.pdf>

# ANNEX 1

## 1. MIYCN WG supported publications

During the existence of the group a number of publications were produced. The contents of the following outputs are directly attributable to the MIYCN WG and were developed collaboratively by MIYCN WG members. Staff time was provided by MIYCN WG members including HKI, JSI, and UC Davis, and consultant costs and publication costs were covered by GAIN. The dissemination costs for the reprinted 'Using the Code of Marketing of Breast-milk Substitutes to Guide the Marketing of Complementary Foods to Protect Optimal Infant Feeding Practices' document (without appendices) were covered by Sight and Life.

- Maternal, Infant and Young Child Nutrition Working Group. Quinn V, Zehner E, Schofield D, Guyon A, Huffman S. "Using the Code of Marketing of Breast-milk Substitutes to Guide the Marketing of Complementary Foods to Protect Optimal Infant Feeding Practices". Published as part of the GAIN Working Papers Series, 2010 and available on HKI and GAIN websites. <http://www.gainhealth.org/wp-content/uploads/2015/02/Working-group-paper-on-Complementary-Feeding.pdf>  
Note: Other MIYCN Group members provided feedback on drafts of the document.
- Young Child Nutrition Working Group: Formulation Subgroup. Formulations for fortified complementary foods and supplements: review of successful products for improving the nutritional status of infants and young children. *Food Nutr Bull* 2009 ;30 (2 Suppl): S239-55.
- Avula R, Frongillo EA, Arabi M, Sharma S, Schultink W. Enhancements to Nutrition Program in Indian Integrated Child Development Services Increased Growth and Energy Intake of Children. *J Nutr* 2011; 141: 680-684.
- Badham J. Ensuring optimal breastfeeding and improvements in complementary feeding to improve infant and young child nutrition in developing countries. *Matern Child Nutr* 2013; 9; Suppl 1: 1-5.
- Dewey KG, Huffman SL. Maternal, infant, and young child nutrition: combining efforts to maximize impacts on child growth and micronutrient status. *Food Nutr Bull* 2009;30 (2 Suppl):S187-9.
- Huffman SL, Dewey KG, Schofield D. Moving ahead with maternal, infant, and young child nutrition: need to integrate actions. *Food Nutr Bull*. 2010 Jun;31 (2 Suppl):S99.
- Huffman SL, Harika S, Eilander A, Osendarp S. Essential fats: how do they affect development and growth of infants and young children in developing countries – a literature review. *Matern Child Nutr* 2011; 7, Suppl 3, 44-65.
- Huffman SL, Schofield D. Consequences of malnutrition in early life and strategies to improve maternal and child diets through targeted fortified products. *Matern Child Nutr* 2011;7 Suppl 3:1-4.
- Peltó GH, Armar-Klemesu M, Siekmann J, Schofield D. The focused ethnographic study 'assessing the behavioral and local market environment for improving the diets of infants and young children 6 to 23 months old' and its use in three countries. *Matern Child Nutr* 2013; 9, Suppl 1: 35-46,.
- Soekarjo D, Zehner E. Legislation should support optimal breastfeeding practices and access to low-cost, high-quality complementary foods: Indonesia provides a case study. *Matern Child Nutr* 2011; 7 Suppl 3: 112-122.
- Yang Z, Siekmann J, Schofield D. Fortifying complementary foods with NaFeEDTA--considerations for developing countries. *Matern Child Nutr* 2011;7 Suppl 3:123-8.
- Yang Z, Huffman S – Review of fortified foods and beverage products for pregnant and lactating women and their impact on nutritional status. *Matern Child Nutr* 2011; 7 Suppl 3, 19-43.

- Zehner ER. Integrating maternal, infant, and young child nutrition: report on the ten year strategy Infant and Young Child Nutrition (IYCN) Working Group October 2008 workshop. *Food Nutr Bull* 2009; 30 (2 Suppl):S190-6.  
*Note: While the sole author listed is a GAIN consultant, all content was generated by MIYCN Group members participating in the 2008 Workshop.*
- Zlotkin S, Siekmann J, Lartey A, Yang Z. The role of the Codex Alimentarius process in support of new products to enhance the nutritional health of infants and young children. *Food Nutr Bull* 2010;31 (2 Suppl):S128-33.

**MIYCN WG Supplements containing relevant papers:**

The MIYCN WG served as a platform for the dissemination of the maternal, infant and young child nutrition information. The following supplements contained articles prepared for publication upon the request of the MIYCN WG. Editorial time and publication costs were paid by GAIN. UC Davis also donated editorial time for the second and third supplement.

**Food and Nutrition Bulletin Supplement:**

Maternal, Infant and Young Child Nutrition (MIYCN): Maximizing Impacts on Child Growth and Micronutrient Status by Focusing on Maternal Nutrition, Delivery Practices, and Improved Infant and Young Child Feeding – Volume 30, Number 2, June 2009.

<http://www.gainhealth.org/wp-content/uploads/2015/02/Maximizing-Impacts-on-Child-Growth-and-Micronutrient-Status.pdf>

**Food and Nutrition Bulletin Supplement:**

MIYCN Supplement: Programs and policies to improve maternal, infant, and young child nutrition in developing countries - Volume 31, Number 2, June 2010.

