
INFANT AND YOUNG CHILD NUTRITION: PAPER 1

IMPROVING COMPLEMENTARY FEEDING: ASSESSING PUBLIC AND PRIVATE SECTOR BUSINESS MODELS



INFANT AND YOUNG CHILD NUTRITION: PAPER 1

IMPROVING COMPLEMENTARY FEEDING: ASSESSING PUBLIC AND PRIVATE SECTOR BUSINESS MODELS

February 2015

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. We thank all the experts who have enabled the organization to accumulate expertise in the area of commercial and social business models to improve the quality of complementary feeding. Our sincere gratitude goes to our government, civil society and business partners in the countries in which we work, who have worked with patience and persistence towards a collective goal. The authors wish to thank all GAIN staff who have been engaged in the Maternal, Infant and Young Child Nutrition (MIYCN) projects during the past 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 support that it has given to the development of GAIN's MIYCN program. We are grateful to other donors who have followed their example and who have invested in GAIN 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).

ABOUT THE GLOBAL ALLIANCE FOR IMPROVED NUTRITION (GAIN)

The Global Alliance for Improved Nutrition (GAIN) is an international organization that was launched at the UN in 2002 to tackle the human suffering caused by malnutrition.

GAIN is driven by the vision of a world without malnutrition. We act as a catalyst — building alliances between governments, business and civil society — to find and deliver solutions to the complex problem of malnutrition. Today our programs are on track to reach over a billion people with improved nutrition by 2015.

We focus our efforts on children, girls and women because we know that helping them have sustainable, nutritious diets is crucial to ending the cycle of malnutrition and poverty. By building alliances that deliver impact at scale, we believe that we can eliminate malnutrition within our lifetimes.

This paper forms part of a series of three papers exploring the enabling environment, business models, and behaviour change components of GAIN's MIYCN portfolio, all of which are available from: www.gainhealth.org

For more information regarding this paper, contact Marti van Liere at mvanliere@gainhealth.org

Global Alliance for Improved Nutrition (GAIN)

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

Contributing authors to this report:

Marti J van Liere, Romeo Frega, Dessie Tarlton, Dominic Schofield

TABLE OF CONTENTS

1. Executive Summary	5
2. Infant and Young Child Nutrition Program Design	7
3. Key findings	15
Lesson 1: Translating global evidence into robust normative and regulatory guidelines is crucial to creating a favorable enabling environment for nutritious products; working with strategic multi-stakeholder alliances provides the necessary base of credibility, trust and transparency	16
Lesson 2: Market analysis of new product categories for low-income consumers shows more conservative (slower) return-on-investment than industry benchmarks utilized for more mature markets	18
Lesson 3: Reducing barriers to market sustainability and success for private sector producers can be stimulated by financial and technical support along the value chain	20
Lesson 4: Product innovation requires deep consumer understanding, and is paramount in responding to consumers' needs and drive appropriate use of IYCN products	25
Lesson 5: To create access for target consumers and drive demand for IYCN products, a mix of traditional and alternative public and private sector delivery channels must be used	26
Lesson 6: Sufficient investment and innovation in demand creation and aligned behavior change interventions are a prerequisite to guarantee trial, uptake, and adequate use	30
4. Measuring the success of a market-based model to improve nutrition	32
5. Conclusions and ways forward	35
References	37
Glossary	38

1. EXECUTIVE SUMMARY

Context

This paper condenses evidence and learning from a portfolio of innovative private and public models that have sought to improve the consumption of nutrient-dense and vitamin-rich and mineral-rich complementary foods in children 6 to 24 months of age alongside breastfeeding. The portfolio consists of a diverse set of 23 projects in 17 countries in Africa, Asia, and Latin America carried out over a 6 year period between 2008 and 2014. With an initial target reach of 20 million, by December 2014 a total of 19 million beneficiaries have been reached, and cumulative coverage is expected to be almost 25 million by the end of 2015.

Poor complementary feeding is a significant driver of malnutrition and infant and child mortality globally, with 3.1m annual child deaths due to malnutrition (45% of all deaths in children). Despite the considerable progress made over the past decades, millions of children are still affected by acute and chronic malnutrition and many more are suffering from some degree of sub-optimal health and/or development due to micronutrient deficiencies. A number of efficacious and proven interventions to improve dietary intake and reduce the risk of infection exist (Bhutta et al, 2013). Infant feeding, specifically exclusive breastfeeding through 6 months of age and continued breastfeeding through 2 years of age, with nutritionally adequate complementary foods introduced from 6 months of age (WHO, 2003), remains at the core of these interventions.

For a host of economic and social reasons, accessing locally available and culturally acceptable foods makes sense as the basis of the complementary diet for older infants and young children. Evidence suggests, however, that substantial constraints to ensuring a nutrient-adequate diet exist due to ingredient availability and cost constraints. Even where economic barriers can be overcome, the adequacy of some nutrients may be difficult to achieve using only local ingredients (Osendarp et al, 2015). High-quality commercially produced fortified complementary foods or multi-nutrient supplements could help low-income families overcome some of these barriers if they are made available at low cost. A number of potential commercial and partly subsidized solutions to improve the quality of complementary foods have been developed during the past few years reaching middle-income target populations and low-income groups (that constitute part of the so-called Base of the Pyramid (BoP).

Executive Summary

Funded by an initial grant of \$38.8 million from the Bill & Melinda Gates Foundation, with other donors joining over time (including CIFF, DFID, DGIS, Irish Aid, KBZF, and USAID), the Global Alliance for Improved Nutrition's (GAIN) infant and young child nutrition (IYCN) program combined proven child infant interventions – such as protection and promotion of breastfeeding – with a novel focus exploring the potential role of the private sector, targeting low-income families with fortified complementary foods or micronutrient powders (MNPs).

Recognizing the complexity of malnutrition, the GAIN IYCN program sought opportunities to link with existing programs, and included critical interventions such as protection and promotion of breastfeeding and improved dietary diversity. The novel focus of the set of GAIN IYCN projects however, is the emphasis on expanding and securing regular consumption of nutrient-dense complementary foods in children 6 to 24 months of age alongside breastfeeding. To do this, GAIN fostered multi-stakeholder partnerships across multiple sectors – specifically among government, non-governmental organizations (NGOs), the private sector, and academics, as well as policy makers and global stakeholders.

Funding allocation for these projects depended on a number of contextual factors that related to the company, the government, and the market. Whereas GAIN's projects strengthened specifically the production capacity of the partner company and supported government to strengthen its regulatory framework, fewer investments were made in other areas of the market environment, such as commercial or public distribution channels.

GAIN was working in a new and developing area for which no benchmarks yet existed. The projects were resource-intensive and proved challenging because products and market-based approaches were not mainstream or widely accepted in the nutrition sector. Some of the initial assumptions related to the size of the market were overly ambitious, and in other instances external risks or shocks which could not be anticipated affected progress, as was the case of the civil war in Côte d'Ivoire and general strikes in Bangladesh.

This paper describes what was learned regarding public and private sector business models for nutritious foods targeting families in low-income settings. GAIN has sought to understand and overcome barriers to

availability, accessibility, affordability, and use of high-quality complementary foods, exploring the potential role of the private sector to help improve infant and young child nutrition. The headline findings are summarised in six key lessons that should be considered by anyone seeking to generate a successful social business model that catalyses the market to support improved infant feeding (Panel A). The lessons are based on the experience and analysis of all GAIN projects in the IYCN portfolio.

Panel A: Six key lessons learned

1. Translating global evidence into a robust normative and regulatory framework is crucial to **creating a favorable enabling environment** for the introduction of products as part of the solution; working with **strategic multi-stakeholder alliances** provides the necessary base of credibility, trust and transparency.
2. **Market analysis** of new product categories for low-income consumers shows more conservative (slower) return-on-investment than industry benchmarks utilized for more mature markets.
3. **Reducing barriers to market** sustainability and success for private sector producers can be stimulated via financial and technical input at different points along the value chain.
4. **Product innovation** requires deep consumer understanding, and is paramount in responding to consumers' needs and drive appropriate use of IYCN products.
5. To create access for target consumers and drive demand for IYCN products, **a mix of traditional and alternative public and private sector** delivery channels must be used.
6. Sufficient investment and innovation in **demand creation and aligned behaviour change** interventions are a prerequisite to guarantee trial, uptake, and adequate use.



The portfolio generated valuable insights and early lessons for GAIN, but also raised unanswered questions and presented numerous challenges. Progress on availability and accessibility of nutritious products or supplements, through commercial and hybrid delivery channels has now been made. Market penetration and regular consumption of the products is as yet, however, insufficient to adequately assess the level of impact that has been made in terms of the nutritional status of the target population.

The United Nations' Sustainable Development Goals (SDGs), which will be adopted in September 2015 consider nutrition as a development driver and tackling poor nutrition is now a key goal, placing considerable importance on the need for multi-stakeholder partnerships to accelerate delivery at a national level. Failure to address the huge deficit in the availability of safe, affordable, and nutritious complementary foods for the hundreds of millions of poor children who lack this, will impede the Sustainable Development Goals. This task can only be accomplished via collaborative effort led by governments with communities, businesses and the wider health system.

2. INFANT AND YOUNG CHILD NUTRITION PROGRAM DESIGN

Project selection and design

In order to ensure a transparent due diligence process for the allocation of the sub-grants, GAIN initiated a robust selection process. In December 2007 an open call for Expressions of Interest was launched, leading to an unexpectedly high number of responses (72 proposals), which were assessed by an independent review panel. The assessment criteria consistently focused on: potential impact; the product; the composition and experience of the proposed partnership; and the business and delivery models. The shortlisted candidate projects were then asked for a detailed business plan, site visits were made by GAIN staff, and an independent appraisal of business plans took place. Finally, the proposals were submitted for approval to the GAIN Board. The full selection process was rigorous and proved to be lengthy and resource-intensive, taking between 12 and 24 months before sub-grant agreements were signed and projects could start.

In subsequent rounds of project design, rather than issuing an open call for proposals, GAIN pro-actively identified 'high potential' strong local partners 'already in the market' and invited them to come forward with proposals in order to reduce complexity and transaction costs for all parties, and shorten design time. The strict due diligence process for approval, with internal and external assessments of the proposals, was maintained.

Currently, GAIN's IYCN portfolio includes 23 projects in 17 countries (Figure 1).

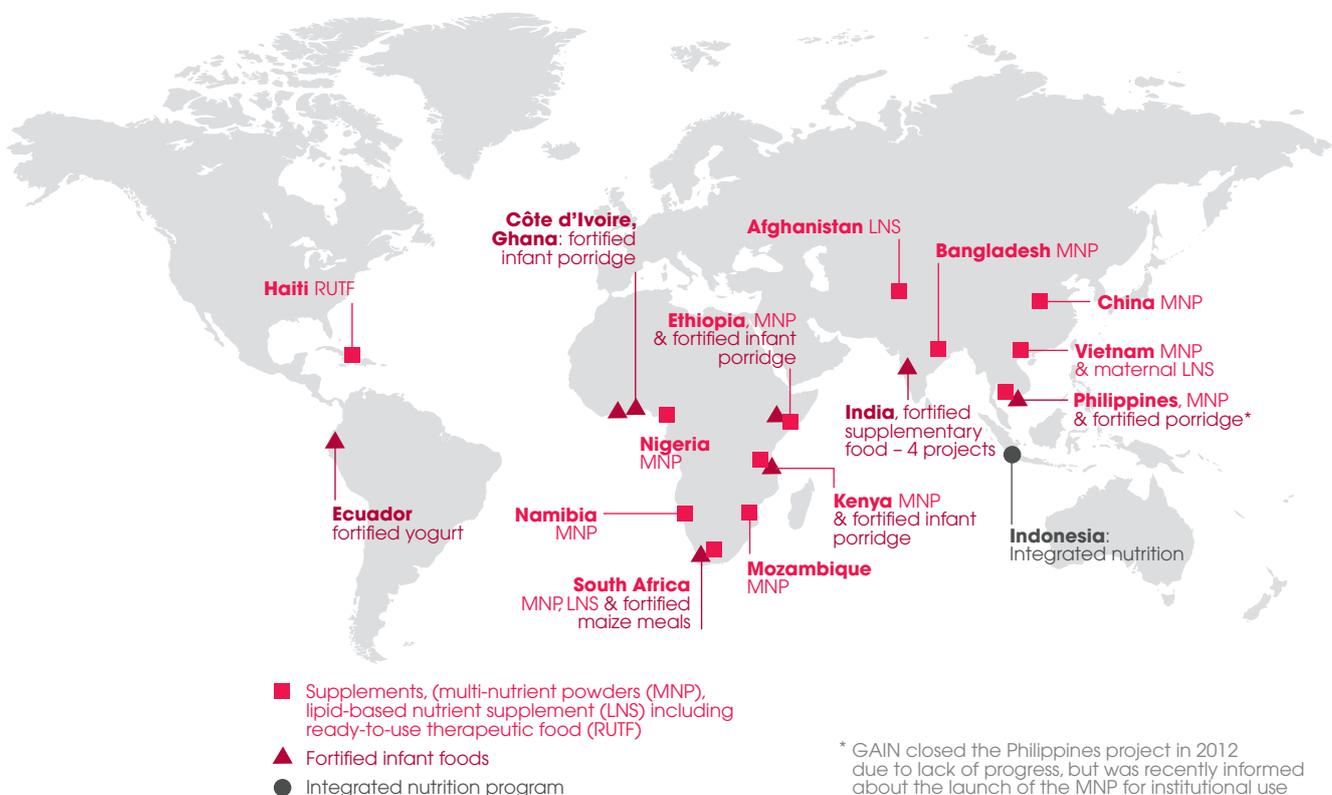


Figure 1: Geographical scope of the GAIN Infant Young Child Nutrition portfolio

Pathway to Impact

Because GAIN lacked any benchmark when developing its IYCN portfolio projects, we devised a pathway-to-impact plan that guided the activities as part of this portfolio of work (Figure 2). The ultimate goal was to contribute to the improvement of functional outcomes such as growth and development in children, but efforts and activities were focused much further up the pathway.

