

Business and International Development

Business as a Partner in Tackling Micronutrient Deficiency: Lessons in Multisector Partnership



Tamara Bekefi

Research Fellow, Corporate Social Responsibility Initiative
Manager, Business and International Development Research
John F. Kennedy School of Government, Harvard University

A Report of the:

Corporate Social Responsibility Initiative

A Cooperative Project among:

The Mossavar-Rahmani Center for Business and Government

The Center for Public Leadership

The Hauser Center for Non-Profit Organizations

The Joan Shorenstein Center on the Press, Politics and Public Policy

Foreword

Some of the fastest growing markets of the future are found in developing countries. These markets hold both opportunities and risks for corporations. Whereas some of these risks are directly related to core business activities, others are posed by the complex social, political, health, and security context in which business is done. Companies, the public sector, and civil society are confronting the challenge of building public capacity to generate a stable business climate and encourage development. Increasingly, these three sectors are working together to address critical social and environmental issues in emerging markets.

The Corporate Social Responsibility Initiative's *Business and International Development* program at Harvard University's John F. Kennedy School of Government undertakes research and convenes meetings to examine the private sector's role in multi-sectoral partnerships and these partnerships' effectiveness in achieving international development goals. Research areas include:

- **Health:** road safety, nutrition, building public sector capacity around HIV/AIDS
- **Local economic development, business linkages, and building competitiveness:** small and medium enterprise development intermediaries, local economic multipliers, economic development

The following report, the second in a series on business and international development, focuses on micronutrient deficiency and the Global Alliance for Improved Nutrition (GAIN), examining the relevance of micronutrient deficiency to economic growth in a developing country context. In particular it examines some of the challenges of, and solutions to, “hidden hunger” – a phenomenon that occurs when people consume foods that are filling but lack critical vitamins and minerals. It considers why this issue is important to business and, in turn, what the private sector is doing and could do to address the tremendous burden of vitamin and mineral deficiencies in the developing world. The report goes on to look at the Global Alliance for Improved Nutrition, its structure, function, and activities, and plans to further partner with corporations and multilateral agencies. It addresses the question of whether a multi-sectoral partnership is a useful framework for addressing micronutrient deficiencies and what some of the challenges and lessons have been thus far. Finally, key policy recommendations are provided, as are questions for students and for further research. A bibliography is appended for teaching and research purposes.

John Ruggie



Faculty Chair, Corporate Social Responsibility Initiative
Weil Director, Mossavar-Rahmani Center for Business and Government
Kirkpatrick Professor of International Affairs

Jane Nelson



Director, Corporate Social Responsibility Initiative
Senior Fellow, Mossavar-Rahmani Center for Business and Government
Director, International Business Leaders Forum

Table of Contents

I.	MICRONUTRIENT DEFICIENCY: A NEGLECTED DEVELOPMENT CHALLENGE	5
	The Copenhagen Consensus	6
	The Millennium Project	7
II.	A WORLD WITH GOOD NUTRITION	8
III.	CHALLENGES TO FOOD FORTIFICATION	10
IV.	THE NEED FOR A COMPREHENSIVE APPROACH	12
	Multi-Stakeholder Engagement	13
V.	A PRIVATE-SECTOR CONCERN	14
	A Case for Engaging	14
	Mechanisms for Private-Sector Engagement	14
	Examples of Private-Sector Interventions	17
	The Need for Partnership	27
VI.	THE GLOBAL ALLIANCE FOR IMPROVED NUTRITION (GAIN)	29
	Creation	29
	Aims, Objectives, and Strategy	30
	Governance	30
	Operations	32
	Evaluation	33
	Working with the Private Sector	34
	Striving for Mutual Benefit	38
	GAIN Challenges	39
VII.	CONCLUSION	41
VIII.	RECOMMENDATIONS FOR POLICY MAKERS AND BUSINESS ENGAGEMENT	42
IX.	KEY QUESTIONS	43
X.	TEN KEY LESSONS ON PARTNERSHIP	44
	BIBLIOGRAPHY	45
	APPENDIX	50

Table of Figures

Figure 1: Copenhagen Consensus Findings	7
Figure 2: Common Vitamin and Mineral Deficiencies and Their Potential Impacts	8
Figure 3: Investing in Nutrition Is Critical to Achieving the MDGs	9
Figure 4: Reasons for Weak Commitment to Nutrition Programs	12
Figure 5: Solutions to Micronutrient Deficiency	15
Figure 6: Potential Private-Sector Interventions into Micronutrient Deficiency	16
Figure 7: P&G's Micronutrient Delivery Structure	22
Figure 8: Creating an Enabling Environment for Fortification: Suggestions for Government	28
Figure 9: GAIN Alliance Structure	29
Figure 10: GAIN's Organizational Structure	31
Figure 11: GAIN's Program Framework	33

I Micronutrient Deficiency: A Neglected Development Challenge

Approximately 18 million babies are born mentally impaired annually due to iodine deficiency, while mental development of 40%–60% of infants between six and 24 months is impaired due to iron deficiency.

Sustainable and equitable international development is predicated on individuals who are able to live long, healthy lives, be innovative, work, and contribute to society. These basic human traits are contingent on proper nutrition, particularly during childhood, to foster normal growth and healthy development. Micronutrient deficiency – the lack of proper vitamins and minerals in diet – is a hidden epidemic that leads to low birth weight, impaired cognitive development, impaired immunity, and compromised life expectancy. These problems have a disastrous effect on human capital, which is a key to improving both individual lives and to fostering the growth of national economies.¹

Low birth weight and stunted growth can result in diminished strength and ability to work, potentially resulting in lower productivity and income. Impaired cognitive development leads to learning problems, and the inability of children to learn in school has a significant effect on their wages 20 years after schooling.² These deficiencies in turn have links to broader economic growth and development. “Because education level . . . is strongly linked to national economic growth, the loss of individual creative potential directly affects the long-term aggregate development trajectory of developing countries.”³ Micronutrient deficiency in childhood also has long-term impacts on individuals’ ability to fight disease, which has serious consequences for family life, earning capacity, and macroeconomic growth.

According to the Asian Development Bank (ADB), “three billion people are prevented from achieving their full potential as students, parents, workers, and citizens due to micronutrient deficiencies.”⁴ Of five countries that it analyzed, ADB projected that the 10-year productivity loss due to iron deficiency alone was over US\$25 billion.⁵ Micronutrient deficiency has been called the “most widespread and devastating nutritional deficiency on earth,”⁶ though it is a problem that has been largely eradicated in the developed world through food fortification. The United Nations Children’s Fund (UNICEF) and the Micronutrient Initiative estimate that the impact in the developing world, home to 80 percent of the world’s population, is staggering. In a review of 80 countries, these organizations found that⁷

- Intellectual capacity in almost all of the countries reviewed was lowered by approximately 10% to 15% due to iodine deficiency;
- Mental development of 40% to 60% of infants between 6 and 24 months was impaired due to iron deficiency;

1. Montague W. Demment, et al. “Providing Micronutrients through Food-Based Solutions: A Key to Human and National Development.” *Journal of Nutrition*. 133 (November 2003): 3879S.

2. *Ibid.*, 3882S.

3. *Ibid.*, 3882S.

4. Asian Development Bank. *Food Fortification in Asia: Improving Health and Building Economies*. ADB Nutrition and Development Series No. 7 (Manila, Philippines: Asian Development Bank, 2004), 1. <<http://www.adb.org/Documents/Books/nutrition/Food-Fortification-Asia/default.asp>> Accessed May 24, 2006.

5. *Ibid.*, 2.

6. *Ibid.*, 1.

7. UNICEF. *Vitamin & Mineral Deficiency: A Global Progress Report* (New York: UNICEF, 2004), 3. <<http://www.unicef.org/media/files/vmd.pdf#search='Vitamin%20and%20mineral%20deficiency%3A%20A%20Global%20Progress%20Report'>> Accessed May 24, 2006.

There is a staggering \$180 billion global cost burden of micronutrient deficiency, and it is estimated that \$6 billion is lost annually in adult work performance due to the outcomes of micronutrient deficiency.

- Compromised immune systems due to vitamin A deficiency was affecting 40% of the world's "under-fives" and was leading to the deaths of approximately 1 million children each year;
- Approximately 18 million babies are born mentally impaired annually owing to iodine deficiency;
- Approximately 200,000 severe birth defects and 1 in 10 heart disease deaths in adults annually are a result of folate deficiency;
- 60,000 young women die each year during pregnancy and childbirth as a result of severe iron deficiency anemia;
- Approximately 2% of annual GDP is lost (in the most affected countries) because of lowered energy due to iron deficiency.

Additionally, blindness caused by vitamin A deficiency impacts an estimated 250,000 to 500,000 children annually, according to the World Health Organization,⁸ half of whom die within 12 months of losing their sight. A large percentage of the population in the developing countries is functioning at suboptimal levels as a result of this problem.

According to the World Bank, "Vitamin and mineral deficiencies impose high economic costs on virtually every developing nation."⁹ There is a staggering \$180 billion global cost burden of micronutrient deficiency, and it is estimated that \$6 billion¹⁰ is lost annually in adult work performance due to the outcomes of micronutrient deficiency. Lack of nutrients and the subsequent impact on fine motor skills can also have a long-term impact on workforce sustainability in industries that need these types of skills.

In short, micronutrient deficiency severely undermines the quality of peoples' lives and creates a major drag on national development prospects. Yet, it does not have to be like this. Research by various UN bodies, the World Bank, universities, and independent foundations all point to the clear message that overcoming such micronutrient deficiency is not only technically feasible, but also affordable.

Recent analyses during 2004 and 2005 include

- The Copenhagen Consensus
- The Millennium Project's task force on hunger.

The Copenhagen Consensus

In May 2004, a panel of distinguished economists,¹¹ including three Nobel Prize winners, convened in Copenhagen to answer a hypothetical question that could help to set priorities for addressing global poverty: "What would be the best ways of advancing global welfare, and particularly the welfare of developing countries, supposing that an additional \$50 billion of resources were at governments'

8. World Health Organization.
<<http://www.who.int/vaccines/en/vitamina.shtml>> Accessed June 30, 2005.

9. UNICEF, 3.

10. Global Alliance for Improved Nutrition.
Challenge.
<http://www.gainhealth.org/gain/ch/en-en/index.cfm?page=/gain/home/why_food_fortification/challenge> Accessed May 24, 2005.

11. Copenhagen Consensus economists:
Robert Fogel*, University of Chicago;
Douglass North*, Washington University;
Vernon Smith*, George Mason University;
Jagdish Bhagwati, Columbia University;
Bruno Frey, University of Zurich; Justin Yifu Lin, Beijing University; Thomas Schelling, University of Maryland; and Nancy Stokey, University of Chicago.

*Nobel Laureate

disposal?” Using methodologies based on welfare economics, the group sought to establish a “rational prioritization” of issues to improve lives in developing countries given limited resources and abundant challenges. They focused attention on nutrition, determining that after controlling HIV/AIDS, providing micronutrients was the best economic benefit-to-cost ratio to effect massive change in the developing world. Figure 1 illustrates the findings of the Copenhagen Consensus.

FIGURE 1 COPENHAGEN CONSENSUS FINDINGS¹²

PROJECT RATING	CHALLENGE	OPPORTUNITY
Very good	1 Diseases	Control of HIV/AIDs
	2 Malnutrition	Providing micro nutrients
	3 Subsidies and trade	Trade liberalisation
	4 Diseases	Control of malaria
Good	5 Malnutrition	Development of new agricultural technologies
	6 Sanitation & Water	Small-scale water technology for livelihoods
	7 Sanitation & Water	Community-managed water supply and sanitation
	8 Sanitation & Water	Research on water productivity in food production
	9 Government	Lowering the cost of starting a new business
Fair	10 Migration	Lowering barriers to migration for skilled workers
	11 Malnutrition	Improving infant and child nutrition
	12 Malnutrition	Reducing the prevalence of low birth weight
	13 Diseases	Scaled-up basic health services
Bad	14 Migration	Guest worker programmes for the unskilled
	15 Climate	Optimal carbon tax
	16 Climate	The Kyoto Protocol
	17 Climate	Value-at-risk carbon tax

The Millennium Project

Convened to address the 2nd Millennium Development Goal, to “Halve between 1990 and 2015, the proportion of people who suffer from hunger,” the Millennium Project’s hunger task force has identified hunger “hotspots” to get a better sense of who is hungry and where they fall geographically. In addition, it has analyzed the principle causes of hunger in different parts of the world. Based on these findings, the Task Force is concentrating on specific interventions to increase market access and income generation, increase agricultural productivity for food-insecure farmers, restore natural assets, and improve nutrition for the vulnerable.¹³ The Task Force has also outlined policy recommendations at all levels to facilitate accomplishment of the MDG hunger goal.

12. Copenhagen Consensus Center. *The Results of Copenhagen Consensus 2004*. <<http://www.copenhagenconsensus.com/Default.aspx?ID=699>> Accessed May 24, 2006.

13. UN Millennium Project. Task Force on Hunger. *Halving Hunger: It Can Be Done* (London: Earthscan, 2005). <<http://www.unmillenniumproject.org/documents/Hunger-highres-complete.pdf>> Accessed May 25, 2006.

II A World with Good Nutrition

A world in which both children and adults were adequately nourished with vitamins and minerals could radically transform the quality of peoples' lives and national economies. Children would be better able to acquire knowledge at schooling age, leading to more productive adult lives that included the ability both to work harder and to be potentially more innovative; disease burdens could also be reduced, leading to lower health care costs for governments and longer, more productive lives for workers; and birth rates could also drop as the assumption is eliminated that high levels of childhood mortality are inevitable.

