**THE FOOD SECURITY OF**

**INFANTS AND YOUNG CHILDREN**

George Kent

University of Hawai'i (Emeritus)

(February 24, 2014)

In early 2014 the United Nations’ Committee on World Food Security called on its High Level Panel of Experts on Food Security and Nutrition to study critical and emerging issues (CFS 2014a). The food security of infants and young children should be recognized as an important part of the food security agenda, especially because of new challenges resulting from the globalization of the baby food industry.

The Committee’s website opens with this definition:

Food security exists when all people, at all times, have physical, social and economic access to sufficient safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life (CFS 2014b).

Despite their broad overviews, it is curious that the Committee and the associated annual reports on *The State of Food Insecurity in the World* (CFS 2014c; FAO 2013) give so little attention to the food security of infants and young children, the most vulnerable segment of the human population. The World Health Organization and the United Nations Children’s Fund do a great deal of work on infant and young child nutrition. Thus, it is not clear why the Committee, the apex organization on food security in the United Nations system, neglects it, as if the food security of infants and young children were not an important part of the larger issue.

The risks vary in different parts of the world, and they change over time, but there is no doubt the risks are high. It has been estimated, “undernutrition in the aggregate—including fetal growth restriction, stunting, wasting, and deficiencies of vitamin A and zinc along with suboptimum breastfeeding—is a cause of 3·1 million child deaths annually or 45% of all child deaths in 2011 (Black 2013).

Like others, *The Lancet* tends to focus on child malnutrition in low- and middle-income countries. However, there is also child malnutrition in high-income countries. One study estimated, “If 90% of US families could comply with medical recommendations to breastfeed exclusively for 6 months, the United States would . . . prevent an excess 911 deaths, nearly all of which would be in infants . . . (Bartick 2010)”. Many health outcomes are worse for formula-fed infants than for breastfed infants in high-income countries (Ip et al. 2007).

The malnutrition that shows up as overweight has been increasing at an alarming rate in many populations, usually linked to increased consumption of processed foods. The tendency toward being overweight often begins in childhood (Cunningham et. al. 2014). Infant formula, many people’s first processed food, might be a significant factor leading to overweight in childhood and throughout the lifespan (Rose et al. 2006; WIC 2006).

Malnutrition in high-income countries is less widespread and less intense than in poor countries, but malnourished children require attention no matter where they live. Categorizing countries by their average income levels masks the fact that most countries have sub-populations with high incomes and others with low incomes. To treat everyone in India as if they were poor or everyone in the U.S. as if they were rich would be a serious error.

Even if there were no child malnutrition in high-income countries, data on their nutrition status should be collected in order to complete the global data sets and allow comparisons between various populations.

Countries change over time. Many countries that once could sensibly be categorized as poor are now described as “emerging economies”, with a substantial middle class. These subgroups have money to spend, thus attracting purveyors of many different kinds of goods. Some of these products and their sellers are from inside the country and some are from outside. Much of the manufacturing and marketing of infant foods is based on joint-venture partnerships involving both insiders and outsiders. In much of the world, localized food systems are being overrun by outside interests. The accountability that once was based on direct contact between food producers and consumers is evolving into a global food system that is accountable to no one.

This anarchy is especially clear in the case of formula. No one knows how much formula for infants and young children is traded internationally. Even if those data were available, they would not reveal the extent to which formula is promoted and supplied through international joint ventures. Cow’s milk and other basic ingredients might be sourced locally, and the formula might be manufactured in the destination country, but all that might be controlled, more or less invisibly, by joint ventures based elsewhere. This sort of activity does not show up in the food trade data published by the Food and Agriculture Organization of the United Nations.

Some people might have thought that with the adoption of the International Code of Marketing of Breast-milk Substitutes (WHO 1981), the need for regulation at the global level was met. However, regulation needs to be strengthened in several ways:

First, it needs to be made clear that the Code applies to all countries, not just low-income countries.

Second, the Code needs to be updated to recognize that some governments promote the use of infant formula in a way that is contrary to the principles set out in the Code.

Third, there is a need to clarify and strengthen the application of the Code in international trade and other international relations.

Fourth, the Code is sometimes viewed as applying only to infant formula, so its applicability to other breast-milk substitutes needs to be clarified.

Fifth, the Code should be adapted and placed into the international human rights framework (Kent 2011, 103-107).

There is little research on patterns of consumption of formula or of its impacts on the health of infants and the adults they will become. Some countries are attentive to short-term safety issues such as contamination, but there is no systematic tracking of safety issues at the global level.