GAIN addressed specific gaps within the enabling environment, including barriers regarding availability and access, and initiated behavior-change and demand-creation interventions. GAIN and its partners sought to make substantial progress in identifying and testing strategies across these three areas, seeking to document progress across the pathway plan.

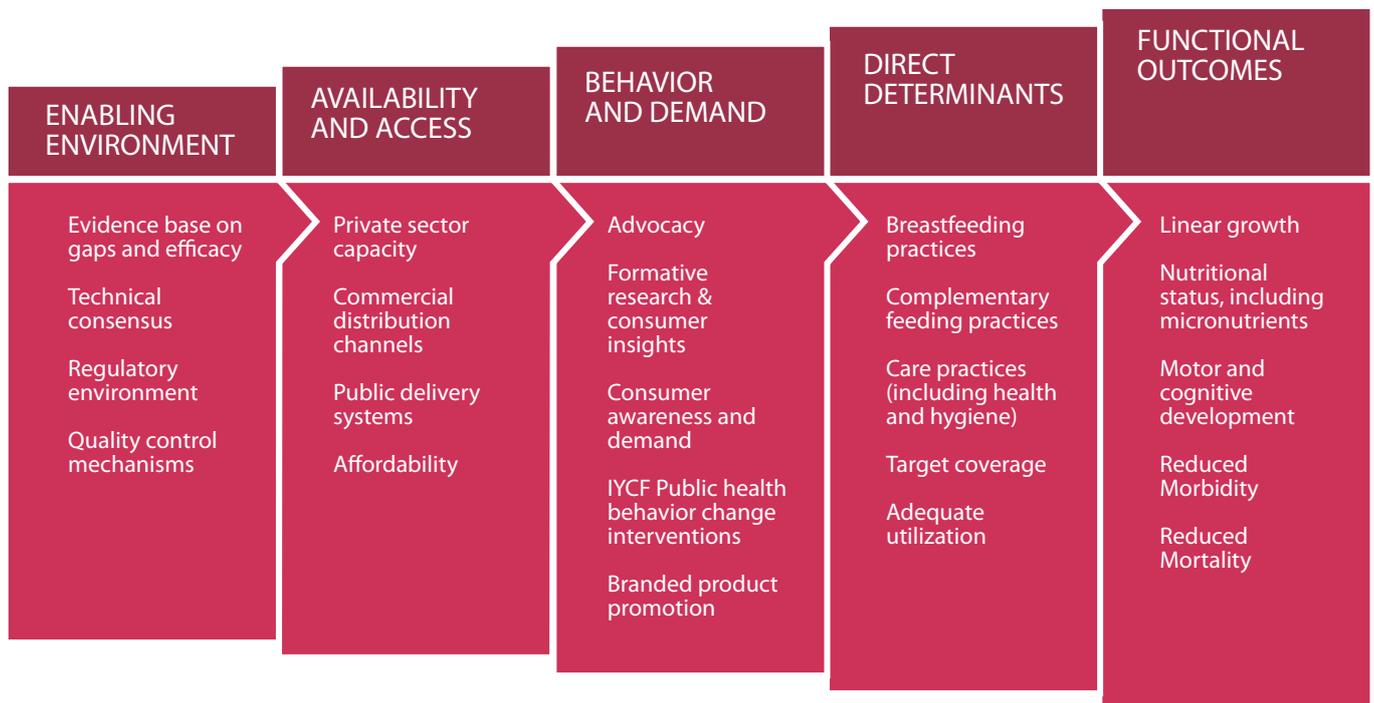


Figure 2: Simplified pathway to impact plan

Intermediate outcomes, which are important in the pathway to impact on nutritional status, such as coverage (sales and uptake) have been monitored for all projects, whereas adequate utilisation (depending on frequency and quantity of consumption) and coverage of the target (low-income) group, has been estimated in only some of the projects.

Measuring impact in this area is not easy. Given the highly complex and multifaceted environment that determines nutritional and health status in poor communities, the cost and complexity of assessing impact is extremely challenging and expensive. It has not yet been possible to measure the impact of GAIN’s IYCN portfolio on growth and development goals, though impact evaluation studies are currently being set up in projects in Bangladesh and Indonesia.

The projects that have been analysed, and from which lessons have been learned and synthesized, include projects in Bangladesh, Côte d'Ivoire, Ecuador, Ghana, Mozambique, South Africa, Vietnam, Afghanistan, China and Haiti. More detailed project briefs and case studies can be found at <http://www.gainhealth.org/programs/maternal-infant-and-young-child-nutrition/#achievements>.

Disaggregating the Market and the GAIN Portfolio: Commercial, Social Business, and Public Service Models

Across the 23 projects in the GAIN IYCN portfolio, each project has unique characteristics derived from factors such as country context, dietary practices, and degrees of involvement of government and NGO partners. The portfolio includes three types of delivery models: fully commercial, social business, and public service delivery (Figure 3). These models are segmented principally according to the level of subsidy required to sustain them at scale.

GAIN concentrated on models reaching target D and E consumers. The vast majority of complementary foods currently on the market are produced under the fully commercial model by global multinational food companies, and are unaffordable to D and E consumers. Although GAIN did support a few national partners to develop a fully commercial model (Panel A), and worked with others to set up a public delivery model (Panel B), most of the projects fall into the social business models category.

Social business models have an explicit social objective and are willing to accept lower return-on-investment than fully commercial models. Some of these models aim to reach full cost recovery and become commercially sustainable in the long-term, while others may continue to require subsidies in order to reach low-income consumers.

	LEVEL OF SUBSIDY		
	Fully commercial models	Social business models	Public Delivery models
Reason for investing	Investment for profit or for scale to leverage existing brand equity or portfolio	Profit objective leads to targeting the most profitable segments	Social & political objectives
Type of investment	Typically private capital, commercial loans	Typically private capital, commercial loans. Possibly grants, social impact investments & price subsidies	Donor and government funding, providing safety net for most vulnerable income groups
Production	Privately manufactured	Privately manufactured or manufactured by government institutions	Privately or publicly manufactured
Product distribution/marketing	Distribution and marketing via corporate retail channels	Distribution and marketing via corporate retail channels; community level distribution often supported by NGOs and /or in partnership with government	Distributed for free and promoted through public sector institutions
Revenue model	Customer covers costs and margin via selling price / profit margin	Selling price covers costs via margins, but social objective justifies subsidy in form of social investments, grants, Technical Assistance, etc.	Distributed for free and promoted through public sector institutions
Target group	Profit objective leads to targeting the most profitable segments	Segments A to E: Social objective allows to target lower income segments without profit	Segments D & E: Focus of government typically on poorest income segments, most vulnerable

A, B, C, D = A way of defining income groups, often used by private companies operating in developing markets. The A income groups corresponds to "high income", B to "middle income", C to "low income", D to "subsistence" whereas E segment is considered the "extreme poverty" segment or the very "Bottom of the Pyramid"

Figure 3: Typology of Models (GAIN and non-GAIN projects)

However, these models require both financial and technical assistance to overcome the high barriers to market entry and market success. “Investors” in social business models can be generally classified into two groups:

1. Donor grant funded programs that support the venture and help eradicate barriers to entry and sustainability. This can be done through subsidizing product development, financing of equipment, technical assistance, behavior change interventions, and through helping with a more enabling regulatory environment or any combination of the above.
2. Social impact investment programs. Social impact investors are willing to lend despite the higher risk profile of the business and are willing to accept a lower return-on-investment than commercial investors. This form of investment can be structured as a lower-interest loan for manufacturing equipment, longer repayment period, equity that expects less or no dividend, or even as cross-subsidization from a separate, more profitable business line. Backbone organisations such as GAIN can team up with social impact investors, enabling and supporting investors who wish to enter this unfamiliar territory.

Most of GAIN’s IYCN projects are driven by grants that are provided to small local companies and NGOs. All GAIN grants have been provided against detailed business plans and leveraged between 48% and 98% of counterpart investment. GAIN also has solid experience in leveraging funds from social impact investors. This approach provides the additional benefit of better financial discipline from the company, and allows for more input on maintaining the financial stability of the entire business rather than a narrow focus on a single product line (Panel C).

The strength of the business model is influenced by a number of contextual factors that relate to the company, the government, and the market (Figure 4). Project funding allocation was mostly targeting at strengthening the company’s capacity as well as supporting the public sector partner to strengthen the regulatory environment and distribution of products through public delivery systems.

In general, GAIN’s intervention model in the portfolio concentrated on support to individual companies, with fewer investments made in improving the overall market environment such as strengthening commercial distribution channels or marketing capacity, or developing greater effective demand for the complementary foods category as a whole.

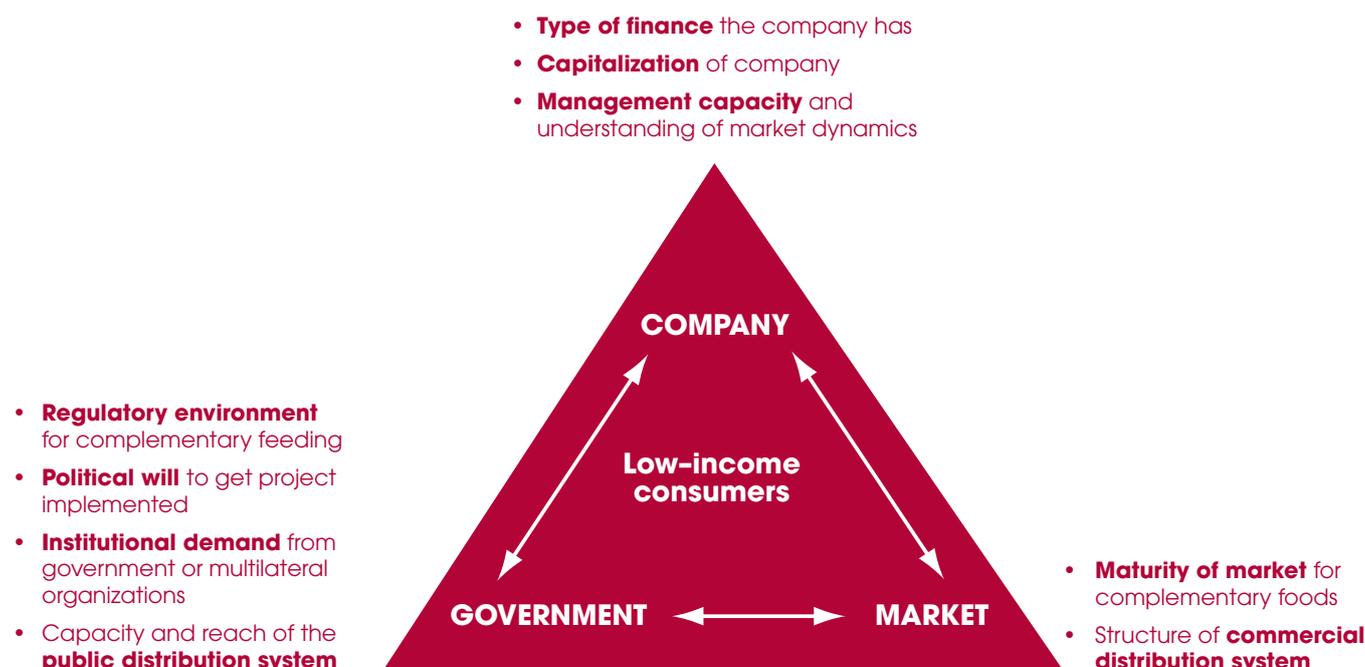


Figure 4: Factors influencing the business model

PANEL A: Fully commercial models

During the course of IYCN project portfolio development, GAIN encountered many companies interested in pursuing opportunities to develop and sell good quality complementary foods that would benefit low-income families, as long as it could be justified commercially. Fully commercial companies require a financial return to justify and sustain investment with margins of profit equivalent to other products in the company’s portfolio.

Achieving adequate levels of profitability, combined with the high reputational risk in entering a very tightly regulated IYCN market, has been the most important barrier to develop a fully commercial business model for fortified complementary foods or MNPs for customers at the so-called Base of the Pyramid (BoP). BoP consumers are defined as income groups living on 0 to 5 USD per day. Further segmentation into three groups include: “low income” (3-5 USD per day), “subsistence” (1-3 USD per day) and “extreme poverty” (below 1 USD per day). Typically, only the “low income” segment of the BoP already participates in commercial markets on a daily basis.

People in the “subsistence” segment often participate more sporadically in markets, as their income is not stable and often based on harvest sales or daily wages. People in the “extreme poverty” segment are typically excluded from markets and can only be reached through governments and NGO programs (Rangan, 2011). Another way of defining income groups, often used by private companies operating in developing markets, has been the A,B,C,D,E income class segmentation. The C income groups would correspond to “low income”, D would be equivalent to “subsistence” whereas E segment is considered the “extreme poverty” segment or the very “Bottom of the Pyramid”.

There are three key reasons why it is challenging for companies to find risk-adjusted returns in the lowest segment of the market and decide to invest. First, most businesses in dynamic economic settings, such as those common in developing countries, naturally aim to secure the highest returns possible over the shortest time frame. This often leads to either more profitable products being favoured for investment and launch or products target higher income consumers as they are more likely to make a purchase in a new product category.

For affordable fortified complementary foods or supplements targeting lower-income groups, a significant volume of demand needs to be generated in a very short time frame to compensate for the very low margins associated with BoP products. In effect, governance and incentive systems of purely commercial companies make it challenging to invest in lower-profit products as part of their core business (Simanis, 2014) unless they can guarantee demand at scale, for example by supplying institutional markets. Second, among the few big players that face little competition in the premium space for complementary foods, there is a reluctance to risk profit dilution, product or brand downgrading by launching a product targeting consumers at the BoP. Third, most large fast-moving consumer good companies are wary of the possible reputational risks associated with marketing foods targeting infants and young children – largely due to the highly regulated environment of IYCN.