Figure 2 outlines some of the most commonly deficient vitamins and minerals in developing countries, as well as the results of such deficiencies.

FIGURE 2 COMMON VITAMIN AND MINERAL DEFICIENCIES AND THEIR POTENTIAL IMPACTS¹⁴

VITAMIN/MINERAL	IMPACT OF DEFICIENCY
Vitamin A	Preventable severe visual impairment and blindness Night blindness Maternal mortality Increased risk of severe illness and death
Iodine	Stillbirth Spontaneous abortion Cretinism Children's mental health deficiencies Mental impairment
Folate	Birth defects of the spine and/or brain Risk of stroke among adults
Iron	Anemia Ill-health Premature death

14. World Health Organization. *Micronutrients*. <<http://www.who.int/nutrition/topics/micronutrients/en/index.html>> Accessed May 25, 2006.

Addressing micronutrient deficiency contributes directly to the Millennium Development Goals (MDGs), a blueprint for development by 2015 agreed to by all of the world's countries and all the leading development institutions. Figure 3 outlines how nutrition is critical to achieving these aims.

FIGURE 3 INVESTING IN NUTRITION IS CRITICAL TO ACHIEVING THE MDGS¹⁵

GOAL	NUTRITIONAL EFFECT
Goal 1: Eradicate extreme poverty and hunger	Malnutrition erodes human capital through irreversible and intergenerational effects on cognitive and physical development.
Goal 2: Achieve universal primary education	Malnutrition affects the chances that child will go to school, stay in school, and perform well.
Goal 3: Promote gender equality and empower women	Anti-female biases in access to food, health, and care resources may result in malnutrition, possibly reducing women's access to assets. Addressing malnutrition empowers women more than men.
Goal 4: Reduce child mortality	Malnutrition is directly or indirectly associated with most child deaths. It is the main contributor to the burden of disease in the developing world.
Goal 5: Improve maternal health	Malnutrition is associated with most major risk factors for maternal mortality. Maternal stunting and iron and iodine deficiencies particularly pose serious problems.
Goal 6: Combat HIV/AIDS, malaria, and other diseases	Malnutrition may increase risk of HIV transmission, compromise antiretroviral therapy, and hasten the onset of full-blown AIDS and premature death. It increases the chances of tuberculosis infection resulting in disease, and it reduces malarial survival rates.

15. The World Bank. *Repositioning Nutrition as Central to the Development Agenda: A Strategy for Large-Scale Action* (Washington, DC: The World Bank, 2006), 15.
<<http://www.reliefweb.int/library/documents/2006/wb-global-2mar.pdf>> Accessed May 25, 2006.

III Challenges to Food Fortification

“Food fortification is the deliberate addition of an essential micronutrient – vitamins and minerals including trace elements – into a food... Probably no other technology available today offers as large an opportunity to improve lives and accelerate development at such low cost and in such a short time.”

The World Bank, *Enriching Lives: Overcoming Vitamin and Mineral Malnutrition in Developing Countries* (Washington DC: The World Bank, 1994), executive summary

Food-based micronutrient interventions offer one of the best and most cost-effective solutions to “hidden hunger.” Such interventions have had proven success in much of the developed world and yet, while the price of fortification is almost negligible and the science has been established, there remain significant challenges to making such products widely available. These include the following:

- a. **Costs and standards.** Whereas the cost of micronutrient fortification is minimal – \$85 million over 10 years to fortify all the wheat flour in 75 African, Latin American, and Asian countries¹⁶ – deciding who bears that cost can become complex. For some private-sector players in the developing world, fortification costs can be the tipping point to un-competitiveness. If one company engages in fortification while its competitors do not, the marginal increase in cost to the consumer can make the fortified product either unaffordable or uncompetitive in an elastic market. In addition, it is essential that standards be set, and enforced, by governments to ensure that the playing field is level, that the process has oversight and is rigorous, and that fortification is really occurring. In many cases law alone is insufficient because some producers simply pretend to fortify while not actually doing so, a practice that flourishes with lack of governmental oversight.
- b. **Political will.** Taking the lead on food fortification issues, and creating an enabling environment through legal statutes, enforcement, and oversight, is a task for government. When decision makers are juggling competing priorities and limited resources, micronutrient deficiency with its hidden consequences often gets marginalized.
- c. **Lack of understanding.** Governments and private-sector players that could impact micronutrient deficiency are often unaware of the immense influence that this hidden epidemic has on issues beyond public health. Considered solely a nutrition issue, it is often relegated to the public health sphere, where it competes with diseases that have taken on epidemic proportions and have more visible effects. As a result, ministers of finance, education, and the private sector that must create future work forces remain unaware of the problem and the low-cost solutions that could be implemented. In addition, consumers are often suspicious of business-led initiatives on fortification, as exemplified by instances where countries suffering from food shortages reject supplies for fear of them being genetically modified crops.
- d. **Delivery systems.** Challenges remain about the best mechanisms through which to deliver micronutrients – through modified seeds or additives in the milling process, in liquid beverages, and/or in foods. Some of these issues are science-

16. Global Alliance for Improved Nutrition and Asian Development Bank. *The Leaders of Tomorrow, Invest in Them Today* (Geneva, Switzerland and Manila, The Philippines: GAIN and ADB). <http://www.gainhealth.org/gain/ch/en-en/file.cfm/leadersoftomorrow.pdf?contentID=1186> Accessed May 25, 2006.

based or taste issues, and others are centered on hot-button matters about food modification.

- e. **Public policy and legal barriers.** Whereas civil society and the private sector can work collaboratively, only government can enact legislation to allow for fortification and enforce such laws to ensure a level playing field. According to World Bank Country Director for Bangladesh Christine Wallich, “Unless there is an enabling environment for the private sector to improve dietary quality through market-based solutions, the problem [of micronutrient deficiency] will persist.”¹⁷
- f. **Finding suitable partners.** Fortification itself is a technical issue, but distribution, education, and awareness-raising must be implemented through strong partnerships of the three sectors (government, civil society, and business). Convening partners that work effectively and efficiently together to create sustainable programs is often a challenge, as the benefits of partnering are not clear or the short-term benefits of fortifying food are not evident.
- g. **Tariffs, other duties, and food laws** preventing food fortification for traditional, cultural, or other reasons.

17. UNICEF, 29.

IV The Need For A Comprehensive Approach

To adequately address the growing problem of micronutrient deficiency, a comprehensive approach must be taken. The approach cannot be limited to the field of public health alone. Multiple stakeholders that span the public and private sectors own parts of the solution to micronutrient deficiency, so joint work is necessary. In addition, the problem has a wider-reaching impact than the public health sector's purview. In the age of pandemics such as HIV/AIDS, chronic infectious diseases such as malaria, and overtaxed health systems in developing countries, a long-term, hidden, yet critical challenge such as micronutrient deficiency is unlikely to rise on the list of priorities without the concerted action of a broad array of actors.

Figure 4 illustrates some reasons for low public sector and political commitment to nutrition programs

FIGURE 4 REASONS FOR WEAK COMMITMENT TO NUTRITION PROGRAMS¹⁸

- Malnutrition is usually invisible to malnourished families and communities.
 - Families and governments do not recognize the human and economic costs of malnutrition.
 - Governments may not know there are faster interventions for combating malnutrition than economic growth or poverty reduction or that nutrition programs are affordable.
 - Because there are multiple organizational stakeholders, nutrition can fall between the cracks.
 - There is not always a consensus about how to intervene against malnutrition.
 - Adequate nutrition is seldom treated as a human right.
 - Malnourished women and children have little voice.
 - Some politicians and managers do not care whether programs are implemented well.
 - Governments sometimes claim they are investing in improving nutrition when the programs they are financing have little effect on it.
-

18. The World Bank. *Repositioning Nutrition*, 14.

19. Michael Jarvis. Program Specialist, Business, Competitiveness, and Development, World Bank Institute. Interview with the author, March 2005.

According to Michael Jarvis of the World Bank Institute, an additional problem is that “Vitamin and mineral deficiency is an ‘orphaned’ agenda – it is everyone’s problem, and yet all too often no one’s problem when it comes to accountability and taking responsibility for results and allocating resources. A multisectoral approach is therefore vital, but often lacking, even though a range of core development goals could be addressed through comprehensive solutions – benefiting business, a range of government departments, and poor populations themselves.”¹⁹

Multi-stakeholder engagement

Historically, micronutrient deficiency and its attendant consequences have been viewed as an issue for governments – particularly those parts of government overseeing public health. While this remains true today, other sectors are becoming involved, particularly with respect to micronutrient fortification in developing countries, as a result of the rising awareness of the impact that micronutrient deficiency has on all spheres of society.

As a combined public health, economic, and education challenge, micronutrient deficiency is an issue that affects, and is affected by, a wide array of stakeholders ranging from governments to business, civil society, and the general public. These sectors work individually and collectively to accomplish the goal of ensuring that fortified staple foods are *affordable, accessible, and nutritionally adapted to local contexts*.

Governments at both the local and national level, supported by donor agencies, continue to work to improve food safety and accessibility, create policy and laws, ensure enforcement, and educate the public around nutrition issues. Members of civil society, including nongovernmental organizations and multilateral organizations, advocate for and support similar activities, while universities conduct research to provide greater precision and definition of challenges and important innovations, as well as to evaluate the success of interventions. Society at large plays a role by adopting healthy eating patterns when possible, and industry contributes individually and collectively with innovations and technical know-how to produce fortified foods, engage communities, and take part in policy dialogues.

Although a great deal of work has been done on health impacts and the role of government in addressing micronutrient deficiency, little has been done to examine the private sector's involvement in this issue.

V A Private-Sector Concern

a. A Case for Engaging

As a combined public health, economic, and education challenge, micronutrient deficiency is an issue that affects, and is affected by, a wide array of stakeholders ranging from governments to business, civil society, and the general public.

Whereas there has been a long-standing relationship between government and the food industry, currently a more proactive approach to micronutrient deficiency and collaboration among the public, private, and nonprofit sectors is being undertaken. There has been a greater focus on market forces and mechanisms as a driver for development from a government perspective in addition to involvement of NGOs, and increased engagement in such issues from the private sector as it broadens investments in developing countries. The private sector, which is inherently dependent on labor forces and consumers, is motivated to address the micronutrient issue partially because it directly correlates to ensuring a future work force and to building future markets.

If clusters of workers are not reaching their potential, there may be a corrosive impact on the businesses for which they work. Although the problem may not be immediately evident, operating with persistent underperformance and low levels of productivity is not a viable long-term business model. In addition, particularly for industries dependent on fine motor skills, the lack of a suitable work force could pose a problem when these industries expand to locations beleaguered with chronic under-nutrition.

In terms of markets, consumer purchasing power is directly correlated to earning power, which is, in turn, linked to education. If children are unable to adequately learn because of the health impacts of chronic vitamin and mineral deficiency, the potential for them to earn more as adults, and consequently spend more, is diminished. This trend has a long-term bearing on the demand for goods and the potential for growing markets in developing countries.

b. Mechanisms for Private-Sector Engagement

There are three immediate methods to address the issue and impacts of micronutrient deficiency – growing foods, fortifying them, and feeding people. These three solutions are linked directly to the agro-business industry, life science companies, and the food industry.

Growing: Bio-fortification, the process of plant breeding to develop staple food crops that are rich in micronutrients, is one means to reach populations who live on food from subsistence farming, thereby positively impacting the poorest of the poor. The Consultative Group on International Agricultural Research (CGIAR) is actively involved in and drives this work. In addition,

creating and distributing modified seeds is an issue being undertaken by agro-business.

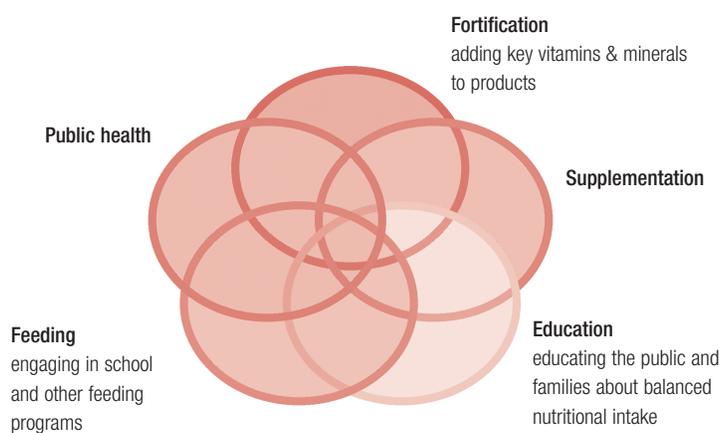
Food-based micronutrient interventions (fortifying): Adding vitamins and minerals to staple foods such as flour, oil, milk, and salt has been accomplished in the developed world, resulting in the almost complete elimination of a variety of deficiency-related diseases. In fact, food fortification is such standard practice that it is largely off the public radar screen. This method, which is both cost-effective and far-reaching, holds great potential for the developing world. Fortification is being undertaken in developing countries by flour millers and manufacturers of other foods that can be fortified, such as soy sauce, fish sauce, sugar, and beverages.

Feeding: Nutritionally balanced school feeding programs, also called food-based approaches, supported by governments and corporations, are a way to access children at a critical age in their development. A wide range of corporate actors are supporting such work. Emergency feeding by such organizations as the World Food Program has been shown to have great impact. Innovative strategies are also being developed for complementary feeding for children under the age of 5 years.

Beyond growing, fortifying, and feeding, private sector firms may become involved in the micronutrient issue by developing new fortified foods, using their supply chains to distribute either food or information, or engaging in cause-related marketing around the fortification issue.