Some countries, such as China, give a great deal of attention to the safety of formula, but do little to ensure its nutritional adequacy (Kent 2012). In the United States, the Food and Drug Administration says it intends to adopt new standards that will “ensure healthy growth of infants (FDA 2014a)”, but that is a narrow and limited measure of infant formula’s nutritional adequacy.[[1]](#footnote-1) When one breastfeeding advocacy group documents “21 Dangers of Infant Formula” (WABA 2012), monitoring only infants’ physical growth for as little as fifteen weeks hardly provides the kind of quality assurance that is needed. Short-term physical growth alone cannot be an adequate indicator of the many qualities of infant formula that ought to be required.

The issue of nutritional adequacy has been neglected. Indeed, in the preparation of its “interim final rule” regarding infant formula, the FDA acknowledged:

Because, prior to this interim final rule, there were no established quality factors and no quality factor requirements, a formula manufacturer was not required to demonstrate to FDA that the formula supports normal physical growth or that its protein was of sufficient biological quality (FDA 2014b, 7935).

The lack of quality control in the past might come as a surprise. Looking to the future, it might also be surprising to learn that manufacturers of infant formulas that are not new are asked to *voluntarily* submit quality factor data to the FDA, and there are no specified consequences for failing to do so.

For new formulas, the standards in the U.S. are allowed to be different for formulas that are intended for export, rather than for domestic consumption. Why should manufacturers be permitted to use different standards for formulas that are exported? What are the responsibilities of national governments with regard to people beyond their national jurisdictions (Galtry 2013)?

Many countries have little capacity to ensure the safety and nutritional adequacy of formula used by their infants and young children. With the increasing globalization of the formula market through trade and joint ventures, there is a clear need for attention from the global level. To illustrate, little is known about the likely health impacts of recent efforts to promote infant formula based on goat milk (PRNewswire 2014). What are the risks to which infants will be exposed? Who should carry what responsibilities for the protection of the food security of vulnerable infants?

In some places there are serious national commitments to support breastfeeding (UNICEF 2013). However, there is intense international promotion of formula pushing in the opposite direction. In the Asia-Pacific region the market for baby food grew to US$14.7 billion in 2011 (Transparency Market Research 2013), and the rapid growth is expected to continue:

In 2013 the infant formula market is still growing rapidly with the development of markets like Asia, particularly China with a growth rate close to 20% p.y, Eastern Europe, and in a lesser extend Middle East and Latin America. The development of the market is linked with the economic growth of those countries and its corollary the growing number of working women (UBIC 2014).

In the Middle East and North Africa, the baby food market has been growing at a compound annual growth rate of 11.2 per cent during 2007-2012. Infant formula is recognized as the primary driver of the entire baby food market in the region (Trade Arabia 2014).

According to one report, US$41 billion was spent on milk formula globally in 2013 (Bandy 2014).

In this world of unconstrained promotion, the deficiencies of infant formula are instead presented as assets, “the opportunity represented by the gap between formula and mother’s milk (UBIC 2014).” For example, it is claimed that . . .

The need for infant formulae enriched with DHA and ArA for non-breast-fed infants has been recognized by various official bodies including FAO/WHO who recommend that all infant formulae should contain DHA and ArA (UBIC 2014).

Where have FAO and WHO said this? The reality is that there is little evidence to support the addition of DHA and ARA fatty acids to infant formula (Kent 2014; Starling 2014). Apparently these and many other additives to modern processed foods are offered more for the profits they generate than for the health benefits they provide.

There is a disturbing pattern of claims that new versions of formula represent great improvements, but with no acknowledgment that previous versions were deficient.

The promoters of formula highlight the huge economic benefits likely to accrue to the sellers, but their analyses give no attention to the likely health consequences. If there were little difference in health impacts between breastfeeding and feeding with formula, this would not be an important concern. But the weight of evidence is clear: when compared with breastfeeding, the use of formula results in increased mortality and morbidity, and increased health care and other costs in every type of population.

Threats to the food security of infants and young children are now being globalized at an unprecedented pace. There is a need for worldwide monitoring and regulation of the baby food industry. National governments and international agencies should ensure that new parents and health workers are provided fair, evidence-based, user-friendly information that would help them make well-informed choices about how their children should be fed. While other elements of food systems might be well controlled locally, the baby food industry needs global governance to ensure the food security of infants and young children everywhere.