Panel B: Public service models

Public service models are often the most viable solution to reach the most vulnerable. The distribution of nutritious food for the home fortification of complementary foods targeting the lowest income groups can be done for free, as through the Integrated Child Development Services (ICDS) in India, or subsidised at cost to the consumer.

The most prominent examples of public service models that GAIN has supported during the past year are two programs servicing the ICDS in India, namely the AP Foods program in Andhra Pradesh (AP), following a centralized production model leveraging the AP Foods factory, and the women Self-Help Group program in Rajasthan, following a decentralized model that relies on self-help groups to produce supplementary foods with local ingredients. Though fully subsidised, these models have similar lessons regarding efficiency and quality of production, distribution, and the need to invest in demand creation and behaviour change to maximise impact.

Supply of fortified supplementary foods through the ICDS

In India, food rations for over 90 million children, pregnant women, and lactating mothers are provided free of cost through the ICDS. This public delivery program, sponsored by federal and state governments, includes a highly decentralized network of 1.3 million Anganwadi Centres and community education and aid centres that provide education, healthcare, and nutrition services primarily to women and children.

In 2010 GAIN in India started up three projects (Andhra Pradesh, Gujarat, and Rajasthan) to increase the local production capacity and improve the quality of fortified foods that were supplied to the ICDS. Though the projects had the same objectives, they represent very distinct models.

Centralised production model in Andhra Pradesh

In partnership with the government-owned company AP Foods in Hyderabad, Andhra Pradesh, GAIN worked to increase the capacity and improve the quality of production of their fortified supplementary foods, such as ready-to-cook mixes for common meals. The collaboration between GAIN and AP Foods has led to significant improvements in the nutritional quality and packaging of the food that AP Foods produces. Additionally, GAIN's

investment and expertise acted as a catalyst for a substantial financial commitment from the State government to build a new, world class production facility, which allowed AP Foods to go from supplying 60% of the community centres, to all 100% of the 385 centres in the State, reaching over 3 million consumers.

The GAIN - AP Foods' partnership demonstrates how to use business-centred practices to improve the product quality and efficiency of a public production and delivery system. The AP Foods management prioritized impacting efficiency, scale, and quality incrementally while remaining cost effective. This allowed them to evaluate expert recommendations with an eye towards sustainability of the organization, as well as impact on women and children.

The decentralised production model in Rajasthan

This model centred around developing small-scale production facilities run by 10-12 semi-literate women entrepreneurs who would be both owners and workers in the factories. The production facilities in Rajasthan produce a product called Raj Nutrimix: a mix of flours and sugar, fortified with necessary micronutrients and palatable to children and pregnant women. The State Government of Rajasthan, through their social welfare program, acts both as a buyer and distributor of the product to pregnant and lactating women and to children younger than 3 years in the Anganwadi community centers.

The female self-help groups who benefit from a special legal status to access government subsidies and microfinance, are being trained to run a small production unit that produces up to 1 Mt per day of produce, reaching about 6,000 children younger than 3 years and nearly 3,000 pregnant or lactating women. The government of the State of Rajasthan provides the wheat at a subsidized price and guarantees the buy-back of the products through the ICDS. The village authorities provide the factory's premises and GAIN provided funding for the production equipment, 2 months' worth of working capital, as well as capacity building of the self-help groups.





Comparing the models, the centralized approach of AP Foods has many advantages over decentralized self-help group models, including increased economies of scale, a consolidated organizational structure that allows for easier management, and standardization and easier quality control. With this centralization, however, come high start-up capital requirements, a long ramp-up period, and a concentration of risk for the committed capital. With strong political support, raw material subsidies and regular orders from the ICDS, the decentralised self-help group model also proved to be a viable, scalable business able to achieve production costs on a par with the centralized model. It is, however, much more time and resource-intensive to build the capacity of the women groups

At the same time, working with self-help groups has a number of highly positive externalities with regards to the economic and social empowerment of the women participating in the program as well as the higher awareness of the fortified products in the communities, given the high local involvement in

production. It is important to point out that the Anganwadi Centres play a key role in the program, as their huge coverage allows for the products to be distributed widely, also in areas where traditional retail channels would not reach consumers. The project focus was on the efficient supply of a product of high nutritional quality by producers to the ICDS system.

Most governments will not be able to follow India's example to afford large free public delivery of nutritious foods or supplements and are therefore looking for alternative ways to ensure access and availability of these products, including social business models. In Vietnam, for instance, GAIN supported the formulation, production, and distribution of an MNP called 'Bibomix' for infants and young children age 6-59 months. In this pilot, the product is integrated in IYCF counselling efforts, delivered directly and exclusively by the health staff at commune, district and province level.

The health staff is responsible for the delivery of the counselling on optimal feeding practices, and generate a small margin to recover their costs, based on the sales of the MNPs to caregivers for an affordable price. The revenue stream helps the health system recover the costs of distribution, training and counselling, and allows for a sustainable model that will be expanded to more provinces and to more products.

<http://www.gainhealth.org/knowledge-centre/10-women-rural-rajasthan-improving-nutrition-thousands/>

PANEL C: Innovative finance as a tool to improve nutrition

GAIN's Innovative Finance Program has piloted various models for partnering with investors who focus on generating both a social impact and a financial sustainability return from their investments. GAIN grant money has been used to attract investment capital in order to support sustainable local production of foods.

In Haiti, for example, Meds and Food for Kids (MFK), a non-profit organization, saw an opportunity to produce high quality peanut-based therapeutic foods at scale, but they did not manage to generate the financial support to build a modern factory. LGT Venture Philanthropy (LGT VP), a Swiss-based impact investor was asked by GAIN to conduct a detailed financial analysis, on the basis of which they decided, with GAIN, to pool their funds in order to extend a loan to MFK to construct its factory. Within 9 months of receiving the loan, the factory was complete and MFK's production of therapeutic foods had commenced, enabling it to save the lives of more than 30,000 children in its first year of operations. Between 2010 and 2013 MFK's revenue increased by 33%, following the upgrade in production.



MFK's financing needs are not unusual. Many businesses looking to achieve social impact in low-income economies have difficulty accessing the capital needed to start and scale-up. At the same time, many development actors are usually reliant on grants to support interventions. By partnering with investors, including those who seek a social impact in addition to (or instead of) a financial return, development actors can use their grant money to reduce the risk of investing in a way that

attracts, rather than substitutes for, private capital, and thereby generate a wider range of financing solutions.

In GAIN's experience, working with social investors offers the following advantages:

Promoting sustainability and scale – social capital leverages development actors' support and creates incentives for a market-based intervention to be sustained over time.

Addressing a range of financing needs – there is no one size fits all, but appropriate forms of financing (for example, debt and equity), can be tailored to diverse funding needs.

Amplifying the impact of scarce resources – investment partnerships allow the development actor to stretch its scarce resources across more interventions, thus broadening its impact.

Adding a complementary skill set – investors bring a set of skills and capabilities such as business and financial expertise, as well as networks of experts in various businesses.

Reducing risk for innovators – purposeful use of grant money to support a first step towards innovation, within the context of an investment partnership helps to reduce the financial risk to the company.

GAIN and the International Finance Corporation (IFC) – the private sector lending arm of the World Bank Group – worked with an Ecuadorian food company that was interested in creating a fortified yogurt for low-income consumers. By using a matching grant to cover a portion of the cost of a market study, GAIN and the IFC reduced the risk to the company confirming the market potential of such products. This laid the groundwork for several subsequent stages of support, including advice on product formulation, marketing and assistance with the development of a business plan. This initial use of grant money ultimately led to the launch of a new product largely financed by the IFC and the company's own capital.

Partnerships with investors are an additional strategy to support market-based interventions with positive development outcomes. When used appropriately, these partnerships can help development actors take one more step towards achieving a sustainable impact at a scale that could not be reached through grant money alone.

3. KEY FINDINGS

GAIN used a mixture of methodologies to derive the lessons learned that are outlined in this paper. A mid-term review of the portfolio was conducted by Cambridge Economic Policy Associates (GAIN, 2012) which led to several changes being made to program focus. The Boston Consulting Group (www.bcg.com) was then engaged to review the business models once the projects were up and running and to assess their potential impact, scale-up, sustainability, and replication.

Case studies conducted by the Global Business School Network and Tuck Business School through on-site evaluation and quantified business model analysis, have been published and contributed to the development of the lessons presented in this paper (GAIN a,b,c, 2015). In addition, case reports and individual experiences of our partners and project staff were collected and workshops were held internally and with donors, partners, and other stakeholders.

Based on the analysis of the different projects and different business models, GAIN has extrapolated six “clusters” of lessons that should be considered to promote increased availability of nutritious foods and supplements, affordable access, and high quality and appropriate use to improve nutrition among low-income consumers.

Each of the six lessons represents one of the levels of intervention (Figure 5) from the enabling or regulatory environment, the competitive market place, as well as factors involved in how the consumer is being reached, and the behaviour of that consumer in terms of the choices he/she makes (Panel D).



Figure 5: Intervention levels of GAIN's IYCN portfolio.

Six key lessons learned

1. **Translating global evidence** into robust normative and **regulatory guidelines** is crucial to creating a favourable enabling environment for the introduction of products as part of the solution; working with **strategic multi-stakeholder alliances** provides the necessary base of credibility, trust and transparency
2. **Market analysis** of new product categories for low-income consumers shows more conservative (slower) return-on-investment than industry benchmarks utilized for more mature markets.
3. **Reducing barriers to market sustainability** and success for private sector producers can be stimulated by financial and technical input support at different points along the value chain.
4. **Product innovation** requires deep consumer understanding, and is paramount in responding to consumers' needs and drive appropriate use of IYCN products.
5. To create access for target consumers and drive demand for IYCN products, a **mix of traditional and alternative public and private sector delivery channels** must be used.
6. Sufficient investment and innovation in **demand creation and aligned behaviour change** interventions are a prerequisite to guarantee trial, uptake, and adequate use.

Lesson 1. Translating global evidence into robust normative and regulatory guidelines is crucial to creating a favorable enabling environment for nutritious products; working with strategic multi-stakeholder alliances provides the necessary base of credibility, trust and transparency

In order to guide companies in the development and marketing of nutritious complementary foods aligned with public health principles, two normative guidelines are central: the 1991 Codex Alimentarius (FAO, 1991) and the International Code on Marketing of Breast Milk Substitutes (WHO, 1981).

The first hurdle encountered by GAIN to incentivise companies to produce nutritious complementary foods was the lack of appropriate guidelines for product formulation. The market rarely provides incentives to formulate products according to the latest scientific evidence, because it is driven by consumer wants and needs, not scientific evidence. Moreover, smaller companies are often unaware of scientific evidence or lack the expertise to translate new findings into product formulation if there is no national level legislation.

In order to share technical updates and create consensus on key technical issues and policy concerns, GAIN has served as the secretariat for the MIYCN Working Group under the Ten Year Strategy Initiative. This Working Group is a virtual network of more than 100 global scientists and technical experts focused on nutrition programming, specifically for the first 1000 day period of life. Collaboration among the MIYCN Group members generated the content for a number of formal publications, of which two will be mentioned specifically here.

The first publication of the MIYCN Working Group dealt with formulations for fortified complementary foods and supplements (MIYCN WG, 2009). This was an important step since product formulation guidance provided by the 1991 Codex Alimentarius standard for complementary foods was outdated and did not include recent scientific evidence. In parallel, GAIN supported the Ghana-led Codex Alimentarius Working Group to ensure inclusion of the same scientific evidence at a global level. These two activities resulted in the 2013 revision of the Codex Guidelines on Formulated Supplementary Foods for Older Infants and Young Children (FAO, 1991).

A second important publication developed by the MIYCN Working Group, and supported by GAIN, aims to provide guidance on “dos and don’ts” in the marketing of complementary foods to children age 6-23 months

(Quinn et al, 2010). The International Code on Marketing of Breast Milk Substitutes (WHO, 1981) provides strong advice on marketing of infant formula in order to ensure continued breastfeeding, but it is not intended to address the marketing of complementary foods. In 2013, WHO mandated a scientific and technical advisory group to look into marketing of complementary foods and to provide recommendations. Similarly, in the area of home fortification of complementary foods, GAIN supports the secretariat of the Home Fortification Technical Advisory Group (HF-TAG), which brings together a community of stakeholders involved in home fortification comprised of members from the public, private, academic and NGO sectors. The HF-TAG offers a centralized repository of knowledge and practice to help ensure well-designed and effective home fortification programs across countries and within the context of other IYCN or nutrition sensitive programs (www.hftag.org).

Equally important to shaping the global enabling environment was GAIN’s support to developing national capacity. The policy nexus between breastfeeding and complementary feeding is sensitive and complex. The application of the International Code on Marketing of Breast Milk Substitutes itself faces continuous challenge resulting in less than optimal breastfeeding rates due to weak regulatory regimes, and poor compliance and inappropriate marketing by some companies. Given these challenges, it is critical that national policies and regulations are evidence-based, developed in a transparent manner led by government and include a range of stakeholders, and are not driven by any vested interest.

In Kenya, Namibia, and Indonesia, GAIN’s support has led to the establishment of national MIYCN Working Groups, uniting local and international experts to inform national nutrition planning processes. The working groups support, amongst others, national processes to establish product category standards (for example, for lipid-based nutrient supplements) as well as building awareness and capacity of local stakeholders around MIYCN, home fortification, dietary guidelines and behaviour change. In Côte d’Ivoire, Helen Keller International and GAIN supported the Ministry of Health in the adoption of a local version of the International Code on Marketing of Breast Milk Substitutes, as well as the development of a product standard for fortified complementary foods, based on the revised Codex Alimentarius recommendations (FAO, 1991; Panel D).

Without up-to-date product standards, GAIN's advice on product formulation to companies stood no ground.