Beyond the *growing, fortifying, feeding* model, other private-sector firms may become involved in the micronutrient issue by developing new fortified foods, using their supply chains to distribute either food or information, or engaging in cause-related marketing around the fortification issue. One solution to getting the most efficient and cost-effective outcomes is to offer a basket of options that includes fortification, supplementation, education, feeding, and public health measures. Different sectors and different firms can interface with these issues as necessary and appropriate. The Venn diagram in Figure 5 illustrates the nodes at which various sectors and companies could interface on this issue.

FIGURE 5 SOLUTIONS TO MICRONUTRIENT DEFICIENCY



In addition to the delivery issues outlined above, business is becoming involved in the critical matter of creating a positive business climate to encourage increased

involvement in fortification. Business actions include lobbying for more effective legislation, trying to create a level playing field, and enforcement of current legislation in developing countries.

Depending on the industry sector and local context, business can engage both directly and indirectly through their different spheres of influence – and in many cases is doing so – to seek solutions to the issue of micronutrient deficiency. Action can be taken individually at a variety of levels – through core business activities, community and philanthropic work, engagement with public policy issues, and institution building²⁰ – or collectively with other companies within an industry or across sectors. Currently, different types of companies are involved in getting fortified products to market. Some are suppliers of basic materials, such as vitamin and mineral manufacturers. Others include food companies and the retail sectors, which in the future are likely to have an increasingly important role even for reaching the poorest populations. Figure 6 illustrates the private sector’s potential intervention in different spheres.

20. Jane Nelson. *Business as Partners in Development: Building Wealth for Countries, Companies, and Communities* (London: Prince of Wales International Business Leaders Forum, The World Bank, and UNDP, 1996).

FIGURE 6 POTENTIAL PRIVATE-SECTOR INTERVENTIONS INTO MICRONUTRIENT DEFICIENCY

	ENABLING FRAMEWORK			ON-THE-GROUND DELIVERY		
	RULES & STANDARDS	MANAGEMENT	FUNDING	AWARENESS RAISING	TRAINING & CAPACITY BUILDING	PRODUCT DEVELOPMENT & DISTRIBUTION
CORE BUSINESS	Where relevant ensure that the company’s food production and fortification processes adhere to any national rules and/ or industry standards	Identify leaders within the company to advocate, particularly where supply chains are concerned	Part of core business or country/ regional business	Raise awareness among research and development teams and marketing personnel	Integrate better understanding of the innovation opportunities and social responsibilities related to improved nutrition into executive management training. Work with suppliers and distributors to ensure high quality product.	Develop and distribute affordable fortified products (low cost drinks, “sprinkles”, basic foods)
COMMUNITY INVESTMENT & PHILANTHROPY	Community nutrition campaigns	Encourage managers to engage with organizations to share business skills/ help in assessments / donate expertise	Donations for food distribution, school feeding, and nutrition awareness raising programs	Engage in child feeding, nutrition campaigns; engage in schools	Donate expertise, products and premises for training or for use by fortification alliances	Donate products, provide use of supply chain or marketing expertise for distribution of fortified foods
POLICY DIALOGUE & RULE MAKING	Encourage fortification standards and quality control; Encourage anti-corruption campaigns and law enforcement, including miller oversight, labeling laws, marketing protocols	Identify relevant legal and policy bodies related to fortification and engage in local capacity building	Advocate donor governments to position nutrition as a more central and integrated element of their donor programs and advocate developing country governments to allocate increased resources to tackling micronutrient deficiency	Policymaker education on health and economic impacts and indicators	Encourage anti-corruption and law enforcement to create a level playing field	Engage in policy dialogue around food fortification, low cost solutions, and engaging multiple policy-making bodies

c. Examples of Private-Sector Interventions

A handful of large companies are developing programs to address micronutrient deficiencies. They are formulating new products, creating distribution networks, and creating innovative packaging solutions to address the problem. Some of the most widely recognized of these efforts are summarized below.

■ The Coca-Cola Company

Based in Atlanta, Georgia, The Coca-Cola Company is the largest nonalcoholic beverage company in the world. Through the efforts of its employees, bottling partners, and customers, the company serves consumers in more than 200 countries at a rate exceeding 1 billion servings per day. In addition to Coca-Cola®, the Company markets four of the world's top five soft drinks, including diet Coke®, Fanta®, and Sprite®, as well as almost 400 brands and 2,100 products worldwide, including low- and no-calorie soft drinks, juices and juice drinks, waters, sports and energy drinks, teas, coffees, soy-based drinks, and fortified beverages with nutritional benefits. At the end of 2004, in ready-to-drink beverages, The Coca-Cola Company was ranked globally number one in sales of juices and juice drinks, number two in sports drinks, and number three in water.

Core Business: The Coca-Cola Company has long been involved with the issue of fortification and micronutrients. Its popular Hi-C drink has been fortified with the daily requirement of vitamin C for more than 50 years. The Company was the first beverage manufacturer to add vitamin D to orange juice to facilitate calcium absorption, and its Minute Maid Kids+™ orange juice is fortified with calcium and vitamins A, B1, C, D, and E. In the developing world, its work on micronutrients focuses on alleviating childhood “hidden hunger” through the production of fortified beverages that are tailored to local needs.

Social Investment and Philanthropy: The Coca-Cola Company and its bottling partners contribute to a wide range of community causes in countries around the world. In keeping with the local nature of the company's business and the differing needs of individual communities, the company's approach is primarily a local one, with community investment priorities determined on a market-by-market basis. In 2004, The Coca-Cola Company contributed more than \$46.7 million in cash to community programs and initiatives worldwide. In addition, the Company made a donation to The Coca-Cola Foundation, the Company's main philanthropic arm, of approximately \$75 million to be used over multiple years for projects and initiatives around the world.

In 2004, the company established the Beverage Institute for Health & Wellness to advance understanding of the role that beverages, and beverage ingredients, can play in nutrition, health, and wellness. Ongoing work includes the evaluation of emerging wellness trends and ingredients with a primary focus on beverage

“Food companies have played an historic role – though one that is little acknowledged – in helping to defeat vitamin and mineral deficiency in the industrialized world. And now that the truth about vitamin and mineral deficiency and its consequences is becoming known, it is a matter of urgency that the world should ask its food companies, large and small, to extend the benefits of fortification to all. Only the food industry has the products, the technology, the distribution channels and the marketing skills to do the job.”

UNICEF and the Micronutrient Initiative.
*Vitamin and Mineral Deficiency:
A Challenge to the World's Food
Companies.*

http://www.unicef.org/china/VMD_for_Food_Industry_in_English_-_25_August.pdf
Accessed May 30, 2006, 2.

applications and clinical studies that provide the scientific foundation for the development of new beverages to meet the changing wellness needs of consumers around the world. The Institute's staff of nutrition scientists and nutritionists works closely with its external Advisory Council of leading scientists and physicians affiliated with some of the world's most prestigious research organizations to set research, education, and outreach strategies and shape the ongoing scientific work of the Institute.

As part of an ongoing research and development effort to create a drink that could help combat blindness, anemia, and other diseases common among children in the less-developed world, scientists affiliated with the Beverage Institute helped guide the creation of Vitingo™, an orange-flavored drink containing a blend of 12 vitamins and minerals known to be critical for growth and development. Research in Botswana and Peru conducted by Dr. Steven Abrams of Baylor College of Medicine showed that daily consumption of Vitingo™ could help improve the nutritional status of undernourished children, including weight-for-age and iron status.²¹ Unfortunately, Coca-Cola efforts to introduce Vitingo™ into markets that serve the world's poorest children have been hampered by costs associated with the packaging required to prevent the drink itself and its vitamin and mineral fortificants from degrading due to heat exposure over time. However, governments including those of the Philippines, China, and India have shown interest in modifying Vitingo™ to meet the specific nutritional needs of their populations.

■ Group Danone

Based in France, Groupe Danone (Dannon Company) is a worldwide leader in the food and beverage sector. Its main focus, after restructuring in the late 1990s, has been on fresh dairy products, cereal biscuits and snacks, and beverages. It employs 100,560 people in more than 120 countries. The company's main brands include Danone – the leading brand for fresh dairy products, Evian, and Volvic (two of the five largest bottled water brands worldwide), and LU, the world's second largest biscuits and cereal products brand. In 2001, the Danone Group had 14.470 million euros in sales.

Core Business: Given that Danone's main products are nutritionally sound dairy products, cereals, and snacks, nutrition is a central issue to the company. Although it has not developed products to directly address micronutrient deficiency, penetration of new markets with its core products could address some nutrition issues in developing countries.

Social Investment and Philanthropy: In 1997 Groupe Danone founded the Dannon Institute, an independent nonprofit foundation to promote research, education, and communication about the link between nutrition and good health. The Dannon Institute focuses on children's nutrition, particularly preschool nutrition education, community-based nutrition programs, increased nutrition

21. See Steven A. Abrams, et al., "A Multinutrient-Fortified Beverage Enhances the Nutritional Status of Children in Botswana," *Journal of Nutrition* 133 (2003): 1834-1840; and Ana M. Avalos Mishaan et al., "Bioavailability of Iron and Zinc from a Multiple Micronutrient-Fortified Beverage," *Journal of Pediatrics* 145 (2004): 26-31.

knowledge among medical professionals, and fostering leaders in the nutrition field. Currently there are 14 locations around the globe that have supported work ranging from television spots on children and nutrition in China to a joint study with the Czech Ministry of Health confirming that many Czech children's diets lack important vitamins, including calcium. Groupe Danone also instituted Dannon's Children's Day, when an event is held at a hospital, school, or child support organization selected by the local factory, logistics center, or administrative site. Dannon personnel are also encouraged to participate in local development projects, and in 2001 the company launched a training program to train factory managers in how to effectively run programs, create a well-defined action plan, and identify the scope of a local partnership. In addition, the Dannon Institute International awards the Danone International Prize for Nutrition with the support of the French "Fondation Recherche Médicale." This 120,000-euro prize is awarded bi-annually to "recognize individuals or teams that developed novel concepts and advanced frontiers of Nutrition, either basic or applied research."²²

■ H.J. Heinz Company

Founded in 1869, Heinz is one of the world's largest food producers, manufacturing ketchup, sauces, condiments, beans, frozen foods, and pasta. It controls 60% of the U.S. ketchup market and can be found in over 200 other countries with 44,700 employees. Accounting for 150 brands, Heinz's core categories include ketchup and condiments, food service, pet food, tuna, weight control, infant feeding, frozen food, and convenience meals.

Core Business: Heinz is a global leader in infant nutrition, with over \$1 billion of annual sales in jarred baby foods, formulas, cereals, juices, and biscuits.

Social Investment and Philanthropy: Established in 1951, the Heinz Foundation has distributed over \$115 million since its inception. One of its six focus areas is nutrition, with special interest in promoting improvements in, and a better understanding of, nutrition issues. In addition to supporting feeding programs and leadership in the agricultural sphere, the Heinz Foundation is supporting Dr. Stanley Zlotkin's work to develop and distribute *Supplefer Sprinkles*,²³ an iron and vitamin mix that is sprinkled on food to prevent anemia and other nutrient deficiencies among malnourished children. It is hoped that this supplement will be widely distributed as a low-cost, more palatable alternative to iron drops, particularly in the developing world. In the United States and Canada, the company has created the Heinz Infant Nutrition Institute (HINI) to "promote the knowledge and advance the practice of infant nutrition. This endeavor is guided by a scientific advising council, consisting of top Canadian and American pediatricians and nutritionists."²⁴ Internationally, the Heinz Foundation supports the Institute of Nutritional Sciences and other initiatives to develop nutrition programs and formulate "nutritionally superior foods for the very young," conducting seminars in Italy, India, and China, as well as in partnership with nursing and pediatric organizations globally.

22. Danone Institute. *The Danone International Prize for Nutrition*.

<http://www.danoneinstitute.org/danone_institute_prize_for_nutrition/index.php>
Accessed May 30, 2006.

23. Sprinkles Global Health Initiative. *Frequently Asked Questions*.

<http://www.supplefer.com/about_sprinkles/faqs.html> Accessed May 30, 2006.

24. Heinz Infant Nutrition Institute.

<<http://www.hini.org/HINI/index.html>>
Accessed May 30, 2006.

■ Nestlé

Based in Vevey, Switzerland, Nestlé is the world's principal food company, leading the market in both the coffee and water divisions. In addition, it dominates the pet food division with ownership of Purina, and owns 75% of Alcon, Inc. (ophthalmic drugs, ocular surgery equipment, and contact lens solutions), as well as 26% of L'Oreal cosmetics.

Nestlé approaches the issue of nutrition from a variety of angles.

Core Business: Nestlé, at its core, is a nutrition company with 25% of its business centered on milk and milk products. According to the firm, its milk is a vehicle for vitamin and mineral fortification, calcium, and probiotics, so as it expands the milk market to areas that did not previously have access to this product it is also helping to address certain micronutrient deficiencies. Because of its need to produce safe products with nutritional value, Nestlé seeks to purchase “high quality agricultural goods produced in a sustainable way.” To this end, the firm has provided technical assistance to hundreds of thousands of farmers in its supply chain to improve their capacity and the quality of their products. This, in turn, has had a positive impact on farmers and women in the community in developing countries including Brazil, India, China, the Philippines, and Morocco.²⁵

Furthermore, Nestlé has developed a host of fortified products. These include Maggi soup bouillon cubes, the biggest source of soup worldwide, which is iodine fortified in most countries to guard against goiter, and the children's drink Milo, which is vitamin fortified and sold primarily in Asia and Africa. Nestlé has also joined forces with General Mills to produce fortified breakfast cereals, which it distributes worldwide.