**Bibliography**

Bandy, Lauren 2014. *Toddler Milk Formula: The Hello Kitty of Packaged Food. Euromonitor International. February 14.* <http://blog.euromonitor.com/2014/02/toddler-milk-formula-the-hello-kitty-of-packaged-food.html>

Bartick, Melissa and Arnold Reinhold 2010. “The burden of suboptimal breastfeeding in the United States: a pediatric cost analysis.” *Pediatrics.* 125(5):e1048-56. <http://pediatrics.aappublications.org/content/125/5/e1048.long>

[Black RE](http://www.ncbi.nlm.nih.gov/pubmed?term=Black%20RE%5BAuthor%5D&cauthor=true&cauthor_uid=23746772), [Victora CG](http://www.ncbi.nlm.nih.gov/pubmed?term=Victora%20CG%5BAuthor%5D&cauthor=true&cauthor_uid=23746772), [Walker SP](http://www.ncbi.nlm.nih.gov/pubmed?term=Walker%20SP%5BAuthor%5D&cauthor=true&cauthor_uid=23746772), [Bhutta ZA](http://www.ncbi.nlm.nih.gov/pubmed?term=Bhutta%20ZA%5BAuthor%5D&cauthor=true&cauthor_uid=23746772), [Christian P](http://www.ncbi.nlm.nih.gov/pubmed?term=Christian%20P%5BAuthor%5D&cauthor=true&cauthor_uid=23746772), [de Onis M](http://www.ncbi.nlm.nih.gov/pubmed?term=de%20Onis%20M%5BAuthor%5D&cauthor=true&cauthor_uid=23746772), [Ezzati M](http://www.ncbi.nlm.nih.gov/pubmed?term=Ezzati%20M%5BAuthor%5D&cauthor=true&cauthor_uid=23746772), [Grantham-McGregor S](http://www.ncbi.nlm.nih.gov/pubmed?term=Grantham-McGregor%20S%5BAuthor%5D&cauthor=true&cauthor_uid=23746772), [Katz J](http://www.ncbi.nlm.nih.gov/pubmed?term=Katz%20J%5BAuthor%5D&cauthor=true&cauthor_uid=23746772), [Martorell R](http://www.ncbi.nlm.nih.gov/pubmed?term=Martorell%20R%5BAuthor%5D&cauthor=true&cauthor_uid=23746772), [Uauy R](http://www.ncbi.nlm.nih.gov/pubmed?term=Uauy%20R%5BAuthor%5D&cauthor=true&cauthor_uid=23746772); [Maternal and Child Nutrition Study Group](http://www.ncbi.nlm.nih.gov/pubmed?term=Maternal%20and%20Child%20Nutrition%20Study%20Group%5BCorporate%20Author%5D) 2013. “Maternal and child undernutrition and overweight in low-income and middle-income countries.” *The* *Lancet*. August. 382(9890):427-51. doi: 10.1016/S0140-6736(13)60937-X. <http://www.thelancet.com/journals/lancet/article/PIIS0140-6736%2813%2960937-X/fulltext?_eventId=login>

CFS 2014a. *Critical and Emerging Issues for Food Security and Nutrition*. Committee on World Food Security. <http://www.fao.org/cfs/cfs-hlpe/critical-and-emerging-issues/en/>

CFS 2014b. *Committee on World Food Security*. Website. <http://www.fao.org/cfs/cfs-home/en/>

CFS 2014c. *Committee on World Food Security. Fortieth Session. Rome, Italy, 7-11 October 2013. Report.* Rome: Food and Agriculture Organization of the United Nations. CFS 2013/40 REPORT. <http://www.fao.org/docrep/meeting/029/mi744e.pdf>

Cunningham, Solveig A.; Michael R. Kramer; and K. M. Venkat Narayan 2014. “Incidence of Childhood Obesity in the United States.” *New England Journal of Medicine*. January 30. 370:430-411. DOI: 10.1056/NEJMoa1309753. <http://www.nejm.org/doi/full/10.1056/NEJMoa1309753>

FAO 2013. *The State of Food Insecurity in the World.* Rome: Food and Agriculture Organization of the United Nations. <http://www.fao.org/publications/sofi/en/>

FDA 2014a. *Updated FDA requirements for infant formula will maintain high-quality standards and help ensure healthy growth of infants*. U.S. Department of Health and Human Services, U.S. Food and Drug Administration. FDA News Release. February 6. <http://www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/ucm384886.htm>