The 2013 revision of the Codex Guidelines on Formulated Supplementary Foods for Older Infants and Young Children (CAC/GL 08-1991) ensures that governments and producers are guided by recent scientific evidence

Such strategic alliances and alignment with many of the global nutrition actors have been successful in improving coordination and interaction, as well as identifying priorities and collectively addressing the technical challenges. GAIN has supported these processes,

providing secretariat support and financial support to the development of publications and other outputs. However one organization alone cannot shape global and country agendas. The contributions in terms of time, effort, and expertise that nutrition partners continue to put into these alliances are fundamental to any progress being made. The credits go to a long list of organizations that cannot all be listed here, but notable among them are UNICEF, the World Food Programme, Helen Keller International, John Snow International, the University of California Davies (UC Davies), the Micronutrient Initiative, Sight and Life, and the Hospital for Sick Children, Toronto.

More detail on GAIN's work to create enabling environments at a global and country level is described in Paper 3 of the GAIN IYCN Series (Siekmann and Schofield, 2015).

PANEL D: Ensuring Code-compliant labelling and marketing

While working with infant food producers, it was of major importance to GAIN to ensure that all marketing activities of the companies were compliant with the International Code on Breast Milk Substitute Marketing (WHO, 1981), whether it was around labelling, packaging, or marketing. Since the Code did not intend to give guidance for marketing of complementary foods and the interpretations vary widely, GAIN together with experts has developed a guiding note on how to interpret the Code and subsequent World Health Assembly resolutions.

Some small local companies are not even aware of the existence of the Code or its application to foods other than formula milk for children under 2 years. In addition, once companies are made aware of the marketing guidance, changing their packaging and messages takes time and involves continuous engagement with the partner. Similar to changes in taste or pricing, companies are hesitant to change the package design and messaging of their existing products – fearing this will destroy their brand equity (brand position) and lead to loss of target consumers. PKL in Côte d'Ivoire, for example, kept its original product, with the well-establish brand name "Farinor" and its non-Code compliant packaging in the market for a certain time for fear of losing market share. However, based on consumer insights indicating the original packaging looked 'old' and constant, albeit slow growth of the new product under the co-branding "Farinor-Nutribon", PKL revised the packaging of the old "Farinor" product to make it Code-compliant.



Code-compliant packaging of "Nutribon" in Côte d'Ivoire

In order to comply with the Code, producers are not allowed to use health professionals to market or sell their product. In certain countries, however, an exception is made for MNPs, which do not carry any risk of breast milk displacement. In Vietnam for instance, Bibomix MNPs are being promoted as well as sold by government health workers,

In virtually all projects, GAIN has provided technical assistance with regards to packaging design and imaging as well as advised on marketing strategies, to avoid promotion of products in health centres and unacceptable health and nutrition claims, and ensure alignment with the Code.

Lesson 2: Market analysis of new product categories for low-income consumers shows more conservative (slower) return-on-investment than industry benchmarks utilized for more mature markets

Bringing a new product on the market requires detailed market analysis, validation of the potential demand for the product, competitor analyses, as well as formative research to understand consumer habits in order to define the viability of the business case and build a business plan. Many social businesses, social investors, and donors that GAIN works with had not previously considered entering the market for nutritious IYCN products for low-income consumers.

Market analysis

GAIN supported many of its partners in conducting extensive market assessments, as well as developing a detailed business plan. GAIN's support to the International Finance Corporation's client Favorita, an Ecuadorian fruit and yoghurt company, is a good example of successful support for market assessment. Favorita received partial funding from GAIN to do a detailed market assessment prior to proceeding with the actual product development. Only after the market analysis showed a clear potential demand for the products, as well as consumer willingness-to-pay for the proposed product, did the project move towards implementation. GAIN continued to provide technical support and once the product formulation was set, GAIN supported Favorita and the International Finance Corporation in the development of a more detailed business plan.

Because IYCN products for low-income households explore a new market segment, it has proven challenging to precisely identify the opportunities when building the business case – for example, defining accurate estimates of the size of the target market, penetration rates, and trial and repurchase issues. Nycomed Taheda, the company launching Emvit



Sprinkles in South Africa therefore decided to target early adopters and high-income groups in urban pharmacies. The company decided that immediate targeting of low-income consumers was too risky when launching a completely new product category. However the company's market development model aims to exploit a trickle-down effect to lower-income groups to copy and adopt this new behavior over time.

Expectations were overly optimistic on how many low-income consumers could be reached in immature markets within 4 to 5 years, and how quickly this could happen.

Industry benchmark for successful product launch and uptake in mature markets is even longer than that: around 6 to 8 years.

In hindsight, GAIN concluded that the market potential for fortified complementary foods for infants had tended to be systematically over-estimated in the business plans, which were derived from the estimated number of potential undernourished infants and children who would access the product. This assumption requires that in addition, supplementary investments in the marketing and distribution required to create awareness around the new type of product to reach the hard-to-reach target populations happened. In particular, new product concepts, such as MNPs, require a lot of start-up investments in awareness raising and behavior change among consumers.

Thus, in the development of the grant, GAIN and donors were overly optimistic with regards to how quick and how many low-income consumers could be reached through the market within 4-5 years. Industry benchmark for successful business case development, product development, market testing, launch of a product, and creating successful demand and uptake is 6-8 years in a mature market. In the countries where GAIN operates in markets where consumers are at the Base of the Pyramid and companies are often less mature, we are working in challenging dynamic contexts with weak health infrastructure and in some cases civil conflict. In these demanding situations, GAIN aims to create a market for products that consumers have never used or seen before.

Smart positioning in a competitive landscape is feasible

It is a common misconception that lower-income consumers only want, and can only afford, cheap products. GAIN’s experience shows that poor people do not want cheap products, but are willing to pay for quality at the right price. This is an important consideration, because there is a constant tension between nutritional quality and affordable price. Put simply, nutrition comes at a cost.

Protein Kissée-La in Côte d’Ivoire has identified the optimal price lower income consumers are willing to pay for a high quality product, which falls between the price of traditional foods and premium branded products (Figure 6; Kayser and Klarsfeld, 2014). Smart pricing that is based on a detailed understanding of the competitive landscape enables companies to capture the lower-income consumer.

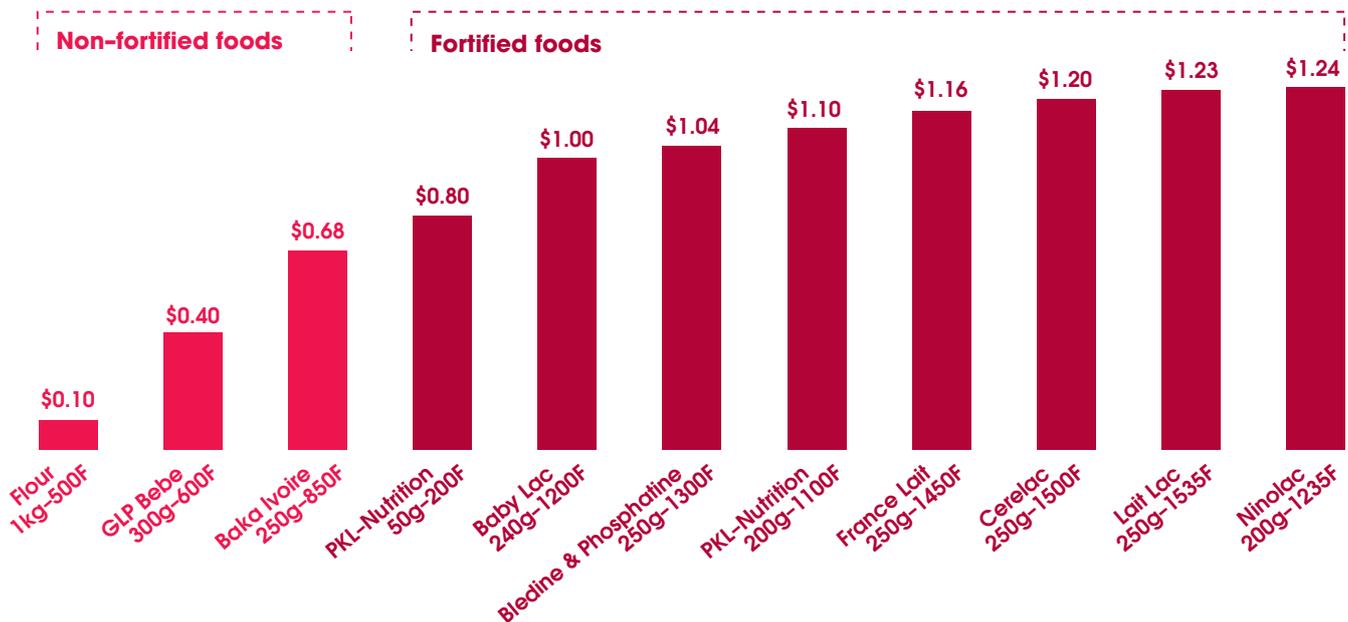


Figure 6: Range of available products that fall between traditional foods and premium branded products. (Price of 100g of infant food in Côte d’Ivoire, in USD) Kayser and Klarsfeld (2014)

Subsequently, in Côte d’Ivoire, the launch of the Nutribon high-quality product, in economic size packs (50g) that looked appealing caused competitors to lower their prices and copy the economic pack size. Competition resulted in more affordable prices for the consumers, which in its turn will lead to increased demand for these products by the consumers. It is expected that this competitive pressure will prevent GAIN’s private sector partners from increasing their price after the project ends. These companies would risk losing clients to the competition were they to leave their ‘niche’ price position.



Lesson 3: Reducing barriers to market sustainability and success for private sector producers can be stimulated by financial and technical support along the value chain

Small and medium enterprises require external capital investments or subsidies that help them reduce barriers to market entry and offer them an opportunity to grow their profits in the long run. In the case of AP Foods in India, a GAIN grant triggered a change in company strategy and a considerable additional investment by the government-owned company itself in new plant and equipment. PKL in Côte d’Ivoire used the GAIN grant to obtain a commercial credit from BNP Paribas. The company’s CEO Marie Konate confirms that the strengthened balance sheet as well as improved credibility through the collaboration with GAIN helped her to secure this loan.

Reducing barriers to market success for local producers requires not only financial support, but also substantial technical and managerial support

With appropriate financial and technical support at different steps along the value chain, GAIN’s role as the backbone organisation was to eliminate barriers, starting from the regulatory environment, translating product standards into product development, throughout the value chain, all the way to product compliance (Figure 7). This is where the bulk of GAIN’s support to companies has concentrated, reaching close to 19 million customers.

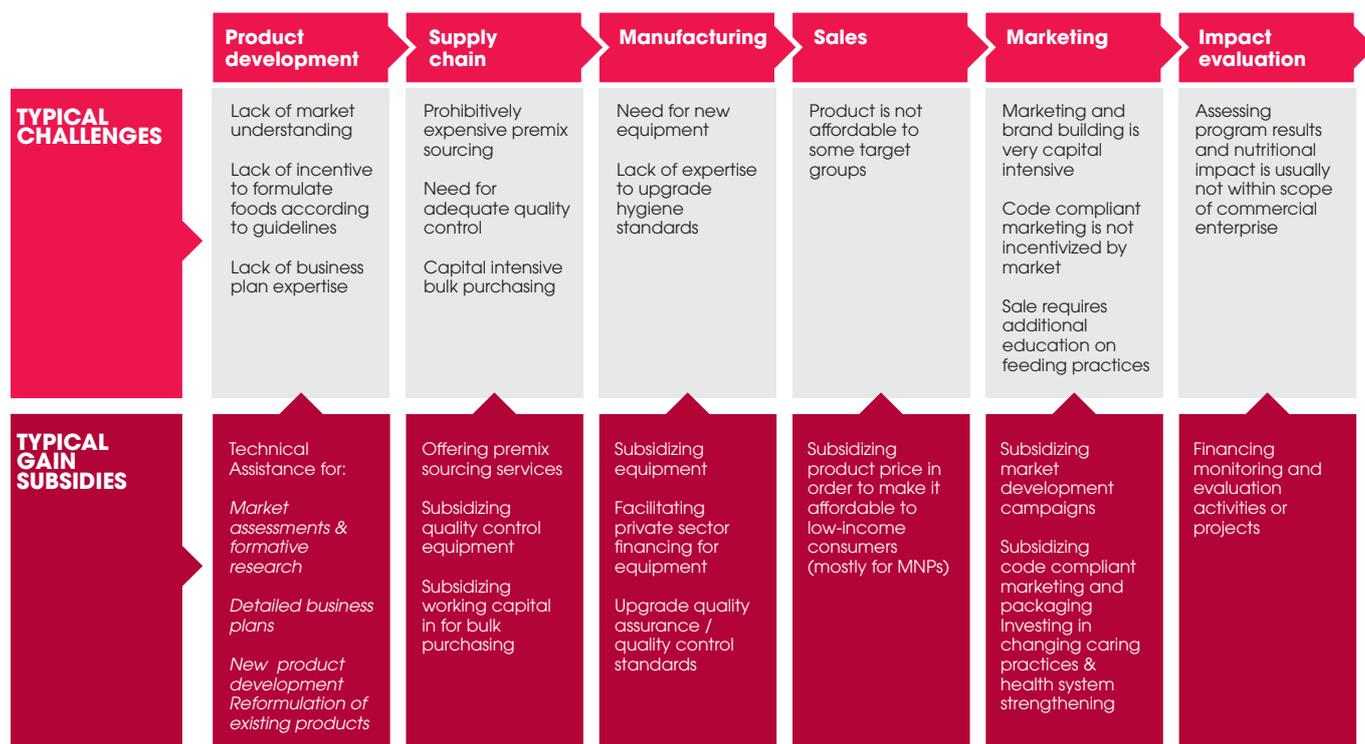


Figure 7: Overview of typical challenges and types of subsidies in projects that are following the social business model

Product development and composition

GAIN guidelines for fortified complementary foods are based on scientific evidence and include recommendations regarding coverage of 50% of most micronutrient requirements, maximum portion size, energy density, maximum sugar levels and protein quality, amongst others (GAIN, 2011; FAO, 2013). The typical barriers for companies to reformulate existing foods according to nutritional guidelines are – not surprisingly – related to the balance between cost and taste versus food and nutrition quality. They can be summarised as follows:

1. Higher level of fortification. Particularly the inclusion of more iron or a different iron compound can have an impact on cost, taste, and colour of the product. It can also lead to the need for more expensive packaging to safeguard product stability and shelf life.
2. Lower percentage of sugar than is usually included, reducing acceptability for consumers.
3. High quality ingredients such as milk protein will drive up costs of the product.
4. Portion size recommendations have been reduced in the revised 2013 Codex Alimentarius to avoid risk of displacing breast feeding, potentially impacting on sales volumes.