Social Investment and Philanthropy: Nestlé has nutrition and/or physical activity programs in every country in which it does business. In some of these countries, such as Brazil and Russia, these programs are quite extensive. In Brazil, for example, Nestlé and its employees are engaged in a nutrition education and feeding program for poor families called *Nutrir*, which has reached over 100,000 children.

In Russia, the company has used characters from the ever-popular program Sesame Street to develop colorful and dynamic materials for use in schools to educate children on nutrition and healthy eating habits. This program, recommended by the Russian Ministry of Education, has been implemented as part of the primary school curriculum and has reached nearly 1 million children. In Colombia, Nestlé supplies fortified biscuits to over 500,000 children through the public school system in conjunction with the Colombian Institute of Family Welfare, and its target for end 2005 is 1 million children per day. In addition, Nestlé is involved with rural school feeding programs and has developed, in conjunction with the International Red Cross and Red Crescent, a computer program to assist relief workers with no nutritional knowledge to prepare food

25. See Ray A. Goldberg, “Nestlé's Milk District Model: Economic Development for Value-Added Food Chain and Improved Nutrition,” *Harvard Business School Case 906-406* (2005).

rations that cover essential nutrients. The Nestlé Foundation supports research on maternal nutrition and the long-term impact this can have on children, as well as disbursing scholarships to study nutrition in the developing world.

■ Procter & Gamble (P&G)

Founded in 1837 as a family-operated soap and candle company, Procter and Gamble is now a US\$55 billion firm, employs 98,000 people working in almost 80 countries, and sells its products in 140 countries worldwide. It has three global businesses and manufactures three main categories of products: global beauty care (Skin, Personal and Haircare); global family health (Babycare, Oralcare, Personal Health, Pet Health and Nutrition, and Pharmaceuticals), and global household care (Homecare, Fabric care, Snacks and Beverages).

Core Business: P&G's micronutrient work was originally centered in its snack and beverage unit, which developed "triple fortification" iron, vitamin A, and iodine technology and the technical go-to-market capability in a low-cost micronutrient fortified powdered drink containing these three key minerals plus eight other essential nutrients. The company's Nutrition Science Institute, which employs 15 people in the United States and Asia and accounts for approximately 6% of the snack and beverage research and development unit, developed this product after the company was approached by UNICEF, the Micronutrient Initiative, and Cornell University to devise a solution to "hidden hunger." Supported by P&G and Cornell University, UNICEF funded the first clinical study, conducted with 700 primary aged children in Tanzania in 1996.²⁶ Results from this and a subsequent clinical trial in the Philippines showed the efficacy of the micronutrient drink in significantly elevating blood status and children's growth, mental cognition, and physical performance. Equally strong proof of efficacy has been established for the technology in its ability to improve health of third-trimester pregnant women (Tanzania), including a significant increase in breast milk vitamin A content, and among adolescent females (Bangladesh) for improved blood status, overall growth (BMI), and cognitive performance.

26. Michael C. Latham, et al. "Efficacy Trials of a Micronutrient Dietary Supplement in Schoolchildren and Pregnant Women in Tanzania," *Journal of Nutrition* 133 (2003): 1339-1346.

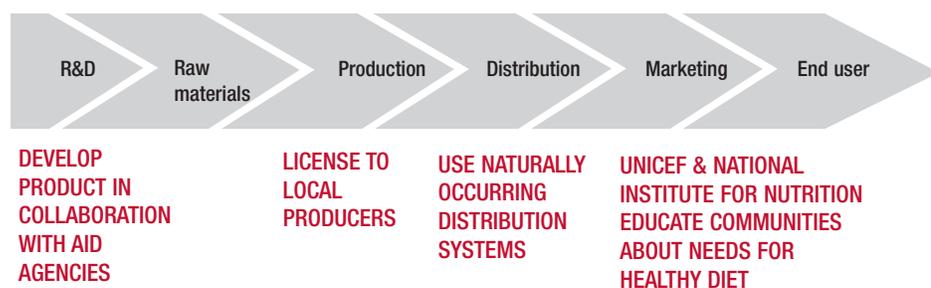
In 1999 P&G branded the technology as NutriDelight in the Philippines. Before it was introduced, P&G funded and collaborated with the Nutrition Center of the Philippines (NCP), UNICEF, World Health Organization (WHO), and the Board of Health/Department of Education in the development of a primary school program for education about micronutrient deficiency and ways to combat hidden hunger. This initial attempt to introduce the product to market failed for a number of reasons, including insufficient distribution networks to access the poorest communities, lack of local reach and knowledge on the part of the company, unaffordable pricing structures for the intended market, and competition from local imitations that claimed, falsely, to be fortified as a result of weak intellectual property rights enforcement.

In 2001 P&G then re-branded the product as Nutristar and test marketed it in Venezuela, shifting away from a “do-it-yourself” approach to a new network and partnership model of local partners. This network of partnerships with UNICEF and local pediatric associations provided education programs to raise awareness of “hidden hunger” and created consumer demand for a product that could help. Local naturally occurring distribution systems were employed to get the product distributed. In addition, Nutristar was sold in small sachets, known to be compatible for markets in low income countries. Each sachet was priced at US\$0.30 for 5 glasses (\$0.06/glass). Despite the changes in the business model, it continued to prove difficult to reach all levels of society where the product was needed. With political instability preventing further refining and establishing a sustainable business model, P&G eventually pulled Nutristar from the market in 2003. However, Procter & Gamble is currently working on a program to license the technology to a local private-sector partner to produce/distribute/market this product in Bangladesh.

With the divestiture of P&G’s Sunny Delight® beverage brand business in 2004, the micronutrient technology now resides within the external business development and global licensing group, with a continued commitment to make the enabling technology and know-how available through licensing partnerships. P&G has continued to innovate in enabling raw material/manufacturing process technology to drive down local costs allowing low-capital, local country high quality production, with “proof-of-concept” demonstrated in Nicaragua.

P&G’s new product distribution model for micronutrient-related product is captured in Figure 7.

FIGURE 7 P&G’S MICRONUTRIENT DELIVERY STRUCTURE²⁷



27. World Business Council for Sustainable Development. “Procter & Gamble Combating Hidden Hunger.” <http://www.wbcsd.org/web/publications/case/nutridelight_full_case_final_web.pdf> Accessed May 30, 2006.

As a complementary product to Nutristar, P&G has also developed, in collaboration with the CDC and as a result of research conducted since 1995, PUR®, a water purifier that can be used at the household level. Each sachet of PUR®, priced at US\$0.10, purifies 10 liters of water within 30 minutes and has been found in extensive testing to remove microbial and chemical contaminants. Once again the company is partnering to distribute the product, selling it in many markets and providing it at cost or as donations to refugee camps and disaster relief sites.

Social Investment and Philanthropy: Many micronutrient-related products are aimed at the “bottom of the pyramid”²⁸ or people whose per-capita income, based on purchasing power parity in U.S. dollars, is less than \$1,500. Many of those who fall into this category earn less than \$1 per day. Not only do products aimed at these markets require innovative approaches to marketing and distribution methodologies, but this sector may also require different products. Such products are developed at the P&G Health Sciences Institute and the P&G Nutrition Science Institute, where scientists research solutions to creating safe water, musculo-skeletal pain relief, respiratory care, gastrointestinal health, hygiene, and weight management and nutrition. The issues being researched that are of particular relevance to the developing world include improved micronutrient nutrition; a collaboration with the Pasteur Institute and the CDC around education and communication about hygiene as related children’s health now being implemented jointly with governments in China, Pakistan, and the Philippines; children’s diarrhea; and water purification.

Under P&G’s Live, Learn and Thrive corporate program, PUR® safe drinking water program is the key focus area based on UN’s Millennium Development goal of providing improved access to safe drinking water. Through the Safe Drinking Water Alliance (P&G, Johns Hopkins University, Population Services International, USAID), P&G is exploring ways and means to make this technology sustainable through social marketing – the marketing of socially useful products using commercial marketing methods and subsidized prices – concurrently with immediate global relief needs.

■ Seaboard

Based in Shawnee, Kansas, and 70% owned by the descendants of its founder Otto Bresky, Seaboard is a diversified agribusiness and transportation company with operations in approximately 20 countries in the Americas and Africa. Seaboard sells pork in both the U.S. and international markets, while internationally it trades grains and seeds, operates power plants and feed mills, and grows and refines sugar cane. Additionally, the company operates a containerized cargo shipping service between Florida, the Caribbean, and South America. Seaboard has more than 5,000 U.S.-based employees and approximately 4,000 additional employees within its Latin American and African operations. It is a Fortune 1000 company with net sales of approximately \$2.0 billion annually.

Seaboard’s Commodity Trading & Milling Division, operating in 17 countries, markets wheat, corn, soybean meal, and other commodities in bulk to third-party customers internationally and affiliated companies. This division originates, transports, and markets approximately 4 million tons of wheat, corn, soybean meal, and other commodities annually.

28. C. K. Prahalad. *The Fortune at the Bottom of the Pyramid* (Upper Saddle River, NJ: Wharton Publishing, 2005).

Seaboard operates in some of the most politically complex areas of the world, often in conflict zones where other companies choose not to operate. Its grain processing businesses, operated through four owned and nine non-consolidated affiliates in Africa, South America, and the Caribbean, produces approximately 1.5 million metric tons of milled flour, feed, and maize per year.

Core Business: Seaboard fortifies its products with a range of basic micronutrients. Its flour and maize is sold in some of the world's poorest countries such as Haiti, Guyana, the Democratic Republic of Congo, and Angola. Some of the impetus to fortification is to comply with legal standards; South Africa, for example, has mandated that any imported flour must be fortified. In the vast majority of countries, however, fortification is not mandated but Seaboard has decided that it creates competitive advantage that meshes with good health and social policy. In many countries Seaboard is either the sole or one of the only millers, so while micronutrient fortification does not help to capture more market share, the company remains committed to providing "the best product for our consumers, many of whom are the poorest in the world. Seaboard believes that fortification improves the product and improves our consumers."²⁹

Public policy: By studying the positive health impacts of its fortified product as compared to imported unfortified French flour in the Democratic Republic of Congo, where it works with the Ministry of Health on the fortification issue and where it is the biggest flower miller, Seaboard hopes to spur market demand for fortification based on proven health improvements. This would mean that consumers will be pressuring governments and other millers to begin fortifying grain products. One challenge that the company has identified in countries such as Nigeria, that have mandated fortification but do not have the capacity to enforce these laws, is that there is significant cheating by competitors who lie about fortification. It is Seaboard's belief, however, that it is in flour and maize processors' best interest to fortify, a process with marginal cost that has great benefit to the consumer.

29. Ralph Moss. Vice President, Government Affairs, Seaboard. Interview with the author, April 12, 2005.

■ Tetra Pak

Established in the early 1950s by Ruben Rausing, the inventor of ultra high temperature (UHT) packaging, Tetra Pak covers 165 markets, has more than 20,000 employees, and is controlled by the Rausing family. Tetra Pak has become one of the world's largest suppliers of packaging systems for milk, fruit juices, and drinks. Milk that is packed and processed using UHT technology has a shelf life of up to 12 months without any added preservatives, if left un-opened and stored at ambient temperature. In 1991, Tetra Pak acquired Alfa Laval and incorporated manufacturing of the processing equipment into the business. This included processors of most still drinks, including milk, juices, teas, soy, and coconut, as well as equipment to process cheese.

Core Business: Tetra Pak's products – processing equipment, packaging equipment, and distribution equipment mostly for long-life liquid foods, as well as Tetra Recart, a fiber-based long-life package for foods now distributed in tin cans – are particularly useful in developing countries where clean water and safe food storage facilities are less available. The company has supported its partners to develop a product called NutriSip, a maize- and soy-based meal replacement or food supplement containing the six essential nutrients to sustain life – protein, carbohydrates, fats, minerals, vitamins, and water. NutriSip was originally developed to target the most vulnerable populations suffering from malnutrition: toddlers, children, and pregnant and lactating woman. It is now being considered for wider distribution to children suffering from hidden hunger.

NutriSip is currently being produced by one of Tetra Pak's customers, Good Hope International based in South Africa, and is being supplied to the Nigerian state of Nasarawa, which commenced its school feeding program in July 2005. This program aims at providing the highly fortified liquid drink to 450,000 schoolchildren five times a week at the end of 2006 and was officially launched by President Obasanjo on September 27, 2005.

The school feeding program in Nasarawa is one of the 12 pilot states that will introduce a school feeding program in Nigeria before July 2006. This pilot will cover approximately 2.5 million children, and President Obasanjo's vision is to cover a total of 27 million Nigerian children during the next 10 years.

Tetra Pak and its partners are also trying to link the agricultural sector into the production of NutriSip to stimulate growth in the agricultural sector. The Solae Company, part of the DuPont Group, has developed a highly fortified liquid drink based on locally grown Nigerian cassava, maize, and sorghum. It is expected that the local production in Nigeria based on these formulations will commence during the first half of 2006.

Tetra Pak has also developed a fortified liquid drink which it is distributing to its Durban, South Africa, workers who are living with HIV/AIDS to support balancing their immune system to better fight their illness.

Social Investment and Philanthropy: Tetra Pak has a long history of supporting school feeding programs and is directly and indirectly involved in school milk programs covering 45 countries worldwide. More than 1 billion liters are packed in Tetra Pak's packages and provided to the schoolchildren in these 45 countries every year.

As a result of its involvement in school feeding programs, Tetra Pak established the Food for Development Office (FfDO) to coordinate work on feeding programs and agricultural development with governments, the private sector, and nongovernmental organizations.