FDA 2014b. “Current Good Manufacturing Practices, Quality Control Procedures, Quality Factors, Notification Requirements, and Records and Reports, for Infant Formula.” *United States Federal Register*. Vol. 79, No. 27. February 10. <https://federalregister.gov/a/2014-02148>

Galtry, Judith 2013. “Punching Above Its Weight: Does New Zealand’s Responsibility for Protecting, Promoting, and Supporting Breastfeeding Extend beyond Its Own Borders?” *Journal of Human Lactation*. Vol. 29, No. 2, May. pp. 128-131. <http://jhl.sagepub.com/content/29/2/128.extract>

Ip, Stanley; Mei Chung; Gowri Raman; Priscilla Chew; Nombulelo Magula; Deirdre DeVine; Thomas Trikalinos; and Joseph Lau 2007. *Breastfeeding and Maternal and Infant Health Outcomes in Developed Countries.* Rockville, MD: Agency for Healthcare Research and Quality. April. <http://www.ncbi.nlm.nih.gov/books/NBK38337/>

Kent, George 2011. *Regulating Infant Formula.* Amarillo, Texas: Hale Publishing.

Kent, George 2012. “The Nutritional Adequacy of Infant Formula.” *Clinical Lactation*, Vol. 3, No. 1, pp. 21-25. <http://www2.hawaii.edu/~kent/NutritionalAdequacy.pdf>

Kent, George 2014. “Regulating fatty acids in infant formula: critical assessment of U.S. policies and practices.” *International Breastfeeding Journal*, 9:2 doi:10.1186/1746-4358-9-2. <http://www.internationalbreastfeedingjournal.com/content/9/1/2>

PR Newswire 2014. *China Goat Milk Infant Formula Industry Report*. <http://www.prnewswire.com/news-releases/china-goat-milk-infant-formula-industry-report-242960161.html>

Rose, Donald J.; Nicholas Bodor; and Mariana Chilton 2006. “Has the WIC Incentive to Formula-Feed Led to an Increase in Overweight Children?” *Journal of Nutrition*. April. 136:1086-1090. <http://jn.nutrition.org/search?fulltext=has+the+wic+incentive&submit=yes&x=11&y=8>

Starling, Shane 2014. *EFSA finds few benefits for infant formulas and other milks.* NUTRA Ingredients. January 30. <http://www.nutraingredients.com/Regulation/EFSA-publishes-report-that-finds-few-benefits-for-infant-formulas-and-other-milks>

The Lancet 2013. *Maternal and Child Nutrition*. June 6. <http://www.thelancet.com/series/maternal-and-child-nutrition>

Trade Arabia 2014. *Mena Baby Food Market Booming*. Trade Arabia Business News Information. February 16. <http://www.tradearabia.com/news/REAL_252009.html>

Transparency Market Research 2013. *Asia Pacific Baby Food Market—Global Industry Analysis, Size, Share, Growth, trends and Forecast, 2013-2019*. Albany, New York. October 20. <http://www.mamasgotwanderlust.com/wordpress/china/asia-pacific-baby-food-market-global-industry-analysis-size-share-growth-trends-and-forecast-2013-2019.html>

UBIC Consulting 2014. *Ingredients for the World Infant Formula Market*. <http://www.ubic-consulting.com/template/fs/documents/Nutraceuticals/Ingredients-in-the-world-infant-formula-market.pdf>

UNICEF 2013. *Breastfeeding on the Worldwide Agenda*. New York: United Nations Children’s Fund. <http://www.unicef.org/eapro/breastfeeding_on_worldwide_agenda.pdf>

WABA 2012. *21 Dangers of Infant Formula*. World Alliance for Breastfeeding Action. <http://www.waba.org.my/whatwedo/advocacy/pdf/21dangers.pdf>

WHO 1981. *International code of marketing of breast-milk substitutes*. Geneva, Switzerland: World Health Organization. [http:/e Co/www.who.int/nutrition/publications/code\_english.pdf](http://www.who.int/nutrition/publications/code_english.pdf) Also see subsequent related World Health Assembly Resolutions at <http://www.ibfan.org/english/resource/who/fullcode>

WIC 2006. Breastfeeding: *The First Defense Against Obesity*. California WIC Association and UC Davis Human Lactation Center. <http://calwic.org/storage/documents/wellness/bf_paper1.pdf>

1. Details on the prescribed methods of growth measurement are available at FDA’s website at <http://www.fda.gov/Food/GuidanceRegulation/GuidanceDocumentsRegulatoryInformation/InfantFormula/ucm384595.htm> [↑](#footnote-ref-1)