GAIN has learnt that implementing recommended standards can have a significant impact on the product cost structure and GAIN has therefore worked with partners to identify cost savings along the value chain. This was evident when working with small local companies as well as with the more established players. For both PKL in Côte d’Ivoire and Yedent in Ghana, nutrition quality was the driver of the GAIN grant, but quality came at a cost, and for PKL this resulted in a higher price of the end product than was foreseen in the initial business plan.

**Nutrition quality comes at a cost...
What is optimal in terms of nutritional guidelines is not always feasible in terms of market incentives and economics.**

When working with larger producers such as Indofood in Indonesia, GAIN encountered a different set of challenges. Without the same lever of financial support provided by GAIN as part of the partnership, it was much more challenging to convince the commercial partner to change their product formulation. All recommendations regarding product composition or packaging have to be verified against their impact on the business case and on-going product sales. A good

example is GAIN’s request to reduce the recommended portion size from 50g to 20-25g as recommended by the 2013 Codex Alimentarius. The Indonesian product standard, however, still prescribes portion sizes of 40-50g, and the company anticipates a negative impact on volume sold if they would be the first to move in reducing portions. While GAIN is advocating for the adoption of the revised 2013 Codex Alimentarius guidelines with the Indonesian Bureau of Standards, Indofood has agreed to make small but significant changes in product composition regarding the iron compound used. The issue of portion size will need to be resolved for the entire category with a new standard and will take more time, highlighting the significant interdependencies between product standards, price, and market development.

Raw material sourcing: creating efficiencies in the supply chain

For small manufacturers, supply-chain support can make a big difference to profitability. The price of raw materials is one of the main drivers of a product cost, whereas at the same time, the quality of the raw materials is an important determinant of the quality of the end product. Small producers are often not able to benefit from efficiencies and economies of scale when procuring raw materials for low production quantities.

Importantly, price fluctuations of commodity inputs can easily reach up to 20% of the commodity value and can make or break profitability of a product. Though these fluctuations are partially predictable, such as the harvest and lean season in the local market, small players do not have the necessary funds to purchase ingredients in bulk at the right time. For this reason, Yedent in Ghana decided to use part of the GAIN grant as working capital to buy its raw material at the lowest price in the market, prior to being ready for production. Similarly, in Rajasthan, the government’s rice subsidy allowed female self-help groups to avoid market price fluctuations of raw materials and produce the fortified supplementary food at the price set by the government.

For small players, supply chain support can make a big difference, allowing for economies of scale and protecting against price fluctuations.

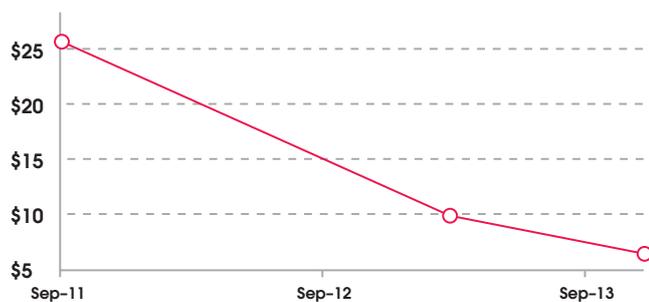
Another typical supply-chain issue that the smaller private sector partners encounter in particular is that sourcing of imported ingredients such as milk powder or premix can be prohibitively expensive in many African countries, because very few factories operate in this arena on the African continent and relatively high importation and Value Added Taxes (VAT) apply. Through a centralised tendering process, the GAIN Premix Facility (GPF) makes premix available to GAIN partners at the lowest possible costs. GAIN partners were

able to lower their premix costs up to 40% during the past 3 years as the examples below show (Figure 8). Particularly for micronutrient supplementation projects, sourcing premix at the right price is a key factor for the viability of the overall business case. An additional important factor is that in some countries the GFP manages to negotiate a tax exemption on imported premix, for example in South Africa, which has benefited GAIN’s partner Nycomed.

Beside the services of the GFP in managing the tendering, procurement, and tax exemption there is no financial subsidy of premix prices for any of the companies.



Yedent’s purchase of Vitamin Premix through the GFP USD/kilo



PKL’s purchase of Vitamin Premix through the GFP USD/kg



Figure 8: Premix price development for partners of the GFP

Wherever possible, local sourcing of raw ingredients and thus supporting smallholder producers is a priority. PKL, for example, sources its grains from women farmers around Abidjan, Côte d’Ivoire whereas Yedent procures its maize from farmer cooperatives in the Sunyani district in Ghana. However, given the widespread aflatoxin issues – particularly for maize grains and legumes – quality control is a key prerequisite to making the local sourcing strategy possible. GAIN gives sustained support for quality control, amongst others through spot-checks equipment for aflatoxin, to strengthen the procurement quality of local partners.

Improving manufacturing capacity, quality assurance, and control

a. Upgrading manufacturing equipment

As outlined previously, most of GAIN’s private sector partners who enter the fortified complementary food space are small local enterprises. As a result they do not have the necessary production equipment or their equipment is out-of-date, with limited capacity, and they are unable to produce a high quality product that could

serve the local low-income consumer. Securing commercial loans or attracting equity investment for this kind of equipment is not an option, because these partners are often not capitalized sufficiently to provide the required guarantees to local financial institutions.

GAIN offered its private sector partners the opportunity to finance the necessary machinery, laboratory, and other quality assurance & quality control (QA/QC) equipment (typically extruders, mixers, dosers, and modern packaging machinery; Figure 10). Companies in Ghana, Côte d’Ivoire, and India for example, have used a large part of their GAIN grant to renew their production lines as well as installing proper food quality and safety laboratories. This in turn has made the production process more efficient, increasing the production capacity and leading to a higher quality and more convenient (for example, instant) product. The level of investment in equipment committed by GAIN to date has varied from 4% to 37% of the total project grant budgets.



Figure 10: New production lines for Kidifeed, in Ghana (left) and Raj Nutrimix, India (right)

b. Raising the bar for manufacturing practices

The production of infant foods demands stringent hygiene standards. Most partners did not have an ISO certification for their processes, nor did they follow a preventative HACCP (Hazard Analysis and Critical Control Points) approach, because this was not required for their existing product portfolio or by local regulation. From a public health perspective, however, no food safety risks are acceptable when infant and child foods are concerned, and a stringent QA/QC is core to GAIN’s objectives.

For this reason, GAIN supported various partners with technical assistance either by supporting the set-up of a laboratory at the company’s premises or training personnel in HACCP Standard Operational Procedures. This caused some tension with the private partners when GAIN requested additional tests, additional to national standards and requirements.

For example, Yedent’s product was already approved by the local Food and Drugs Authorities in Ghana. However GAIN, as an international organisation required to comply with international recommendations, requested that a number of additional tests must be conducted. The results from these tests were not entirely to GAIN’s satisfaction and additional QA/QC measures were agreed to ensure the product meets both local and international standards (Panel E).

Rigorous quality controls, however, also open up new markets for the local companies as they may fulfil strict supplier requirements that are applied by international organisations or NGOs. Improved access to institutional markets for large international humanitarian agencies can boost a company’s volumes and reduce time taken to break even. Renata in Bangladesh, for example, supplies the BRAC community distribution network with Pushtikona MNPs. This represents a much larger volume of sales than through their traditional pharmacy channel. Another example is PKL in Côte d’Ivoire: in the past they produced a fortified complementary food called CerealPlus (formerly Corn Soy Blend +) for the World Food Programme, and now there are renewed discussions around CerealPlus institutional supply.



**PANEL E:
Yedent, a local company,
determined to improve
nutrition in Ghana**

Yedent Agro-processing Ventures Ltd is a local manufacturer in Sunyani, in Center-Ghana, driven by a mission to provide nutritious and affordable foods for Ghana and West Africa. GAIN worked with Yedent to adapt their existing maize-based complementary food into a high quality, instant infant food (KidiFeed) enriched with vitamins and minerals. The grant agreement was signed in May 2010, but it took until end of 2014 for Kidifeed to be launched into the market. The road was long and presented many challenges, which GAIN and Yedent resolved together.

Support business plan development of local companies to address inaccurate assumptions.

The cost-structure in the original business plan was based on the original product which was non-instant and non-fortified. Insights from formative research in the first phase of the project recommended producing an instant product, to respond to mother’s need for convenience and time. This obviously had budget implications for additional equipment, and therefore price point of the product. Close to the launch, Yedent and GAIN re-conducted a cost analysis, leading to an increased sales price ensuring business sustainability. The new price still falls within the price range that low-income consumers are willing to pay and is not expected to have an impact on sales and affordability.

Project management and support to the partner require in-country presence.

GAIN did not have a Ghana country manager until mid-2012, and managed the project from Geneva. The distance led to insufficient appreciation of the local situation regarding time and resource needs. For instance, the production premises lacked essential infrastructure such as gas, clean water, and ample electricity supply to power the new equipment. Resolving these issues in Central Ghana proved unexpectedly complex and resulted in significant delays. GAIN technical experts visited the factory multiple times to conduct analyses, correct course and provide technical assistance.



Management and technical capacity of local companies requires ample investment.

Through its partnership with GAIN, Yedent attracted attention from other international companies. These projects diverted time and limited resources of Yedent’s senior management thus affecting GAIN’s project.

GAIN supported Yedent with the review of the needs and recommendation of manufacturing and laboratory equipment. Upon reception and installation of the equipment, Yedent’ staff did not recognise the defective status of some of the equipment, resulting in additional costs and delays. Despite the challenges, Yedent succeeded in launching a high-quality and affordable complementary food product on the market in Sunyani district, with plans to quickly roll out to Accra and beyond. As a local company, using local ingredients, Yedent is commended by the agricultural, health, and traditional authorities in Ghana. Although the project targets have not been achieved within the time-frame that was initially set, the vision and passion of this company will ensure a slow but steady growth in the distribution and uptake of Kidifeed.

Lesson 4: Product innovation, requires deep consumer understanding, and is paramount in responding to consumers' needs and drive appropriate use of IYCN products

All GAIN-supported projects have demonstrated that low-income consumers are quality conscious. They want to avoid wasting limited disposable income on poor products and instead spend their resources on relevant, appropriate, appealing, aspirational, and high-quality products.



High quality appealing packaging and choice of flavors are also important drivers that inspire trust in quality of the product for low-income consumers. To drive uptake of any product it is important, specifically for low-income consumers, that products are perceived as aspirational, high quality, and trustworthy. Business planning based on detailed market assessment and consumer insight must translate into products tailored to the needs and the wants of low-income consumers. The packaging of Nutrison in Côte d'Ivoire and Bibomix in Vietnam are examples that compete with the packaging of any premium product, whereas they are priced much lower.

Formative research conducted in Ghana (Pelto et al, 2011) pointed to the importance of convenience for low-income consumers, who are both resource-constrained and time-constrained. Mothers did not have the time to prepare separate porridges or meals for their children. It is not surprising that this consumer behavior holds for developing markets as well as for developed economies - taste, price, and convenience are the main drivers for consumer behavior in food. Based on the

insights of this research, Yedent, GAIN's partner in Ghana, decided to change its plans and launch an instant product requiring minimal preparation.

Mothers want to give their children the best food they can afford and which is most convenient - not necessarily the cheapest product on the market

In Vietnam, one study (Alive & Thrive, July 2013) identified the key components of the packaging and product mix that helps increase adherence and appeal towards mothers. The locally manufactured product, with local brand of MNPs, Bibomix (meaning "the mix for babies"), is sold in packs of 10 sachets, which equals a monthly dosage, with 60 sachets in a box for a semi-annual dose. In this case, consumer-tested colorful packaging, locally relevant branding, and right sizing/pricing combination with government endorsement, positions the product alongside established brands, thus inspiring quality and trust (Panel G), and ultimately higher uptake.

Lesson 5: To create access for target consumers and drive demand for IYCN products, a mix of traditional and alternative public and private sector delivery channels must be used

GAIN’s experience has confirmed that it is challenging to reach lower-income consumers through the commercial retail market alone. This is not just because low-income consumers often do not buy in retail, but also because retail channels are not equally well developed everywhere, and sometimes even non-existent in rural areas. Moreover, it is sometimes difficult for small companies to access these channels via wholesalers or distributors because of monopoly situations that are common in food distribution in developing economies.

In addition, distributors and shop owners take a margin of the final product price, which is much higher for small companies than for established consumer-goods companies. Interviews with established players such as Unilever and Nestle reveal that they spend less than 10% of the final product price as margin to the distributor, and less than 10% as margin to the shop owners. For small companies without established brands, these margins are much higher, totalling in the range of 40%-50%. The reason why large companies benefit from low margins is largely due to high sales volumes and driven by intense marketing efforts. For products marketed by small companies, the distributor takes a risk that these products might not sell fast and that they take up shelf space. As compensation, therefore, the seller will be setting a higher profit margin on the final product price.

Improving access through multiple delivery channels

To overcome the aforementioned challenges, social businesses need to use all available delivery channels in order to accelerate demand creation and optimize access for the targeted low-income population. In almost all of the GAIN-supported programs, non-traditional delivery channels have been adapted for nutritious products, including leveraging community or health systems platforms, and working with social marketing organizations.