This global network acts as a support to Tetra Pak's 58 market companies covering some 165 countries worldwide. This eight-person unit collaborates to drive development of certain products or provide remote support to a market company in three key areas:³⁰

- health and nutrition – malnutrition and disease eradication, emergency relief, school feeding, productivity improvement programs
- education
- poverty alleviation – agricultural development, private sector development, job creation.

Tetrapak works in conjunction with other businesses and partners such as the United Nations Development Program, World Food Program, and the Aga Khan Foundation.

Public policy: TetraPak's FfDO works directly with governments on initiatives such as the Iranian School Milk Committee covering 6 million children in Iran's poorest provinces, China's government-led school milk children that has provided over 2 million children with milk in schools and has also ensured strict quality control and product pricing, and the Panamanian school milk program run by the Ministry of Education. The Food for Development Office provides technical support to national authorities on feeding program implementation that includes checks and balances to avoid potential misappropriation of funds.

■ Unilever

Founded in the 1890s by a soap maker who popularized hygiene in Victorian England, Unilever is now based in the Netherlands. Its main merchandise includes household products, such as Dove soap and food and beverages such as Hellmann's mayonnaise, Ben and Jerry's ice cream, and Lipton tea. The company also operates tea and oil plantations.

Core Business: Unilever has developed the Annapurna brand, initially aimed at the Ghanaian market to target the issue of iodine deficiency and now being applied to several markets across Africa. The company has developed a range of Annapurna products including iodized salt sold in small sachets, iron-fortified whole maize flour, and iron-fortified cassava-based biscuits to address the deficiency issue. The Unilever Health Institute, part of the company's Foods Research Centre in the Netherlands, has three regional centers in Africa, Latin America, and Asia, allowing Unilever scientists to create innovative products for developing and emerging markets and to maintain contact with local scientists and research institutes. This, in turn, creates an understanding within the firm about local consumers' dietary needs, preferences and tastes, and traditions in food, which helps them to develop products suitable for these markets.

30. Tetra Pak. *The Role of the FfDO*.
<http://www.tetrapak.com/ffdo/content/frset_main.asp?navid=119> Accessed May 30, 2006.

Social Investment and Philanthropy: Unilever has engaged in a child-feeding program in partnership with a Philippino NGO in Manila. This program supports mothers of undernourished children who gather daily and are given recipes and ingredients to prepare meals for 6 months. The children are weighed and dewormed, and their health and weight progress is tracked throughout their involvement with the program. An 80% success rate in normalizing weight has been found through engagement with this program.

Public policy: In Ghana, Unilever is supporting a government initiative to address iodine deficiency by offering consumers iodized salt at a price they can afford in small sachets under the Annapurna brand. The product was launched in 2000 and by 2003 50% of the market had switched to refined iodized salt. As a result, 4 million more Ghanaians are using iodized salt.³¹ Additionally, in collaboration with the government and UNICEF, the company is rolling out an education program aimed at 3,000 schools to educate children about the benefits of iodized salt. Annapurna is now being launched in Nigeria and there are plans to bring it to market in Malawi, Mozambique, and Kenya. Unilever is also producing biscuits and rice fortified with vitamin A and zinc (to boost children's immune systems) under the Annapurna brand. Both were launched in 2004, and Unilever Health Institute is developing new products.

d. The Need for Partnership

Although the private sector can play a vital role in addressing the issue of micronutrient deficiency, individual action may be insufficient. Providing “public goods” and managing national nutrition and competitiveness issues falls squarely in the realm of government, so collective action by the private sector, government, and civil society may be required to address this challenge. Engagement by different actors may create the best results by leveraging the full range of expertise and resources along a continuum. In addition, cross-sector partnerships may lend greater legitimacy to the endeavor. Working across sectors can discount suspicion that companies are involved simply for market purposes. Multilateral organizations contribute expertise, and government participation ensures sustainability and country-appropriate outcomes.

However, multisector partnerships may not be the solution in all cases. It has been noted that in some instances companies have been happy to take a lead on fortification, but are very wary of publicizing their efforts precisely to avoid drawing in the government. A multisectoral approach is difficult where the government lacks capacity, and its involvement can slow down a project, undermine its accountability and efficiency, and act as a disincentive to firms.

UNICEF and the Micronutrient Initiative have outlined some ideas for governments to create a better enabling environment so that food companies can

31. Unilever. *Herbert Smorenburg – Africa*.
<http://www.unilever.com/ourvalues/environmentandsociety/people_profiles/herbert_smorenburg.asp> Accessed May 30, 2006.

engage in micronutrient fortification while remaining competitive. Figure 8 illustrates these suggestions.

**FIGURE 8 CREATING AN ENABLING ENVIRONMENT FOR FORTIFICATION:
SUGGESTIONS FOR GOVERNMENT³²**

- Endorse approved food products, with official government seals or stamps for use in commercial advertising.

 - Allow distribution of certain fortified foods via schools, hospitals, clinics.

 - Specify fortified foods when placing food orders for schools, the armed forces, health service personnel, or for disaster relief and refugee feeding programmes.

 - Reduce duties on imported vitamins and minerals, or on essential machinery and pre-mixes for flour fortification.

 - Buy bulk supplies of vitamins and minerals using foreign exchange provided under aid programmes.

 - Provide free storage, and release vitamins and minerals to the private sector as and when needed - at or below cost price.

 - Make certain kinds of food fortification compulsory (as with iodised salt and iron-fortified flour). But producers need to know that the law will be enforced fairly and transparently, with penalties for noncompliance.

 - Provide clear and consistent guidelines ('Tell us what we have to add, make it the same for everybody, and don't keep changing it').
-

There are several public-private partnerships currently being undertaken to address micronutrient deficiency, including the Flour Fortification Initiative, which engages the milling industry to encourage fortification of flour. While there are a number of product- or sector-specific initiatives around micronutrient deficiency, the Global Alliance on Improved Nutrition (GAIN) emerged both to raise awareness of the issue and to find multisectoral solutions to it. GAIN was established in 2002 and operates at the global level, with country-level implementation in 14 countries as of 2005.

32. UNICEF and The Micronutrient Initiative.
*Vitamin & Mineral Deficiency: A Challenge to
the World's Food Companies.*

VI The Global Alliance for Improved Nutrition (GAIN)

a. Creation

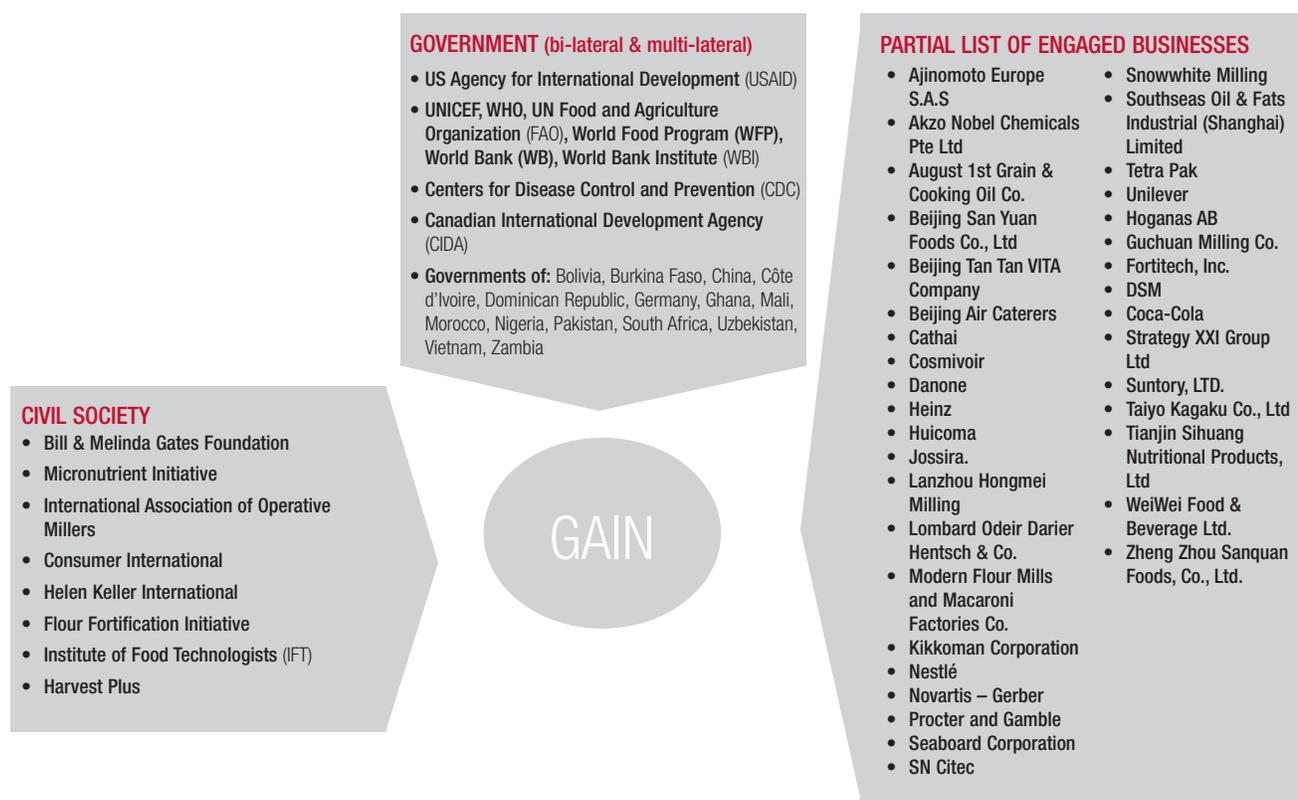
The Global Alliance for Improved Nutrition was created at the UN General Assembly Special Session on Children (2002) as a collaborative mechanism for business, civil society, and governmental organizations to address and improve micronutrient challenges worldwide. It began work in the summer of 2003.

The nutrition community, including academia, industry leaders, the UN, and government representatives, took proactive steps to establish GAIN with substantial financial support from the Bill and Melinda Gates Foundation. Headquartered in Geneva, the alliance received administrative support from UNDP in its startup phase. It also received financial support from the Canadian Development agency and USAID. Since January 2006 GAIN has been administered independently as a Swiss Foundation, and the current expectation is to broaden the group of donors supporting GAIN, particularly in Europe. GAIN has raised US\$100 million since its creation.

The nutrition community, including academia, industry leaders, the UN, and government representatives, took proactive steps to establish GAIN with substantial financial support from the Bill and Melinda Gates Foundation.

Figure 9 illustrates the GAIN alliance structure.

FIGURE 9 GAIN ALLIANCE STRUCTURE



b. Aims, Objectives, and Strategy

The Global Alliance for Improved Nutrition (GAIN) is an alliance between the public and private sectors aimed at reducing micronutrient deficiencies among at-risk populations through nutrition-based strategies. GAIN convenes partners at both the national and the global levels on a project basis. At the national level, GAIN-funded projects are coordinated by *national fortification alliances* (NFAs) comprised of the government, food manufacturers and producers, and consumer groups.

The organization has a six-pronged approach:³³

- Mobilizing private industry, international donors, and foundations in support of food fortification initiatives in low-income countries;
- Tapping the expertise and resources of the corporate sector in technology transfer, business development, trade, and marketing;
- Working with the UN and other multilateral agencies to set international standards and establish systems for quality assurance and control;
- Utilizing public-sector capabilities to address legislative and regulatory barriers to food fortification;
- Developing a broader role for NGOs and civic organizations in food fortification;
- Linking food fortification efforts with other essential interventions, such as micronutrient supplementation and dietary diversification.

GAIN provides grants and technical advice to support the delivery of fortified staple foods and condiments to populations at risk of vitamin and mineral deficiencies. It also supports NFAs by encouraging companies interested in the micronutrient issue to work in partnership with national governments and consumer groups to address specific micronutrient issues through a “Business and Consumers Program” and “Special Programs.” Currently, GAIN has approved 15 projects in 14 countries and has called for its fourth round of proposals. The organization awards are between US\$1 million and US\$3 million and support social marketing activities, quality control, and fortification processes. GAIN estimates that within three years its country programs will achieve coverage of 450 million people, of whom 293 million are considered at risk of vitamin and mineral deficiencies.³⁴