<http://www.gainhealth.org/wp-content/uploads/2015/02/Programs-and-Policies-to-Improve-Maternal-and-Child-Nutrition.pdf>

**Maternal & Child Nutrition Supplement:**

Consequences of Malnutrition in Early Life and Strategies to Improve Maternal and Child Diets through Targeted Fortified Products - Volume 7 Supplement 3, October 2011

<http://onlinelibrary.wiley.com/doi/10.1111/mcn.2011.7.issue-s3/issuetoc>

**Maternal & Child Nutrition Supplement**

Sandra L. Huffman and Dominic Schofield Special Issue: Enhancing Young Child Feeding in Developing Countries. Volume 9, Issue Supplement S1, January 2013

<http://onlinelibrary.wiley.com/doi/10.1111/mcn.2013.9.issue-s1/issuetoc>

**Lancet Series on early child development**

The Early Child Development Group. Child Development in Developing Countries 2. *Lancet* 2011; 378: 1277-1353

<http://www.thelancet.com/series/child-development-in-developing-countries-2>

*Following a subgroup meeting, GAIN agreed to provide financial support to this effort which highlighted ECD nutrition linkages during the MIYCN period.*

## 2. HF-TAG supported publications

Recent publications include:

- HF-TAG Quality Manual on Micronutrient Powders – A Guiding Document (<http://www.hftag.org/resource/hf-tag-quality-manual-on-micronutrient-powders-a-guiding-document/>).
- Planning for Program Implementation of Home Fortification with Micronutrient Powders (MNP): A Step-by-Step Manual (<http://www.hftag.org/resource/hf-tag-planning-for-implementation-manual-v1-march-2015-pdf/>).
- Home fortification with Micronutrient Powders, an overview of projects accomplished to date and a guide for future programming ([http://www.hftag.org/resource/sight-life-supplement-distributed-at-icn-2013\\_full-pdf/](http://www.hftag.org/resource/sight-life-supplement-distributed-at-icn-2013_full-pdf/)).
- HF-TAG Manual for Developing and Implementing Monitoring Systems for Home Fortification Interventions (<http://www.hftag.org/resource/hf-tag-monitoring-manual-14-aug-2013-pdf/>).
- HF-TAG Manual on Micronutrient Powder Composition (<http://www.hftag.org/resource/hf-tag-mnp-composition-manual-pdf/>).

- Global Assessment of Home Fortification Interventions 2011 (<http://www.hftag.org/resource/global-assessment-of-home-fortification-interventions-2011-pdf/>).
  - Programmatic Guidance Brief on Use of Micronutrient Powders for Home Fortification ([http://www.hftag.org/resource/hf-tag\\_program-brief-dec-2011-pdf/](http://www.hftag.org/resource/hf-tag_program-brief-dec-2011-pdf/)).
  - Sight and Life, UNICEF, WFP, HF-TAG (2013). Home Fortification with Micronutrient Powders. Sight and Life; Basel: 2013. ([http://www.sightandlife.org/fileadmin/data/Magazine/2013/27\\_2\\_2013/MNP\\_Supplement\\_to\\_27\\_2\\_2013.pdf](http://www.sightandlife.org/fileadmin/data/Magazine/2013/27_2_2013/MNP_Supplement_to_27_2_2013.pdf)).
- Web presence.** An interactive HF-TAG website has been launched ([www.hftag.org](http://www.hftag.org)) featuring information on home fortification, answering frequently asked questions, serving as a repository of resources, and linking to three tools developed to provide assistance and guidance to in-country practitioners:
- **The Home Fortification Network** (HF Network) is an emerging community of practice created to connect home fortification program implementers and to exchange practical and technical guidance (<http://network.hftag.org/>).
  - **The MNP Toolkit** is a well-organized collection of tools and resources relevant to MNP programs to help countries plan and implement and will be launched in June 2015 (<http://www.hftag.org/resources/toolkit/>).
  - **HF-TAG webinars** increase knowledge and capacity to design and implement effective home fortification programs and share country-level experiences and lessons learned on developing, implementing, and scaling up. The sessions are tailored to those planning or implementing home fortification programs. (<http://www.hftag.org/webinars/>).
- The website also provides updates on research, home fortification projects, and member activities around the world.

### 3. GAIN-developed resources

- Nutritional Guidelines for Complementary Foods and Complementary Food Supplements Supported by GAIN (<http://www.gainhealth.org/wp-content/uploads/2014/05/69.-Nutritional-Guidelines-for-Complementary-Foods-and-Complementary-Food-Supplements-Supported-by-GAIN.pdf>).
- Quality Monitoring Procedures (<http://www.gainhealth.org/wp-content/uploads/2014/05/Quality-Monitoring-Procedures-2014.pdf>).
- Nutrition calculator — Excel-based tool for formulating FCF and CFS with a range of raw ingredients and comparing nutritional aspects to GAIN nutritional guidelines.
- Focused Ethnographic Study (FES) manual, modules and data collection tools (<http://www.hftag.org/resource/1-fes-manual-v1-feb-2014-pdf/>).