To increase reach to low-income consumers, GAIN’s project in Mozambique is piloting voucher distribution through health centers and the community, as well as direct sales through retailers, in partnership with Population Services International and Save the Children.



Renata Ltd in Bangladesh experienced a relatively low demand for Pushtikona MNP through pharmacies, which is their traditional distribution channel. GAIN then engaged with BRAC to increase distribution of the MNPs leveraging BRAC’s network of trained female community workers (called Shastya Shebikas) who sell the product door-to-door. Large numbers of children in low-income households are being reached through the community sales force, which has delivered the largest part of the MNP market growth in 2013 and 2014.

In Vietnam, GAIN works with the National Institute of Nutrition to develop and produce MNPs, called Bibomix, and distribution is secured through government health workers who are acting as the sales force. The MNPs are being promoted via social marketing materials as well as radio and TV advertising, and as part of a campaign led by the Government on “Micronutrient Day”.

It is challenging to reach lower-income consumers through retail alone.

Using a mix of delivery channels can accelerate demand creation and optimize access to nutritious products for these consumers



Subsidizing the final price?

Lower-income groups are less likely to be able to afford a full priced, high-quality nutritious product. To ensure that the most vulnerable groups also have access to MNPs or fortified complementary food products, subsidies on the final product price are often made by governments and NGOs.

In Mozambique, for example, a voucher is given to mothers after the completion of home fortification counselling by Save the Children and the local health workers, or “activists”, who already had an existing program for infants and mothers at the local health centers. Another type of subsidy is being provided in Bangladesh, where GAIN pay for the Value Added Tax (VAT) of the product in the first phase of the project, which effectively incentivised initial demand creation by making it more affordable to consumers.

Besides direct product subsidization, any type of social impact investment – whether it is in the form of more affordable capital or in the form of programmatic support – is a subsidy that eventually lowers the cost of the product to the consumer. Furthermore, many private sector partners have been indirectly subsidizing fortified complementary food production through profits generated by other product lines such as maize grit for animal feed in the case of Yedent, a portfolio of over

300 pharmaceutical products for Renata, and grain for breweries in the case of PKL.

The risks with this approach, besides lack of sustainability and high costs, are that products associated with subsidized price programs will suffer in terms of brand perception and positioning in the market, or that a price increase later on will cause a substantial fall in demand. The risk of negative brand perception can be mitigated by creating unique packaging and targeted marketing campaigns for the retail and social-marketing channel, which reinforce generic behavioral change intervention messaging. The risk of losing market share as a result of price increases is much harder to mitigate, and subsidies may need to be phased out gradually over time. The impact will depend on how sensitive consumers are to price increases in individual markets. Nonetheless, subsidies need to be strategic and consider the sustainability of the intervention over time.

Panel F: Female entrepreneur in Côte d’Ivoire addresses nutrition – the case of Protein-Kissée-La

Although infant cereal porridge has been around and consumed for more than 100 years in Côte d’Ivoire, Marie Konate, a dynamic female entrepreneur in Abidjan, envisaged a convenient nutritious cereal product that would be sold at a low enough price to make it accessible to all families with young children.

20 years ago, Marie Konate sat in her kitchen in Abidjan contemplating how families could feed their young children nutritious meals quickly, easily, and – most importantly – inexpensively. Her business plan began with a black-and-white sketch of a small sachet of infant cereal. Konate started her business in the early 1990s with only USD 750, one machine, and a rented stand in her local market. Under her fervent leadership, Protein Kissée-La, also known as PKL, grew into an established local competitor to the international food giants.

GAIN invested in a tri-partite project in Côte d’Ivoire, ‘Projet de Promotion de l’Alimentation de Complètement Enrichie du Jeune Enfant’, also called PACE, with PKL and the NGO Helen Keller International. The aim of PACE was to develop a social business model, functioning with little to no government involvement. GAIN did not have any field teams in-country but relied on PKL for all value

chain activities and Helen Keller International for social marketing, as well as a contribution to the creation of an adequate regulatory environment.

PKL was an established player in the market and the Farinor brand had developed positive brand equity in the Abidjan region. The collaboration intended to build on the success of an existing brand and product, and through improvements in the product and efficiencies in the supply chain the collaboration led to increase effective coverage of low-income consumers with a high quality, adequate complementary food. This product line extension was branded Farinor-Nutribon (Nutribon).

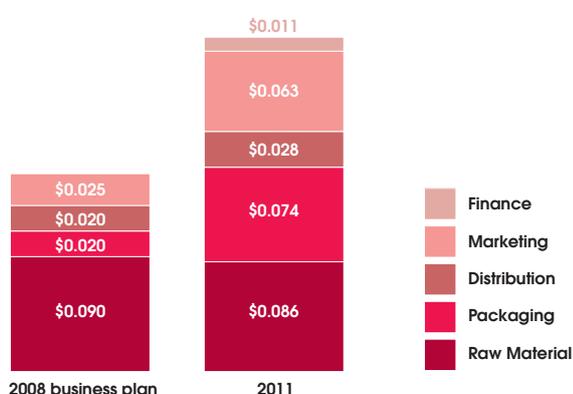
Important achievements of the project include:

- Launch in 2011 of a reformulated infant porridge according to international recommendations regarding energy density, vitamin and mineral fortification, protein quality and reduced sugar content.
- Introduction of affordable and attractive 50g sachets (2 portions) to reach low-income consumers
- Packaging and labelling that is compliant with the International Code of Marketing of Breast Milk Substitutes (WHO, 1981).
- Reaching 250,000 children to date, which is less than originally planned, but a very good result in the light of the 2011 civil war and subsequent economic crisis.
- Acceptable price positioning, albeit higher than planned due to unexpected cost increases.

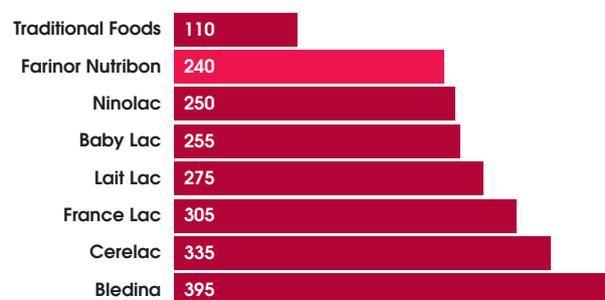
Nutritional quality and food safety come at a cost

GAIN's primary focus was on the quality of the Nutribon product. With GAIN's help PKL was able to fulfill international Codex requirements (FAO, 2013). Higher quality, redesigned packaging was also implemented to improve overall quality. At the same time, affordability to rural and lower income consumers was also a key priority, with the original 50g sachet price set at \$0.25 per unit for two servings. However, this prioritization of quality, which called for higher priced input, decreased Nutribon's

profit margins. In addition the capital expenditures have been significantly underestimated due to higher than expected cost in operating in post-civil war Côte d'Ivoire, including import, equipment, electricity and construction costs. It proved challenging to bring a high-quality product to the market that is affordable to the neediest of consumers. Nutritional quality and food safety come at a cost with pressure on margins. PKL had to increase the price of the product in order to ensure sustainability, while still remaining the cheapest fortified product on the market.



Cost Structure (per 50g sachet)



2013 Price (West African CFA franc)/50g

Cost-effective delivery to a hard-to-reach consumer base

PKL, being cash-constrained, does not have the large marketing budget of its competitors, but benefits from the awareness they build around the product category. By being the cheapest, high-quality product on the shelf in pharmacies, modern trade, and road-side kiosks, Nutribon rapidly increased sales volumes in urban Abidjan, especially for the 50g sachets. This, however, did not work in areas where product category awareness is low, as among the rural populations. PKL employed a mobile sales force on motorbikes and held roadshows with a branded van. However this type of push marketing is less effective and much slower in creating product demand than mass-media marketing.

demonstrations. These demonstrations were unbranded, in order to be aligned with the International Code on Breast Milk Substitute Marketing (WHO, 1981), and did not seem to have any impact on product awareness or uptake. Though Nutribon shows some sales growth, uptake is slow and requires more important investment in a branded product promotion campaign in order to penetrate into rural areas. In retrospect, a non-branded campaign should have been aligned with a product promotion campaign to reinforce the public health messages while driving sales of Nutribon.

Reaching out into rural areas incurs high distribution costs, high marketing and sales costs that PKL cannot afford without incurring losses. Moreover, in 2011 and 2012, the security situation in Côte d'Ivoire was poor. Through a grant to Helen Keller International, GAIN aimed to increase the awareness around fortified infant porridges, as an adequate alternative choice for complementary food, through health staff training and cooking



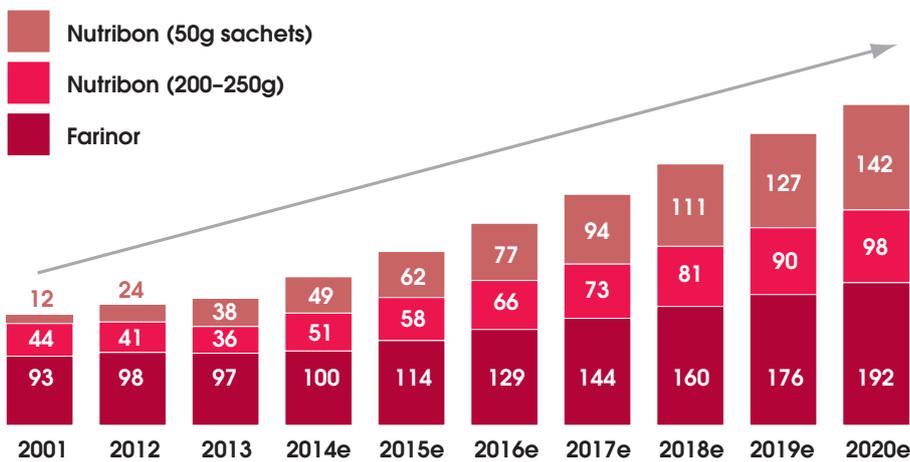
Business sustainability

The high costs of producing a high, quality, nutritious product in a developing country context mean that for a product to be affordable, profit margins have to be very low. For instance, the profit margin benchmark of the food and beverage industry is 2-3 times higher than PKL’s current profit margin. In order to reach a breakeven point (the point at which cost and income are equal and there is neither profit nor loss) by 2018, PKL will need to increase its market share from around 30% today to over 40% by 2018, or grow the total market (i.e. increase the total number of children that are consuming fortified complementary foods). GAIN and PKL have

worked hard to develop additional avenues to increase sales volumes, such as identifying and accessing institutional markets and other public delivery systems, as well as developing innovative low-cost marketing approaches. Continuous efforts are needed to ensure Nutribon’s sustainability in the long-term.

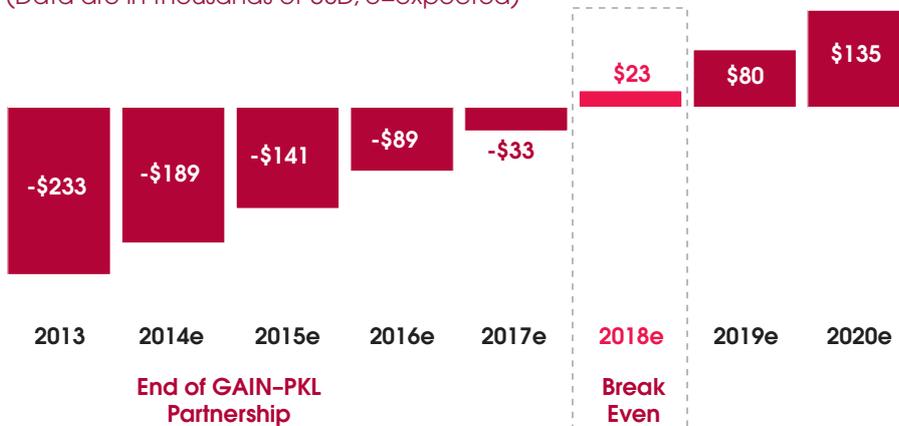
Sustainability of the business will depend on whether the overall profit made by this product line, to cover all costs, and generate sufficient cash to invest in the business growth, through more intensive marketing and distribution efforts.

Sales Volume by Product Type (data are in millions of tonnes/MT; e=expected)



PKL-Nutribon is expected to break even in 2018

(Data are in thousands of USD, e=expected)



GAIN, 2015 b

<http://www.gainhealth.org/wp-content/uploads/2015/02/Entrepreneur-to-Ensure-Childrens-First-Foods-are-Fortified.pdf>

Lesson 6: Sufficient investment and innovation in demand creation and aligned behavior change interventions are a prerequisite to guarantee trial, uptake, and adequate use.

GAIN initially counted on private sector marketing expertise to drive purchasing, and did not directly invest in branded marketing. Most small local companies are, however, quite cash constrained, and will only make limited investments in marketing and promotion. An analysis of the initial business plans of GAIN's partners indicate around 9-25% of investment in this activity. Moreover, these companies do not have access to the best creative or marketing talent. The project experience showed that more investments, as well as more innovation, in demand creation would have been beneficial for the success of GAIN's projects. A new and unknown product requires a change in habit and behavior: demand creation should therefore be aligned with sufficient investments in behavior change interventions.

Demand creation and marketing

In the case of an unknown product category, for which no or few other examples exist in the market, or a new brand, strong marketing support is needed to successfully launch a product. Private sector companies typically create demand for their products through integrated approaches, surrounding the target audience with a mixture of above-the-line (targeting the mass consumer audience) and below-the-line (targeting specifically to individual consumers) branded messages. In established categories with high market leadership brands, large fast moving consumer goods players sell through shops relying on consumer pull – for example, consumers demand the products in shops, and in turn shop owners demand the products from distributors. This pull is established through large-scale multi-media campaigns (often TV, radio, bill boards, as well as market activations in the communities and markets) that help the company establish credibility and trust in the brand or the new product. Without strong brand building and continuous communications support, a product will struggle to get taken up by the shop owners, who do not want to risk stocking up on low turnover products for which there is no consumer demand and which will end up being a sunk cost for them.