c. Governance

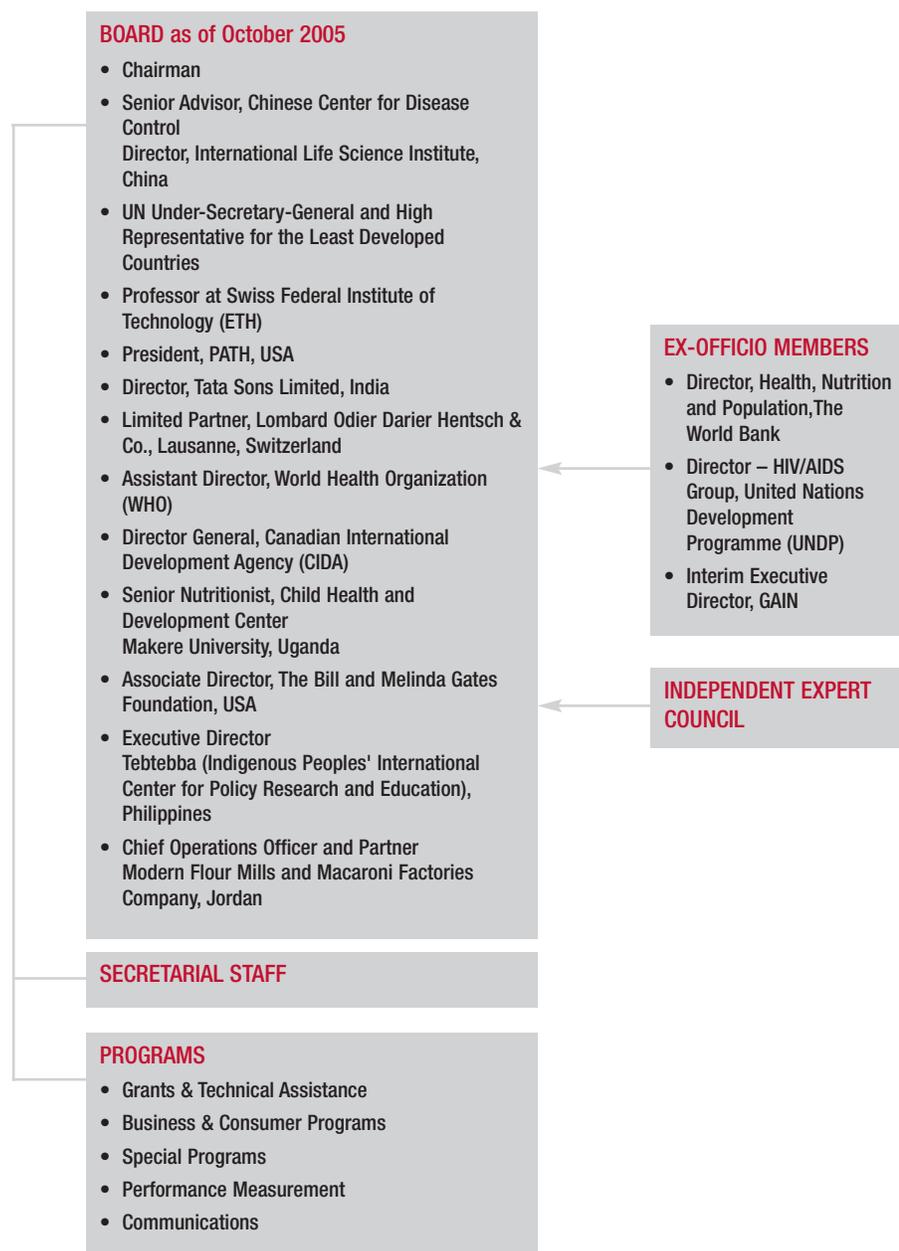
GAIN is administered by a Secretariat and is governed by a sixteen member Board, comprised of leaders from business, civil society, and the international development, donor, and UN communities. Its current Board Chairman is Jay Naidoo, former South African cabinet minister and current Chair of the Board of Directors of the

33. Global Alliance for Improved Nutrition. *Strategic Approach*. <<http://gainhealth.org/strategicapproach.asp>> Accessed May 13, 2005.

34. Global Alliance for Improved Nutrition. *Progress Report*. <http://www.gainhealth.org/gain/ch/en-en/index.cfm?page=/gain/home/about_gain/progress_report> Accessed May 30, 2006.

Development Bank of Southern Africa. GAIN's Secretariat, which manages the day-to-day operations of the Foundation, is made up of a small group of professional and support staff. Figure 10 illustrates GAIN's organizational structure.

FIGURE 10 GAIN'S ORGANIZATIONAL STRUCTURE³⁵



35. For a list of Board members, see Global Alliance for Improved Nutrition. *GAIN – Board of Directors*. <http://www.gainhealth.org/gain/ch/en-en/index.cfm?page=/gain/home/about_gain/organization/organizationboard_directors> Accessed May 30, 2006.

d. Operations

Since January 2005 GAIN has undergone a complete transformation process, which is still underway. This includes new strategies, change in program delivery, and a new program structure that is decentralised with offices opening in India and China. GAIN carries out its work in five modes:

Grants: The organization disburses two types of grants. **Competitive Country Grants** support public-private national fortification programs in 14 countries. The **Larger Country Initiatives**, representing 70% of GAIN's budget, focus on partnership in India, Brazil, Indonesia, and specific regions of China. It aims to cover 860 million people, the majority of whom are poor and at risk, with appropriate fortified food vehicles stratified by patterns of consumption. The **Small Grants Scheme's** objective is to provide small investments to remove technical hurdles and address technical gaps to food fortification. In addition, GAIN supports regional and global fortification initiatives and activities aimed at strengthening GAIN as an Alliance. [Note: the small grant scheme is under revision – updated materials are available off the GAIN website.]

GAIN's competitive country grants are developed in partnership with the recipient, and moneys are disbursed to a National Fortification Alliance (NFA). The NFA is a local partnership or network composed of leading professionals involved in nutrition programs at the national level and representing civil society, government, the scientific community, and private-sector representatives from one country that convene around the issue of food fortification. Most of these grants are for US\$3 million, while special initiatives fall in the US\$50,000-100,000 range.

Appendix I illustrates one of GAIN's country programs.

Business and Consumer Program: The Business and Consumer Program provides support for businesses engaged in micronutrient work, including support for technical, capacity building, learning, and advocacy-based joint initiatives, facilitating partnerships between companies in the food value chain from vitamin producers to retailers and other sectors, and providing tools to the private sector to accomplish this work. The program is also researching how to improve procurement services of vitamin and minerals and is supervising the development of a process called "The 10 Year Strategy for the Micronutrient Sector, an initiative of the Alliance Working on Vitamin and Mineral Deficiencies." The Alliance partners' vision is to eliminate vitamin and mineral deficiencies by 2015.

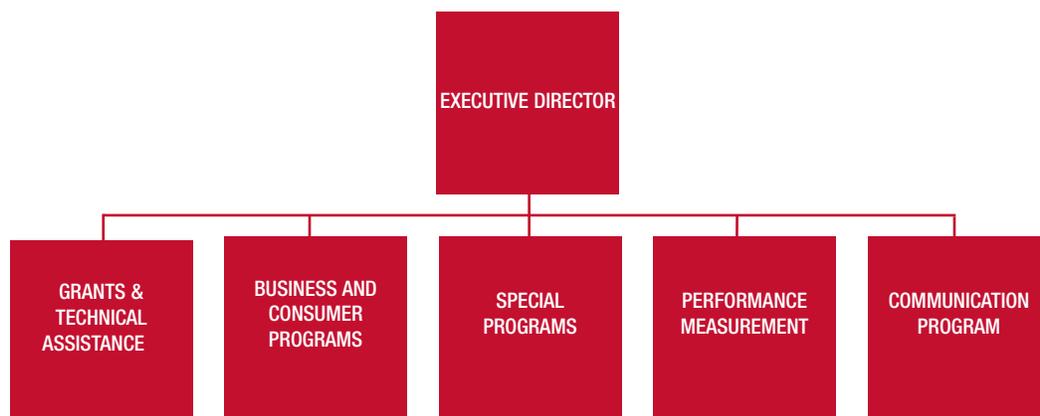
Special Programs: Special Programs provides support for particular programs in relevant fields such as school feeding, fortified sprinkles for young children and pregnant women, vitamin and mineral deficiencies in emergency zones, and fortification in Africa.

Performance Measurement and Monitoring (PMM) Program: The oversight mechanism of all of GAIN's programs ensures that targets and performance indicators are being met.

Communication Program: The Communication Program supports planning and implementation of communication, social marketing strategies, and advocacy campaigns.

Figure 11 illustrates GAIN's program framework.

FIGURE 11 GAIN'S PROGRAM FRAMEWORK



e. Evaluation

GAIN has developed methods by which to evaluate micronutrient deficiency in local areas, as well as its own program implementation, and is now in the stage of implementing these tools. To evaluate the burden of micronutrient deficiency in specific locations, the organization is developing a set of “at risk” definitions based on public health and nutrition data and a set of poverty indicators based on current work in this field, and a discussion paper is being prepared on the costs of micronutrient interventions.

To measure its own performance GAIN has hired a Senior Manager in Performance Measurement and has developed the organization's first performance framework. This framework, designed after a review of best practices of performance tools of other international organizations, includes indicators for short-, medium-, and long-term results. A set of 17 indicators is included to measure annual progress, and all indicators have been standardized to a degree that enables comparison of performance across the organization's investments.

The framework includes eight targets for the organization. They include reach of GAIN programs, expected reductions in prevalence of vitamin and mineral deficiencies, and public as well as private-sector commitment to food fortification. There is also an emphasis on efficient program delivery through establishment of benchmarks for cost-effectiveness and maximum overhead. Measuring annual performance against these targets will guide the organization in redirecting resources where required to maximize their impact.

In 2006, GAIN will begin implementation of the performance framework across all of its programs. Subsequently, indicators will be further refined and baseline surveys will be undertaken in a number of GAIN's project areas. In addition, to ensure rigor, an independent expert panel will be convened to advise the performance measurement program and to review methods, data, and reports. GAIN will deliver its first annual report against the 17 indicators and targets to its board and other stakeholders in October 2006.

f. Working with the Private Sector

Since its inception, GAIN has aimed to engage the private sector. It has done so successfully at the local level, establishing national fortification alliances (NFAs), which are open to business membership in over 14 countries. To obtain a GAIN grant, the organization requires that each country establish an NFA to ensure that the appropriate foods are fortified and that they are made available through market mechanisms. In addition, projects are examined to ensure that activities will extend coverage among groups at risk for vitamin and mineral deficiencies. NFAs are comprised of interested parties from civil society and the public and private sectors.

In its early days (2002-2004) GAIN was less successful at engaging the private sector at the global level, as there was an implicit assumption within the organization that the private sector had to be regulated rather than brought into equal partnership. By the end of 2004, however, GAIN began re-thinking its relationship with the private sector. The organization went through a leadership and personnel change and came to the realization that the private sector, which is responsible for 90% of food fortification worldwide, has an enormous role to play in addressing micronutrient deficiency.³⁶ GAIN understood that if it wanted to accelerate fortification, the private sector was a critical stakeholder to engage in terms of both multinational companies and local industries.

36. Marc Van Ameringen. Executive Director, Global Alliance for Improved Nutrition. Interview with the author, January 2006.

37. Global Alliance for Improved Nutrition. *Business and Consumer Program Goals*. <http://www.gainhealth.org/gain/ch/en-en/index.cfm?page=/gain/home/about_gain/organization/organizationboard_directors> Accessed May 30, 2006.

This new awareness within GAIN led it to restructuring its strategy to better interface with the private sector. It established the Business and Consumer Program, whose overall goal is to catalyze a wide range of contributions from the food industry and consumer groups to reduce vitamin and mineral deficiencies, including skills, access, technology, investments, staff time, and, possibly, funding. Its other aims include³⁷

- a. Scale up and consolidate existing fortification projects initiated by companies for the benefit of deficient and poor populations;
- b. Advance consumer groups' activities, aiming at the promotion of fortified products;
- c. Increase coverage in countries where GAIN is not operating and increase coverage of targeted population groups, such as children;
- d. Establish a broad and committed constituency to back the creation of a

nutrition movement able to raise the profile of vitamin and mineral deficiencies on the global agenda;

- e. Negotiate special deals with key industry sectors such as the pre-mix manufacturer and the equipment providers; and
- f. Facilitate corporate partnerships for the GAIN Alliance partners.

GAIN is being both pragmatic and innovative in its new strategy for seeking modes to work with the private sector. Currently it is doing so in three ways:

- Bilateral agreements such as Memoranda of Understanding (MOUs), joint projects, etc.
- The Business Alliance on Food Fortification (BAFF)
- National Business Alliances.

■ Bilateral Agreements

The organization is now working with companies that are actively involved in the UN Global Compact and has developed guidelines, now under revision, on its interactions with the private sector. In practice GAIN is looking to promote innovative solutions led by companies that are able to reach out to the poor. GAIN keeps an open and constructive dialogue with all companies in the food sector and, as of April 2006, has signed Memoranda of Understanding with BASF, Danone, Seaboard Corporation, and Tetra Pak. It is negotiating partnerships with another five multinational companies and plans to work much more closely with smaller companies in developing countries.

GAIN does not endorse products, but rather supports corporate projects with technical assistance. Specific ways that the organization is planning to engage with the private sector include scaling up existing successful initiatives such as Sprinkles, a vitamin and iron mix to add to food, and school feeding programs, joint awareness-raising and educational activities with organizations such as UNICEF and the Flour Fortification Initiative, assistance in social marketing, and helping to promote food fortification through publications and reports.

Furthermore, GAIN holds consultations to better understand the needs and interests of the private sector. This enables joint thinking on how best to reach consumers at the bottom of the pyramid, the poorest of the poor, through products that companies are developing to address micronutrient deficiency in these populations.

■ The Business Alliance for Food Fortification (BAFF)³⁸

The Business Alliance for Food Fortification (BAFF), launched on October 22, 2005 in Beijing, is a strategic partnership network to strengthen private sector

38. Michael Jarvis, Competitiveness & Development Program, World Bank Institute. *CSR Training Module* <<http://www.worldbank.org>> Accessed February 2006.

initiatives in food fortification for the poor in developing countries. BAFF brings together the food industry globally with GAIN, the World Bank Institute (WBI), and other supporting partners in the fight against malnutrition, such as UNICEF.

The BAFF's purpose is to identify new financial mechanisms and new business models, expand scientific knowledge and expertise in fortification, and catalyze joint action between companies, development partners, and government. Private sector strengths in products, technology, and marketing are vital in creating market-viable and sustainable food fortification. In helping bring together representatives from the private sector, government, and civil society, the BAFF is a forum to mobilize global action and deliver results through projects at the country level. At its launch, 89 BAFF members committed their support for the Beijing Declaration on Food Fortification, recognizing the importance and promise of food fortification and making fortified staple foods and condiments available to those most in need.

Each of the sectors involved in a public-private partnership usually joins anticipating that there will be mutual benefit in such an endeavor, and with wariness of potential risks that may emerge. Multi-sector partnerships are even more complicated by nature because they usually address a complex issue that requires a multi-pronged systems approach.