Pull marketing on a regular basis, however, is extremely expensive, and unaffordable for most small local companies. Instead, they often choose to follow more of a “push model”, which pushes the product to shop owners by targeting them with intensive sales efforts and offering them higher margins rather than having the product “pulled” through the consumers. This model requires less initial investment, because the company does not invest in a mass-media marketing campaign. On the other hand, the model is much slower in creating demand and establishing the brand with consumers, and therefore the manufacturer often struggles to get the product taken into the small portfolio that shop owners have.

PKL in Côte d'Ivoire is mainly making use of push marketing, with its mobile sales force directly selling to shop-owners in the larger Abidjan region and a road show with a branded van targeting consumers on market days in densely populated neighbourhoods. To overcome hesitation of shop owners to stock Farinor-Nutribon, PKL in Côte d'Ivoire has decided to air a TV advertisement once or twice a year in order to demonstrate that Farinor-Nutribon is recognised as a credible and well-known brand.

Small players can grow their market by being more creative and flexible than larger companies. Their small size has the advantage that they are closer to the consumers, and can offer more convenience or better services to attract customers. Researchers have cited the example of Nutrizaza in Madagascar, which highlighted that mothers are willing to pay a little more for a hot-cooked porridge for their children if offered the choice of a home-delivery service (KaYser and Klarsfeld 2014). Convenience and taste were the main driving factors.

Aspirational and credible on-pack marketing

Packaging is the most direct form of marketing to consumers. Product composition, benefits and claims are being made on the pack in an effort to convince the consumer about the product's attributes. In most countries, regulatory authorities determine what is permitted regarding health and nutrition claims to ensure that no false statements are being made. The International Code on Marketing of Breast Milk Substitutes provides very good guidelines on marketing and labelling of breastmilk substitutes but less so for marketing of complementary foods. GAIN has worked closely with producers to ensure appropriate interpretation of the Code (Panel D).

Consumers can also be “pulled” in and trust can be created in a product through the endorsement of a credible authority. There are many examples of logos that certify the nutritious quality of products and make the nutrition benefits more visible to the consumer. In South Africa, GAIN collaborated with nutrition stakeholders to create a nutrition logo, called “Nutrimark”. GAIN worked with the South African Millers Association in order to fortify infant maize meal and develop the logo for maize meals that satisfy certain conditions with regards to product formulation and Code compliance. Ultimately the idea is that all types of fortified complementary foods and multi-nutrient supplements (such as fortified peanut butter spreads and infant cereals porridges) will carry this logo, providing an incentive for millers and producers to adhere to a higher quality standard.

Behavior change communication

Compared with other typical fast moving consumer goods such as health and hygiene products, selling nutritious foods such as fortified complementary foods or MNPs is much more complex because the benefits of good nutrition are difficult to demonstrate in the short-term. This is something that is very difficult to achieve purely through pull marketing in media campaigns and is much more effective and credible if delivered or endorsed by a neutral individual or organisation. In the case of Renata, a pharmaceutical company in Bangladesh, their Pushtikona MNPs are being sold via pharmacies and direct to consumers through community health workers that work for BRAC. In both cases the personnel (pharmacists and community health workers) are being educated about the health benefits of the product so they can recommend them to their clients. Health workers (doctors, nurses, midwives) are credible sources of information for the population, and therefore perceived as an effective channel for push marketing by pharmaceutical companies for selling medical treatments.



This insight has led GAIN to support unbranded awareness raising or behavior change campaigns, that focus on the delivery of nutrition behavior change messages through NGO partners (for example, Helen Keller International, Program for Appropriate Technology in Health (PATH), Population Services International). Rather than delivering the nutrition messages with an explicit link to branded products, the messages are generic and include for instance the option of using fortified complementary foods or MNPs in addition to dietary diversity messages promoting the use of local nutritious complementary foods. GAIN found, however, that this approach is less effective from a demand creation point of view, because it does not make an explicit link with the branded products in the market, and the product-related message gets diluted in the multitude of messages. Also, GAIN found in Bangladesh and Indonesia that the complexity of the messages often confuses the recipient (mother) – leading to inadequate understanding of dosage and/or use. Despite this, however, these campaigns can still potentially be effective in changing overall infant feeding behavior, but so far no evidence has been collected to determine the relationship between the behavior change campaigns and the uptake of nutritious foods through the markets.

Behavior change communication is not only important to drive uptake or sales, but also to drive appropriate use of the product and to ensure optimal impact on nutritional status. In Vietnam, GAIN is therefore using rewards (small gifts such as feeding bowls and bibs) to drive repeat purchase and use and in Bangladesh we provide calendars as reminders to encourage mothers to give the MNPs with adequate frequency to their child.



Based on GAIN’s lessons learned in behavior change, innovations in behavior change communication are currently being developed and tested in Indonesia and South Africa using mobile phone platforms, mass media, and social media. More detail regarding this issue can be found in the GAIN IYCN Series Paper 2 (Van Liere and Poonawala, 2015).

4. MEASURING THE SUCCESS OF A MARKET-BASED MODEL TO IMPROVE NUTRITION

The success of any intervention is ultimately measured by its impact. Social business models should assess success in 3 realms:

- 1) in the extent to which they are available and accessible to low-income and vulnerable households,
- 2) in the extent to which the targeted individuals within those households (i.e., infants and young children 6 to 24 months of age) consume the products according to recommendations, ultimately leading to nutrition and/or health impacts, and
- 3) the business model must be viable and sustainable, leading to a positive profit-loss balance that includes an acceptable profit margin, as well as sufficient market volume, in order to keep the private-sector partner engaged in the entrepreneurial venture.

Typically, for the producers of foods and supplements the ultimate measures for success lie in profit, sales volumes, and market share. For GAIN, however, our main interest in working with the private sector is to demonstrate how social impact investment can be effective in improving nutrition. The main questions that need to be answered, therefore, are: “Is the product being purchased by the more vulnerable lower-income households as expected?”, and “Is the product being consumed or utilised in the appropriate way – both frequency and quantity – that will lead to an improved nutritional status of the target individual”?

Intermediate outcomes, which are important in the pathway to impact on nutritional status, such as coverage (sales and uptake) have been monitored for all projects, whereas adequate utilisation (depending on frequency and quantity of consumption) and coverage of the target (low-income) group, has been estimated in some of GAINs projects.

Measuring change in purchase and utilization of products is challenging but even more complex is attributing any change to the social impact model. Even if measurement and attribution challenges are overcome, for most projects product availability and uptake is as of yet too limited to be able to measure impact of GAIN’s IYCN portfolio on the ultimate growth and nutrition indicators at population level. For the two

largest IYCN projects that are currently being implemented in Bangladesh and Indonesia, until 2018 and 2017 respectively, impact evaluation studies are currently being designed.

Coverage and consumption

As a measure of availability and accessibility, GAIN collects data from their partners on total sales or distribution volume, which leads to an estimated number of children reached, for all of its projects on an annual basis. By the end of 2014, six years after the inception of the first projects in 2008, cumulative coverage of the entire IYCN portfolio was 19 million beneficiaries. By the end of 2015, cumulative coverage is expected to be close to 25 million beneficiaries. Figure 9 highlights the global coverage of the IYCN portfolio. To identify who these consumers are, and whether they are part of the lower-income target group, GAIN has carried out population-based surveys in the last quarter of 2014 in Côte d’Ivoire, India, and Bangladesh. GAIN used the survey methodology known as the Fortification Assessment Coverage Tool (FACT) that allows for relatively rapid measurement of coverage (defined as any purchase/receipt of the product by the household in a defined time period, in this case 7 days) as well as enabling the measurement of product utilisation and consumption by the targeted individuals within the

Cumulative reach, Million

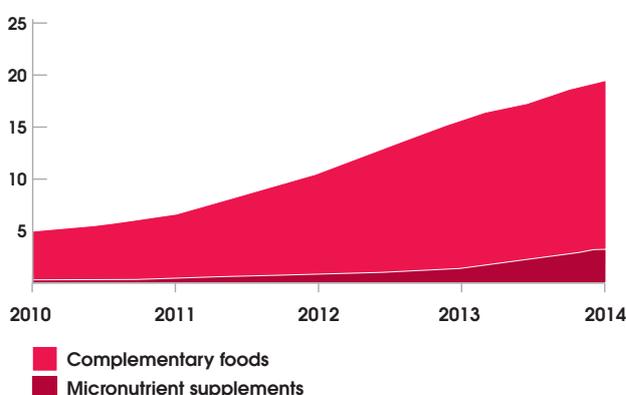


Figure 9: Global coverage of IYCN portfolio, mainly driven by the India projects

household (i.e., children 6 to 23 months of age) in order to estimate the potential for impact on nutritional status. The tool was originally designed by GAIN to assess effective coverage of food fortification programs and has been adapted for use in the MIYCN portfolio. For instance, effective coverage of MNPs is defined as the number of children who consumed three or more sachets per week during the project timeline. This was defined to approximate adherence to the WHO guideline, when averaged over a yearly period.

Preliminary results of the Côte d'Ivoire, India, and Bangladesh surveys are presented below. For Côte d'Ivoire GAIN found that 70% of children 6 and 24 months of age in the survey in Abidjan had ever consumed fortified complementary foods. Moreover, the survey found that 85% of the caregivers had heard of PKL's products. The message coverage of PKL's products was a little higher among better-off households (88%) than low-income households (74%)¹. Among the children between ages 6 and 24 months, 38% had ever been fed with PKL's products, 9% were fed PKL's products occasionally (defined as at least once in the past month) and 5% regularly (at least once in the past week). The children from low-income households were less likely to have ever been given PKL's products than better-off households. However there was no difference in the frequency of usage between low-income and better-off households. These are preliminary results, final survey results will be published later in 2015 (GAIN preliminary data). Awareness and trial of the fortified complementary food produced by PKL is high. Based on their sales data, PKL has been able to increase its share of the total market (% of target population using this product category) from 25% in 2010 to 30% in 2014, despite strong competition of several multinational companies. More emphasis will need to be put in the future on driving regular and compliant utilization, which currently is still too low for a public health impact.

In Andhra Pradesh, India, GAIN partnered with a government-owned factory (AP Foods) to improve the nutritional quality of take-home rations (Panel B). Preliminary results of a survey provide insights on the coverage of the Integrated Child Development Services (ICDS) and the fortified take-home rations produced by AP Foods and distributed to children between 6 and 36 months. All the caregivers have heard of the ICDS system before, nearly all (98%) have ever been to an ICDS center, and 91% regularly go to an ICDS center (i.e. at least once in the past month). The fortified take-home ration for the children between 6 and 36 months was known by almost all caregivers (94%), was already been given to 87% of the children in the target age range, and 75% of the caregivers received the product for the child the past month. The product was actually consumed regularly (defined as everyday) by 57% of the target children (GAIN preliminary data), which is ten-fold higher than the national average that is 5.6% (IIPS, 2007). The final analysis and publication of these results is expected

for late 2015. GAIN worked exclusively on the supply side of the product to the ICDS centres, and did not directly work on distribution towards the end consumers. It is therefore not possible to attribute the high regular consumption of the fortified supplementary foods to the GAIN project. Nevertheless, based on earlier results in Gujarat there is some indication that improved product quality and improved consumer packaging positively influence uptake by consumers. Moreover, AP Foods has been able to expand its production capacity in order to supply from 2/3 to 100% of the ICDS centers in the State with this high quality product, and they have introduced a mobile-based supply monitoring tool. These results reiterate the high potential of this delivery platform to improve IYCF practices, reflected in the high percentages of awareness and access to the products.



The Bangladesh IYCN program is in the second phase of programming. During the first phase, an evaluation led by the International Food Policy Research Institute (IFPRI) among children 6-23 months showed a prevalence of anemia above 70% at baseline (Rawat, 2014) and end line time points (IFPRI preliminary results), with MNP coverage less than 3%, as defined by > 2 sachets per week. Similarly, a baseline coverage survey conducted by the International Center for Diarrheal Disease Research, Bangladesh (icddr,b) in 10 districts that are part of phase II of the program found an overall prevalence of anemia above 60% among children 6-59 months (icddr,b, preliminary results), with a comparable anemia prevalence to the IFPRI survey in the subset of younger children. Program coverage of MNPs was comparable across both evaluations, indicating the low penetration and uptake of MNPs. The phase II program activities are geared toward increasing the awareness and usage about MNPs, with increased investments in behavior change interventions.

¹ The low-income versus better-off household categorisation used in this survey has been derived from the multi-dimensional poverty index (MPI) developed by Oxford Poverty & Human Development Initiative and UNDP. This overlaps respectively with the two lowest income quintiles (D&E) versus the three highest quintiles (A, B, C).

Though we lack impact evaluation designs that permit attribution of the results to the program activities in Cote d'Ivoire and Andhra Pradesh, the preliminary data of the FACT surveys indicate a positive trend that is not easily explained by non-program factors. Overall, one can conclude that successes have been obtained in increasing availability, awareness and trial of products amongst the target populations. Progress on regular and compliant utilization is much slower and requires further investments and efforts by multiple partners to coordinate and intensify their behavior change interventions, including products as part of the solution, and ensuring that messages are aligned, focused, do-able and compelling.



Viability and profitable business models

Adequate use of a product by consumers is key to achieving the desired impact. However, equally important is that these new products are available on shelves in the long-term. The only way this can be achieved is by ensuring that the business model is sustainable. This Paper has described the different aspects of the cost structure of nutritious products, demonstrating that profit or sustainability margins in this product category are low. In traditional business models, price flexibility is critical to maintain sustainability as it allows for adjustment of the profit or sustainability margin in response to external influences. This is not an option, however, in social business models due to the importance of affordability for low-income consumers or the set purchase prices by government and other public-sector institutions.