Partnership Building

The process of partnership building is continuous and reflected in collaboration on knowledge sharing, organization of specific events, such as the Annual Forum of BAFF, and project development for specific food fortification projects. This process requires a level of flexibility, as different partners are involved in different projects, varying by such factors as location and targeted food products. The success of each activity reinforces the partnership as a whole. However, the global BAFF is not always the best venue for some more regional efforts, and therefore the partners have agreed to support the creation of national and regional versions of BAFF under the umbrella of the global BAFF and the GAIN alliance. The creation of a China BAFF headed by two local companies is the first example of this approach. BAFF's success relies on enabling partners to take a lead where they can most add value, and gaining the benefits of effective direction and leadership without constricting bureaucracy.

Ensuring Accountability

BAFF has two co-chairs from the private sector – one from Unilever and one from Coca-Cola – who, as agreed by BAFF's corporate members, take a leadership role in decision-making and shaping the direction of BAFF in close coordination with representatives of both GAIN and WBI. The co-chairs are accountable for consulting the full corporate membership and reporting on decision making. Each partner is held accountable for its actions on specific in-country projects that rarely involve all BAFF members. Each partner in turn is held accountable by its management and stakeholders; for example, GAIN is accountable to its Board, and the companies to their shareholders.

Measuring and Evaluating Progress

The importance of effective results measurement and performance evaluation is clear to all the BAFF members, and the established expertise of the private sector in

monitoring and evaluation provides a strong basis for gauging the impact of BAFF. Progress is measured in terms of the utility and reach of partnership products, such as case studies for learning, and above all by the results of country-level projects to reduce vitamin and mineral deficiencies among target populations of BAFF members. A full report reviewing BAFF's first Annual Forum was prepared and shared with all members in December 2005.

Building Institutional Capacity

Strengthening the institutional capacity of BAFF is an ongoing process, and the needs of the partnership and individual partners are regularly reviewed. A key component of BAFF is the organization of multi-stakeholder dialogues, the sharing of research and best practices, and development of learning tools that can support the efforts of all BAFF members in fighting malnutrition. There is a strong commitment to a learning program with annual offerings to the partnering firms and institutions. The lessons from the organization of the global BAFF are also disseminated to support the creation of regional and national-level versions of the alliance.

Several of the companies highlighted in the previous section are active in GAIN.

- Frank Riboud, Danone CEO, joined the GAIN board in 2006.
- Coca-Cola and GAIN are exploring ways to make Vitingo™ an economically viable and sustainable product for markets in developing countries.
- Heinz is maintaining a dialogue with GAIN, advising on strategy development among other subjects of common interest.
- Nestlé is in the process of exploring several ideas with GAIN, including additional fortification of Maggi bouillon for Africa, fortification of commonly used sauces in Asia to reach the poorest of the poor, and further fortification of milk products. Currently the company is undertaking an analysis of what the existing deficiencies are, what the best carriers are for fortification, and how best to put them into production to enable fortified foods to reach a wider swath of people. In addition, Nestlé is engaging with agencies and networks in the nutrition community, including the Micronutrient Initiative and the Flour Fortification Initiative, through dialogues facilitated by GAIN.
- Procter & Gamble is discussing opportunities for developing sustainable business models for Nutristar with GAIN, as well as social marketing for the Nutristar project in Bangladesh.
- Tetra Pak is working with GAIN to undertake a study to evaluate the efficacy of its packaged NutriSip drink for schoolchildren. A similar successful focus group study was undertaken in Eastern Cape, South Africa.
- Seaboard hopes to be a market changer in its work with GAIN and UNICEF based on its understanding of the impacts and benefits of fortified flour.

- Unilever is engaged in GAIN-funded programs, including one in Côte d'Ivoire where it is fortifying oil. The company is also co-chairing the GAIN Business Alliance for Food Fortification and represents the BAFF on the GAIN board.

g. Striving for Mutual Benefit

After three years of operations The Global Alliance for Improved Nutrition is in a new phase of activities, shifting towards increased receptivity and appreciation of the tangible contributions to the micronutrient challenge that can be made by the private sector.

Each of the sectors involved in a public-private partnership usually joins anticipating that there will be mutual benefit in such an endeavor, and with wariness of potential risks that may emerge. Multisector partnerships are even more complicated by nature because they usually address a complex issue that requires a multi-pronged systems approach. The solutions that materialize from such relationships usually require joint efforts from sectors that work in vastly different ways, sometimes at different paces, and, though the ideas about the final outcomes are generally the same, each partner may have differing expectations and motivations. This can create both great opportunities and challenges for the players. In striving for mutual benefit, and to positively affect the micronutrient deficiency issue, some positive aspects of the GAIN partnership have been identified.

Working in Partnership with Business: According to the GAIN secretariat, some positive elements of private sector involvement are:

- Its innovative solutions to the issue, technical and research capabilities, and capacity to produce and deliver products
- Its capacity to advocate and communicate widely
- Its capacity to define new business models targeted at the poor
- Its capacity to access decision makers in donor countries and highlight issues
- The fact that GAIN's scale-up is predicated on involvement with the private sector
- Its rigorous reliance on science and proven solutions
- Its ability to help take solutions to scale (through the supply chain and the marketing and distribution skills to reach consumers), a key objective of GAIN
- Its experience and prioritization of monitoring and evaluation of project impact.

Benefits to Business: From a private sector perspective, partnership allows for access to local knowledge, familiarity with local conditions, and funding for issues such as impact assessments and education and consumer awareness campaigns that could not necessarily be justified as solely business-driven. In terms of GAIN itself, companies are sometimes interested in an independent assessment of their fortification programs that require specific technical nutrition competencies not always available within the firm. In some cases, GAIN also becomes a sounding board during the product development process. Other benefits include:

- Supporting markets through GAIN measures and grants
- Network with suppliers, customers, and governments
- Communications and assistance with cause-related marketing
- Market research via data provided by GAIN
- Access to markets for fortified food products
- Insights into latest trends, technologies, and areas for innovation
- Nutrition expertise.

h. GAIN Challenges

After three years of operations, the Global Alliance for Improved Nutrition is in a new phase of activities, shifting toward increased receptivity and appreciation of the tangible contributions to the micronutrient challenge that can be made by the private sector. Previously, the organization had pursued a somewhat legalistic strategy, creating codes of conduct and protecting itself after a review in *The Wall Street Journal*³⁹ said it was pandering to the private sector. As a result of this review, GAIN became inwardly focused and some perceived it to be distrustful of the private sector, despite its multisector mandate.

GAIN has since entered a new phase and has revitalized its focus on public-private partnerships, as noted in a January 2006 *Financial Times* report. It has developed a new program delivery model and a focus area directed specifically at the private sector. These innovating changes being instituted by GAIN's new leadership bode well for the organization. The partnership with the WBI Business, Competitiveness, and Development team also provides access to additional expertise and resources for engagement. GAIN's sustainability and scalability are potentials that are yet to be realized, though its new focus on measuring results holds promise for institutional learning and growth.

39. Rachel Zimmerman. "Bill Gates Plans to Feed the World with Ketchup & Cheeze Whiz," *Wall Street Journal* (May 9, 2002).

Beyond shifts in its own organizational structure, GAIN faces the ongoing challenge of making a largely invisible problem a priority to developing country governments that are grappling with several large-scale health challenges simultaneously. In addition, highlighting the wide-ranging impact of micronutrient deficiency and involving ministries beyond public health has proven difficult. However, GAIN is actively engaging Ministries of Health, for instance through activities such as financial support and technical assistance to the East, Central, and Southern African Health Community (ECSA) in charge of organizing Ministry of Health consultations. Ministries of Health are also mobilized through launching national GAIN programs. Based in Geneva, GAIN also works on mobilizing governments through UN bodies such as the World Health Organization.

Finally, GAIN faces the ongoing challenge of multisector work – forging synergies based on trust, ensuring concurrency in timing and commitment from the various parties, and guarding against mismatched expectations and hidden agendas. To address some of these issues, GAIN invited its alliance partners, for the first time, to a joint meeting in October 2005 to learn more about its strategy, give feedback on lessons, risks, and opportunities, and to identify key areas for greater cooperation. GAIN also established a reference group that will meet and give feedback and advice on GAIN’s progress, but not play a governance role.

VII Conclusion

The Global Alliance for Improved Nutrition is emerging from a transition period that is customary for complex multistakeholder institutions to undergo. After two years of pursuing a traditional development model as it applied to the micronutrient issue, GAIN redirected its focus to a pivotal player in the micronutrient arena: the private sector. GAIN has recently undergone a significant shift and thus it is too early to cull lessons learned and successful program outcomes. It still remains to be seen, therefore, if this multisector partnership approach is the most effective and efficient way to address the issue of micronutrient deficiency. It makes intuitive sense that such a problem involving and impacting all of the sectors would require a cross-sector solution. In addition, since food fortification, by its very nature, depends on the private sector for production, governments for enforcement, and other institutions for access to needed markets, a multisector approach to coordinate and impel this process makes sense. However, many of the barriers to micronutrient fortification are complex; neither cost nor science are the only issues at hand, rather skewed market forces, lack of legal enforcement, and lack of prioritization by governments pose significant hurdles. Addressing and correcting these problems is a complex matter, and currently lack of data and rigorous program results makes it difficult to assess whether GAIN's approach has been effective. However, the organization, cognizant of this, has significantly transformed its processes for greater impact and measurable results.

To that end, GAIN has established a 10-year strategy to address the lack of vitamins and minerals impacting more than two billion people worldwide. Its targets include:

- Reduction of vitamin and mineral deficiency prevalence by 30% in the areas where it supports projects;
- Reaching 1 billion people with fortified food;
- Ensuring that 500 million of the people most in need, such as children and pregnant women, regularly consume fortified foods;
- Achieving these results for less than 25 US cents per person, per year.

VIII Recommendations for Policy Makers and Business Engagement

Policy Makers

- Understand the impact that micronutrient deficiency has on a wide variety of sectors in addition to health – and the ways that this impact, in turn, affects macroeconomic growth.
- Identify ways of addressing micronutrient deficiency in a cost-effective manner, such as public education, subsidized school feeding programs, and product pricing for distribution to the poorest of the poor.
- Identify components of political and legal infrastructure that, if ameliorated, could positively affect micronutrient deficiency. Consider refining and enforcing law to ensure proper fortification and enforcement of product labeling.
- Work with multilateral agencies for lessons learned in other country contexts.
- Create consistent, long-term guidelines to ensure a level playing field and to assure business of a stable future policy landscape, and build the capacity of the public sector to effectively monitor and enforce that level playing field.
- Legislate that fortification of particular foods be compulsory and ensure that industry is consulted. Legislation must be transparent, applied uniformly with penalties for non-compliance, and flexible enough to account for technological advances.

Business

- Consider partnering with organizations that can facilitate product distribution, pricing, and education to the most vulnerable segments of society, facilitating new market development.
- Work in partnership with other companies or sectors to address elements of the micronutrient deficiency issue that are relevant to business, including collective action to strengthen a business environment conducive to business action on vitamin and mineral deficiencies.
- If business has developed products that can positively impact micronutrient deficiency, endeavor to make these product lines sustainable by finding sustainable markets for them; partner with governments and NGOs to shore up distribution to needy populations.

IX Key Questions

Students

1. Is micronutrient fortification really more than a “public good” and a public health issue? Should business be involved? Why or why not?
2. What risks and opportunities are taken and/or created for businesses involved in the micronutrient deficiency issue?
3. What are some of the reasons that GAIN has struggled in its startup phase, and can this be avoided in multisector partnerships? How?
4. Will GAIN fulfill its mandate if it is not scaled up and broadened to other countries?
5. How important is impact assessment? Why?
6. How and why should micronutrient deficiency feature in a list of competing government priorities in a developing economy?

Further research

1. Is a multi-sector partnership a good solution to an issue like micronutrient deficiency?
2. What are some of the positives and what are some of the drawbacks to this structure?

IX Ten Key Lessons on Partnership

- 1.** Create trust among partners at the outset through awareness raising and respect for each party's agenda.
- 2.** Understand each partner's resource capacities and constraints.
- 3.** Identify and leverage organizational core competencies.
- 4.** Avoid becoming overly bureaucratic; aim to balance accountability process with timely responses to proposals and funding requests.
- 5.** Identify and pursue feasible program objectives; manage internal and external expectations.
- 6.** Establish clear reporting, measurement, and cooperation systems within the partnership.
- 7.** Establish targets and allocate responsibility for reaching those targets.
- 8.** Identify strong and insightful leaders within the organization who can focus it on short-, medium-, and long-term goals.
- 9.** Identify leaders/champions in the field and in the political arena to advocate, help focus attention, and underscore the issue's importance.
- 10.** Underscore that the social issues around which these partnerships emerge are largely ones for governments to solve – engage in cross-sector thinking about how to enable government to more effectively address these issues in the long term, thereby building sustainability into the system.

Bibliography

Abrams, Steven A. Alex Mushi, David C. Hilmers, Ian J. Griffin, Penni Davila, and Lindsay Allen. "A Multinutrient-Fortified Beverage Enhances the Nutritional Status of Children in Botswana," *Journal of Nutrition* 133 (2003): 1834-1840

Asian Development Bank. *Food Fortification in Asia: Improving Health and Building Economies. ADB Nutrition and Development Series No. 7.* Manila, Philippines: Asian Development Bank, 2004.

<<http://www.adb.org/Documents/Books/nutrition/Food-Fortification-Asia/default.asp>> Accessed May 24, 2006.

Barro, Robert J. *Health and Economic Growth.* Washington, DC: Pan American Health Organization, 1996. <www.paho.org/English/HDP/HDD/barro.pdf> Accessed May 30, 2006.