Despite the grants and other investments made by GAIN, profit margins for most of our production partners is much lower (up to 8 times lower) than the industry benchmark, which may be as high as 30% to 40% depending on the product category. To recover any investments made, and in order to break even before starting to see a positive profit-and-loss balance, will take much longer with such a low profit margin. Therefore, rapid growth of sales volumes is of key importance for the viability of a social business model. For example, in order to break even by 2018, PKL will need to increase its market share from around 30% in 2014 to 40% by 2018. Increase in sales volumes for businesses means their break-even period is shorter and their margins start to contribute to the company's profits (or growth) sooner, therefore solidifying the products availability in the long run (Panel D).

As described, retail market for low-income consumers grows only very slowly and requires considerable investments in marketing and distribution strengthening, which will put the profit margin under even more pressure. One way to quickly grow volume sales is by gaining access to the institutional markets. Supplying bulk quantities of MNPs or fortified complementary foods to an institutional buyer, without additional investments in marketing or distribution, is a very efficient way to grow the market, and will largely increase the sustainability and viability of the business. GAIN's investment in MNPs in Bangladesh, for example, resulted in approximately 22 million sachets sold between July 2013 and June 2014 of which 82% were sold through the BRAC door-to-door community sales and only 18% were sold through the Renata pharmacy network.

5. CONCLUSIONS AND WAYS FORWARD

The initial focus of the GAIN IYCN program to innovative market-based approaches to increase access and availability of affordable products, has allowed GAIN to do pioneering work in an area of nutrition that lacked any evidence or benchmark. This novel focus has been combined in all projects with other essential nutrition interventions, notably the promotion of exclusive and continued breastfeeding, dietary diversity, and hand washing with soap. In all projects, GAIN has worked with a myriad of partners including nutrition researchers, government officials, civil society organisations, as well as local entrepreneurs driven by a social mission to improving nutrition. The past years have brought valuable insights, but many questions remain unanswered. Progress on availability and accessibility of nutritious products or supplements, through commercial and hybrid delivery channels has been made. Market penetration and regular consumption of the products is as yet, however, insufficient to be able to establish impact on improved nutritional status of the target population.

GAIN's experience shows that markets cannot be fixed within a short time-frame. It takes longer than a 5-yr project cycle to identify partners, agree on project proposals, develop and test products, get them registered and launched in the market, create demand, and achieve regular uptake. GAIN also found that a social business model – combining delivery of nutrition interventions, including products, through multiple channels – is more effective than distribution via a commercial channel alone. Most projects launched the distribution of fortified complementary foods or MNPs and achieved some level of uptake, but some of them have achieved their ambitious initial goals in terms of scale up of product sales and reach of consumers. Much higher investments in demand creation and behavior change will be necessary to achieve this. However, when comparing product sales with an industry-benchmark of 6-8 years of market success, virtually all projects are on target.

Beyond investments in the development and production of high-quality nutritious foods, GAIN has learned that investment in marketing and branding is key for success in scaling up the use of nutritious foods, and that local producers have insufficient resources to do this on their own. Public-health partners should be prepared to collaborate with the private sector to co-create innovative and aspirational ways to create demand.



Commercial distribution channels (including wholesalers and retailers) are often weak and underdeveloped in most resource-poor countries, restricting the potential reach of products. Closer collaboration will be needed in the future to develop effective local distribution channels.

From our work with social impact investors such as the International Finance Corporation and the Acumen Fund, GAIN has learned how to be more targeted in deploying grants to companies interested in being active in this field, and leveraging these for additional social investments. To increase sustainability and scalability even further, we will strengthen our engagement with private capital providers. These will include impact investors, who make investments into companies, organizations, and funds with the intention to generate social and environmental impact alongside a financial return, as well as organisations using results-based financing mechanisms,² advanced market commitments,³ and other investment instruments to facilitate local producers' access to capital. By leveraging grant funding to attract private capital we create more investable opportunities for private capital investors which broadens impact and the sustainability of our interventions.

² Defined as any programme whereby financial or other incentives are set in order for an agent to deliver predefined outputs or outcomes and the agent is rewarded for the achievement of results upon verification (Musgrove, 2010)

³ An advance market commitment is a binding contract, typically offered by a financial entity, used to guarantee a viable market if a product is successfully developed.



Though the established multinational food and beverage companies have not yet shown a lot of interest in fortified complementary foods or MNPs for households at the base of the income pyramid, this may change when they see smaller competitors establishing new brands and launching businesses. GAIN's partnerships with larger players such as Indofood have made it evident that without a direct grant or investment incentive, partnerships need to operate within the constraints of their market environment. In future projects, GAIN aims to focus more on establishing a competitive market space and level-playing field, instead of collaborating with one single producer.

GAIN has also found that being a pioneer carries a reputational risk for the organization itself when products and market-based approaches to nutrition are neither mainstream nor commonly accepted. Over the past few years, GAIN has been perceived as being the advocate for private sector, and our programs interpreted as unsupportive of breastfeeding or dietary diversity. Insufficient communication by GAIN and insufficient information checking by others has most likely contributed to this perception. All GAIN IYCN projects place emphasis on the promotion of adequate breastfeeding practices, with this work sometimes carried out by one of our NGO partners. GAIN has been cautious to embed a product and market-based approach in a broader set of nutrition interventions, recognizing that new products will never be the only solution and recognizing the need to ensure that all product formulations and promotion complies with the 2013 Codex Alimentarius and the International Code for Marketing of Breast Milk Substitutes.

GAIN has also been cautious to ensure that any product and market-based approach is embedded in a broader set of nutrition interventions, recognising that fortified complementary foods or micronutrient powders can only be part of the solution. Where we work with private sector partners, we aim to take a "full market" approach to improve access to an entire nutritious product category, simultaneously offering support to multiple companies, strengthening a wide range of public and private sector delivery channels, and strengthening demand creation for trial, uptake, and use. GAIN will also place renewed focus on driving investments and innovations in effective demand creation and behavior change for trial, uptake, compliance, and adequate utilization with the aim of ensuring maximum impact of any intervention. Social change and advocacy to create an enabling regulatory environment will remain an important part of that work.

Close collaboration between governments and NGO nutrition partners remains crucial to ensuring political commitment and the buy-in that is needed on the ground. In the future, GAIN will continue broadening its partnerships to include new collaborations with the financial sector, with distributors and retailers, social media and new and traditional communication technology providers, as well as community-based women groups, workplace-based programs, and farmer associations.

The nutrition sector as a whole is at the start of a journey. Increasingly, bilateral donors and foundations will develop a greater interest in the potential sustainability of market-based approach. Aid and trade go hand in hand in a number of leading donor countries, but the operationalization of this new development approach is yet to be determined. Making markets work for the poor will take more time, require the involvement of more actors and greater investment, before achieving measurable nutrition impact. In the near future, with rapid urbanisation, most consumers – including the low-income consumers – will source their food through the market and therefore radical change across the entire food system will be required.

Based on experience and evidence from over 23 projects in 17 countries, GAIN concludes that nutritious products being delivered through a social or commercial business model can and should be part of a sustainable comprehensive nutrition approach for infant and young child nutrition. The Sustainable Development Goals (SDGs) which will be adopted in September 2015 emphasise more sustainable approaches via multi-stakeholder collaboration which can harness the efforts of governments in joining forces with communities, businesses, and the wider health systems to accelerate delivery. GAIN encourages partners and stakeholders to join the effort to radically improving the accessibility and affordability of quality complementary foods as a part of national level infant and young child nutrition strategies.

REFERENCES

- Alive & Thrive (2013). *Engaging the private sector to reduce stunting in Bangladesh, Ethiopia, and Viet Nam: Lessons learned from Alive & Thrive*. Washington, DC: Alive & Thrive, July 2013
<http://aliveandthrive.org/wp-content/uploads/2014/12/Private-sector-experience-and-lessons-July-2013.pdf>
- Bhutta ZA, Das JK, Rizvi A, Gaff MF, Walker N, Horton S, Webb P, Lartey A, Black RE, The Lancet Nutrition Interventions Review Group, and the Maternal and Child Nutrition Study Group (2013). *Evidence-based interventions for improvement of maternal and child nutrition: what can be done and at what cost? Lancet 2013; 380: 452-477.*
- FAO. (1991) *Codex Alimentarius Guidelines on Formulated Supplementary Foods for Older Infants and Young Children*. FAO, Rome. Adopted in 1991; Revised in 2013.
https://www.google.com/url?q=http://www.codexalimentarius.org/input/download/standards/298/CXG_008e.pdf&sa=U&ei=U8DUVLCMG7fCsASviYEo&ved=0CAUQFJAA&client=internal-uds-cse&usq=AFQjCNGd7QGCoIF5AtThoP5z2S3I3BOdjw
- GAIN (2011). *Nutritional Guidelines for Complementary Foods and Complementary Food Supplements*. GAIN: Geneva, 2011.
- GAIN (2012). *GAIN's Infant and Young Child Nutrition Program: Mid-term review of lessons learnt, Internal report*. January 2012.
- GAIN (2015) a. *Case Study: Empowering Women Entrepreneurs to Produce Fortified Food for Mothers and Children in Rajasthan*, Geneva: GAIN 2015
<http://www.gainhealth.org/wp-content/uploads/2015/02/Empowering-Women-Entrepreneurs-to-Produce-Fortified-Food-for-Mothers-and-Children-Rajasthan.pdf>
- GAIN (2015) b. *Case Study: Investing in a Côte d'Ivoire Entrepreneur to Ensure Children's First Foods are Fortified*, GAIN: Geneva, 2015
<http://www.gainhealth.org/wp-content/uploads/2015/02/Entrepreneur-to-Ensure-Childrens-First-Foods-are-Fortified.pdf>
- GAIN (2015) c. *Case Study: Better Business Practices Boost Indian Government Efforts to Provide Nutritious Foods to Young Families*, GAIN: Geneva, 2015
<http://www.gainhealth.org/wp-content/uploads/2015/02/Andhra-Pradesh-Case-Study-Better-Business-Practices-Boost-Indian-Government-Efforts-to-Provide-Nutritious-Food-to-Young-Families.pdf>
- International Institute for Population Sciences (IIPS) and Macro International (2007). *National Family Health Survey (NFHS-3), 2005-06: India: Volume I*. Mumbai: IIPS.
- Kayser O, Klarsfeld L, Brossard S (2014). *Marketing Nutrition for the Base of the Pyramid. Introducing successful practices for improved access to nutritious complementary foods: Key lessons from case studies*. Hystra Hybrid Strategy Consulting: Paris, 2014.
- 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 Nutr Bull 2009; 30(2 Suppl):S239-55.
- Musgrove, P (2010): *Rewards for good performance or results: a short glossary*; online:
<http://www.rbfhealth.org>, Washington, DC: World Bank.
- Osendarp SJM, Bahirathan L, Klassen E, Van Liere MJ, Neufeld MN (2015), *Using local foods to meet nutrient requirements of 6-23 month old infants in developing countries: a review of the evidence*. 2015 (submitted).
- Pelto G, Armar-Klemesu M (2011). *Balancing nurturance, cost and time: Complementary feeding in Accra, Ghana*. Blackwell Publishing Ltd, maternal and Child Nutrition (2011), 7 (Suppl. 3), page 66-81.
- Quinn V, Zehner E, Schofield D, Guyon A, Huffmann S (2010). *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. GAIN: Geneva, 2010. (Published as part of the GAIN Working Papers Series, 2010 and available on HKI and GAIN websites).
- Rangan K, Chu M, Djordjija P (2011). *Segmenting the Base of the Pyramid*. Harvard Business Review 89, no. 6, June 2011.
- Siekman J, Schofield D (2015). *The Enabling Environment*, Geneva, Global Alliance for Improvement Nutrition, 2015 (in press).
- Simanis E, Duke D. (2014). *Profits at the Bottom of the Pyramid*. Harvard Business Review, October 2014; 86-93.
- Van Liere MJ, Poonawala A (2015). *Behaviour Change and Demand Creation*. Geneva; Global Alliance for Improvement Nutrition; Geneva, 2015.
- World Health Organisation (1981). *International Code for Marketing of Breast Milk Substitutes*. Geneva: WHO, 1981.
http://www.who.int/nutrition/publications/code_english.pdf
- World Health Organization (2003). *Global Strategy for Infant and Young Child Feeding*. Geneva; WHO, 2003.

GLOSSARY

AP	Andhra Pradesh
BCG	Boston Consulting Group
BoP	Base of the Pyramid
CIFF	Children’s Investment Fund Foundation
DFID	UK Department for International Development
DGIS	Netherland’s Directorate-General for International Cooperation
FACT	Fortification Assessment Coverage Tool
FAO	Food and Agriculture Organization
GAIN	Global Alliance for Improved Nutrition
GPF	GAIN Premix Facility
HACCP	Hazard Analysis and Critical Control Points
HF-TAG	Home Fortification Technical Advisory Group
ICDS	Integrated Child Development Services
ICDDR,B	International Center for Diarrheal Disease Research, Bangladesh
IFC	International Finance Corporation
IFPRI	International Food Policy Research Institute
Irish Aid	Ireland’s Department for Foreign Aid and Trade
IYCN	Infant and Young Child Nutrition
KBZF	Khalifa Bin Zayed Al Nahyan Foundation
LGT VP	LGT Venture Philanthropy
MFK	Meds and Food for Kids
MIYCN	Maternal, Infant and Young Child Nutrition
MIYCN WG	Maternal, Infant and Young Child Nutrition Working Group
MNP	Micronutrient Powder
MPI	Multi-dimensional Poverty Index
NGO	Non-Governmental Organization
NIN	National Institute of Nutrition, Vietnam
PACE	Promotion de l’Alimentation de Complément Enrichie du Jeune Enfant
PATH	Program for Appropriate Technology in Health
PKL	Protein Kissée-La
QA/QC	Quality Assurance & Quality Control
SDG	Sustainable Development Goals
UC Davies	University of California Davies
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
VAT	Value Added Taxes
WHO	World Health Organization