Bhaskaram, P. "Micronutrient Malnutrition, Infection, and Immunity: An Overview." *Nutrition Review* 60 (May 2002): S40-S45.

Bouis, HE. "Micronutrient Fortification of Plants through Plant Breeding: Can It Improve Nutrition in Man at Low Cost?" *Proceedings of the Nutrition Society* 62 (May 2003): 403-411.

Copenhagen Consensus Center. *The Results of Copenhagen Consensus 2004.* <<http://www.copenhagenconsensus.com/Default.aspx?ID=699>> Accessed May 24, 2006.

Danone Institute. *The Danone International Prize for Nutrition.* <http://www.danoneinstitute.org/danone_institute_prize_for_nutrition/index.php> Accessed May 30, 2006.

Demment, Montague W., Michelle M. Young, and Ryan L. Sensenig. "Providing Micronutrients through Food-Based Solutions: A Key to Human and National Development." *Journal of Nutrition.* 133 (November 2003): 3879S.

Fogel, Robert W. "Nutrition, Physiological Capital and Economic Growth: Theories, Evidence and Policies." Lecture presented at the *Senior Policy Seminar on Health, Human Capital and Economic Growth: Theory, Evidence and Policies.* Sponsored by the Pan American Health Organization (PAHO) and the Inter-American Development Bank (IADB). Washington, DC: PAHO Headquarters. October 3, 2002.

Global Alliance for Improved Nutrition and Asian Development Bank. *The Leaders of Tomorrow, Invest in Them Today.* Geneva, Switzerland and Manila, The Philippines: GAIN and ADB. <<http://www.gainhealth.org/gain/ch/en-en/file.cfm/leadersoftomorrow.pdf?contentID=1186>> Accessed May 25, 2006.

Global Alliance for Improved Nutrition. *Business and Consumer Program Goals*. <http://www.gainhealth.org/gain/ch/en-en/index.cfm?page=/gain/home/about_gain/organization/organizationboard_directors> Accessed May 30, 2006.

_____. *GAIN – Board of Directors*.

<http://www.gainhealth.org/gain/ch/en-en/index.cfm?page=/gain/home/about_gain/organization/organizationboard_directors> Accessed May 30, 2006.

_____. *Progress Report*. <http://www.gainhealth.org/gain/ch/en-en/index.cfm?page=/gain/home/about_gain/progress_report> Accessed May 30, 2006.

_____. *Challenge*. <http://www.gainhealth.org/gain/ch/en-en/index.cfm?page=/gain/home/why_food_fortification/challenge> Accessed May 24, 2005.

_____. *Mali*. <<http://www.gainhealth.org/gain/ch/en-en/index.cfm?contendid=0908BA22-C29E-A219-C62AOB3A9CIB432A>> Accessed June 5, 2006.

Goldberg, Ray A. “Nestle’s Milk District Model: Economic Development for Value-Added Food Chain and Improved Nutrition.” *Harvard Business School Case* 906-406 (2005).

Heinz Infant Nutrition Institute. Available at <http://www.hini.org/HINI/index.html>, accessed May 30, 2006.

Howson, Christopher P, Eileen T. Kennedy, and Abraham Horwitz, Editors. *Prevention of Micronutrient Deficiencies: Tools for Policymakers and Public Health Workers*. Committee on Micronutrient Deficiencies, Institute of Medicine. Washington, DC: The National Academies Press, 1998.

Ianescu-Somers, Aileen. *The Business Case for Sustainability – Food and Beverage Sector Report*. IMD 203-9. <<http://www01.imd.ch/documents/research/bcs/Food%26BeverageReport041103.pdf>> Accessed May 24, 2005.

Institute of Medicine Staff (Editor). *Prevention of Micronutrient Deficiencies: Tools for Policymakers and Public Health Workers*. Washington, DC, USA: The National Academies Press, 1998.

Kruger, P.E. “Eastern Cape Nutrition Program: The Efficacy of a Cost Effective Supplement on the Scholars in the Graaf Reinet Region.” Pretoria, South Africa: Institute for Sport Research, University of Pretoria, 2005.

Latham, Michael C., Deborah M. Ash, Diklar Makola, Simon R. Tatala, Godwin D. Ndossi, and Haile Mehansho. “Efficacy Trials of a Micronutrient Dietary Supplement in Schoolchildren and Pregnant Women in Tanzania.” *Journal of Nutrition* 133 (2003): 1339-1346.

Maberly, Glen F., and Jack Bagriansky. *Public-Private Collaboration in Food Fortification: Sharing Risk and Reward*. <www.sph.emory.edu/PAMM/pubpriv.htm> Accessed May 30, 2006.

- McKay, Betsy. "Procter & Gamble, Coca-Cola Formulate Vitamin Drinks for Developing Countries," *Wall Street Journal*, November 27, 2001, Marketplace. Micronutrient Initiative. *Fortification Handbook* <http://www.micronutrient.org/resources/publications/Fort_handbook.pdf> Accessed March 2005.
- Mishaan, Ana M. Avalos, Nelly Zavaleta, Ian J. Griffin, David C. Hilmers, Keli M. Hawthorne, and Steven A. Abrams. "Bioavailability of Iron and Zinc from a Multiple Micronutrient-Fortified Beverage," *Journal of Pediatrics* 145 (2004): 26-31.
- Moss, Ralph. Vice President, Government Affairs, Seaboard. Interview with the author, April 12, 2005.
- Nelson, Jane. *Business as Partners in Development: Building Wealth for Countries, Companies, and Communities*. London: Prince of Wales International Business Leaders Forum, The World Bank, and UNDP, 1996.
- Prahalad, C. K. *The Fortune at the Bottom of the Pyramid*. Upper Saddle River, NJ: Wharton Publishing, 2005.
- Sprinkles Global Health Initiative. *Frequently Asked Questions*. Available at http://www.supplefer.com/about_sprinkles/faqs.html, accessed May 30, 2006.
- Strauss, John, and Duncan Thomas. "Health, Nutrition, and Economic Development." *Journal of Economic Literature*. Nashville, 36 (June 1998): 766.
- Tennyson, Ros. *Partnering Toolbook*. London: Prince of Wales International Business Leaders Forum and Global Alliance on Improved Nutrition. London and Geneva: IBLF, 2003. <<http://www.iblf.org/docs/PartneringToolbook.pdf> >
- Tetra Pak. *The Role of the FfDO*. <http://www.tetrapak.com/ffdo/content/frset_main.asp?navid=119> Accessed May 30, 2006.
- The World Bank. *Enriching Lives: Overcoming Vitamin and Mineral Malnutrition in Developing Countries*. Washington, DC: The World Bank, 1994.
- _____. *Repositioning Nutrition as Central to the Development Agenda: A Strategy for Large-Scale Action*. Washington, DC: The World Bank, 2006. <<http://www.reliefweb.int/library/documents/2006/wb-global-2mar.pdf>> Accessed May 25, 2006.
- _____. *Vitamin and Mineral Deficiency: A Global Progress Report: A Partnership Drive to End Hidden Hunger in Sub-Saharan Africa* <www.worldbank.org/wbi/corpgov/csr/foodindustry2004/pdf/ssa.pdf> Accessed May 23, 2005.
- _____. *Why Tackle Nutrition?* Washington, DC: The World Bank, 2005.

UN Millennium Project. *Task Force on Hunger. Halving Hunger: It Can Be Done.* London: Earthscan, 2005. Available at <http://www.unmillenniumproject.org/documents/Hunger-highres-complete.pdf>, accessed May 25, 2006.

UNICEF and The Micronutrient Initiative. *Vitamin & Mineral Deficiency: A Challenge to the World's Food Companies.*

<http://www.unicef.org/china/VMD_for_Food_Industry_in_English_-_25_August.pdf> accessed May 30, 2006.

UNICEF. *Vitamin & Mineral Deficiency: A Global Progress Report.* New York: UNICEF, 2004.

<<http://www.unicef.org/media/files/vmd.pdf#search='Vitamin%20and%20mineral%20deficiency%3A%20A%20Global%20Progress%20Report'>> Accessed May 24, 2006.

Unilever. *Herbert Smorenburg – Africa.*

<http://www.unilever.com/ourvalues/environmentandsociety/people_profiles/herbert_smorenburg.asp> Accessed May 30, 2006.

Van Ameringen, Marc. Executive Director, Global Alliance for Improved Nutrition. Interview with the author, January 2006.

World Business Council for Sustainable Development. Procter & Gamble Combating Hidden Hunger.

<http://www.wbcd.org/web/publications/case/nutridelight_full_case_final_web.pdf> Accessed May 30, 2006.

World Health Organization. *Vitamin A*

<<http://www.who.int/vaccines/en/vitamina.shtml>> Accessed June 30, 2005.

_____. *Micronutrients.*

<<http://www.who.int/nutrition/topics/micronutrients/en/index.html>> Accessed May 25, 2006.

Zimmerman, Rachel. "Bill Gates Plans to Feed the World with Ketchup & Cheeze Whiz," *Wall Street Journal* (May 9, 2002).

Interviews:

Coca Cola Nutrition Institute

Steven Abrams, MD

Joan Carter, RD

Susan Roberts, RN

Don Short

Global Alliance on Improved Nutrition (GAIN)

Marc Van Ameringen, Executive Director

Bérangère Magarinos, Manager, Business and Consumer Program

Nestlé

Niels Christiansen, VP, Public Affairs

Procter & Gamble

Don Compton, MVIC R&TD External Business Development & Licensing

Seaboard

Ralph Moss, VP Public Affairs

Tetrapak

Bjorn Wille

World Bank

Michael Jarvis, Program Specialist, Business, Competitiveness and Development,
World Bank Institute

Appendix 1: GAIN in Mali⁴⁰

PROJECT NAME: DOUMOUNI NAFAMA COOKING OIL FORTIFICATION PROJECT

Project Description: The Project is part of the national program to control vitamin and mineral deficiencies in the population of Mali. The Project will support the implementation of a national food fortification effort to fortify cottonseed oil with vitamin A. The Project will focus on the fortification of domestically produced cottonseed oil that is regularly consumed by the Malian people, including the primary target population of low-income pregnant women and women of child-bearing age. GAIN funding will supplement cash and in-kind contributions from the Government of Mali and other donor agencies.

Project Goal: The goal is to fortify with vitamin A a total of 40,000 MT of cottonseed oil a year within three years thereby contributing to the achievement of the goal of reducing the prevalence of vitamin A deficiency in pregnant women and women of child-bearing age to 30 percent by 2007. The assumption is that the Project will provide 7.7 million person-years of coverage.

Principal Outputs: 40,000 MT of cottonseed oil fortified per year

Coverage: By end Year 3, total population reached: 7,700,000

Food Vehicle: Cottonseed oil

Fortificant: Vitamin A

Start Date: 01/09/2004

40. Global Alliance for Improved Nutrition. *Mali*.
<<http://gainhealth.org/gain/ch/en-en/index.cfm?contentid=0908BA22-C29E-A219-C62A0B3A9CIB432A>>
Accessed June 5, 2006.

The Corporate Social Responsibility Initiative at the John F. Kennedy School of Government, Harvard University

The CSR Initiative at the John F. Kennedy School of Government is a multidisciplinary program that undertakes research, education, and outreach activities to enhance the public role of private enterprise and develop the next generation of leaders. It focuses on exploring the intersection of corporate responsibility, corporate governance and strategy, public policy, and the media. The CSR Initiative is a cooperative effort among the Kennedy School's Mossavar-Rahmani Center for Business and Government, the Center for Public Leadership, the Hauser Center for Non-Profit Organizations, and the Joan Shorenstein Center on the Press, Politics and Public Policy. It was founded in 2004 with the support of Walter H. Shorenstein, Chevron Corporation, The Coca-Cola Company, and General Motors.

Acknowledgments

Key contributions to this paper were made by Jane Nelson from the Kennedy School, Bérange Magarinos and Barbara McDonald from GAIN, and Michael Jarvis from the World Bank. Many thanks also to Steven Abrams, Joan Carter, Susan Roberts, and Don Short at Coca-Cola, Niels Christiansen at Nestlé, Don Compton at Procter & Gamble, Ralph Moss at Seaboard, and Bjorn Wille and Ulla Holm at Tetra Pak.

Tamara Bekefi

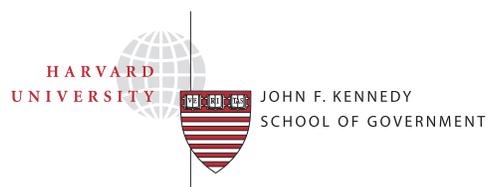
As a Research Fellow and Manager, Business and International Development Research at Harvard's Kennedy School of Government Corporate Social Responsibility Initiative, Bekefi analyzes the intersection of business and international development including risk management, small and medium enterprise development and competitiveness, and multisector partnerships.

Previous to the Kennedy School, Bekefi worked for the oil industry group IPIECA, ExxonMobil, Phillips-Van Heusen, KLD—a social investment research and analysis firm, and Orientation Global Networks—an international telecommunications firm. She received her M.A. from the Fletcher School of Law and Diplomacy with a concentration in international business and political risk and her B.A. summa cum laude from McGill University.

The views expressed in this report are those of the author(s) and do not necessarily reflect those of the John F. Kennedy School of Government or Harvard University.

Copyright belongs to the author and the report may be cited as:

Bekefi, Tamara. 2006. "Micronutrient Deficiency and the Global Alliance for Improved Nutrition: Lessons in Multisectoral Partnership." Corporate Social Responsibility Initiative Report No. 7. Cambridge, MA: John F. Kennedy School of Government, Harvard University.



HARVARD
UNIVERSITY

JOHN F. KENNEDY
SCHOOL OF GOVERNMENT