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## STANDING COMMITTEE ON NUTRITION

# Meeting the Challenge to Improve Complementary Feeding



# SCN NEWS

A PERIODIC REVIEW OF DEVELOPMENTS IN INTERNATIONAL NUTRITION

## SCN NEWS

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## SCN NEWS

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# CHAIR'S ROUND UP

This issue of *SCN News* focuses on the critical period of complementary feeding, and its importance to achieving the Millennium Development Goals (MDGs). Dr Chessa Lutter, from the Pan American Health Organization, has compiled a series of articles which depicts the challenges and possibilities to improving complementary feeding for young children. The contributions are from multi-lateral agencies, nongovernmental organizations and civil society—all key partners in delivering programmes and formulating effective policies. The MDGs have set a target of reducing child malnutrition and mortality, therefore, this is an opportune time for the SCN community to move complementary feeding to the top of the development agenda.

This issue also sees the start of a series of interviews with former SCN Chairs. Recently, Dr Namanga Ngongi, SCN Chair from January 2001 to July 2002, sat down with the *SCN News* Editor to discuss what he sees as major achievements by the SCN, the MDGs, and his role as UN Special Representative in the Democratic Republic of Congo. Under his leadership, the SCN expanded its role from a forum for academic discussions to a leader in nutrition policy advocacy. Dr Ngongi has now returned to his home in Cameroon, but remains active in promoting nutrition and community development. In the next issue, *SCN News* will catch up with Sir Richard Jolly, SCN Chair from 1995 to 2000.

The 31<sup>st</sup> Session will be held on 22—26 March 2004, at the United Nations, New York. The Session will open with a Symposium on Nutrition and the MDGs, which will act as a catalyst for the week's discussions. Conventionally, nutrition is seen as integral to the first of the MDGs—on hunger and poverty—however, nutrition is also instrumental to achieving other MDGs, especially those relating to improvements in primary education, improved gender equity, reduced risk of child mortality, improved maternal health, and an improved ability to combat disease. Many thanks to the 31<sup>st</sup> Session Planning Committee for all their hard work in organizing this event.

The *Fifth Report on the World Nutrition Situation* will also be launched during the 31<sup>st</sup> Session. This report breaks new ground by making the argument that nutrition plays an essential and integral role in reaching all the MDGs. I congratulate the Fifth Report Taskforce for their time and superb effort in assembling this report.

I was speechless when first told I had been awarded the World Food Prize 2003 and very proud to accept it in October. In my acceptance speech I spoke about the importance and impact educating girls has on combating malnutrition and improving development. I feel so strongly about this that I have dedicated my prize to the Friends of the World Food Program to put into a fund for girl's education and literacy for women. More information can be found at [www.worldfoodprize.org](http://www.worldfoodprize.org) and [www.friendsofwnfp.org](http://www.friendsofwnfp.org).

Congratulations to Dr Bruno de Benoist who was named Director, ad interim, of Nutrition for Health and Development, WHO. The SCN looks forward to continued collaboration with Dr de Benoist's team. Best wishes also go to Dr Joseph Hunt who recently retired from the Asian Development Bank.

A hearty thank you to all who participated in the readership survey on the SCN's sectoral briefs, *Nutrition: A Foundation for Development*. Your responses will help ensure future revisions of the briefs are more effective, comprehensive and easy to use.

Lastly, I look forward to working with you in 2004, and to seeing many of you in New York in March.

*Catherine Bertini*

# SCN SPOTLIGHT

*On 8 December 2003, former SCN Chair, Dr Namanga Ngongi, graciously provided the following interview to **SCN News**. Dr Ngongi has now returned to his home in Cameroon, but promised **SCN News** that he would stay active in promoting nutrition, both in his own community and internationally. We thank Dr Ngongi for all his leadership during his time as SCN Chair.*

***Dr Ngongi, you were SCN Chair from January 1, 2001 until July 31, 2002: what stands out as the SCN's most important and memorable achievement during this time?***

Two things stand out during my time as Chair of the SCN. The first was the Symposium on Nutrition and HIV/AIDS in Nairobi in 2000. It sounded a little far fetched at the time, but more and more people are now convinced of the linkage between nutrition and HIV/AIDS. The SCN resolution on Nutrition and HIV/AIDS was a real wake-up call in that direction. During our stay in Nairobi, I visited some hospitals where 60% of the beds were occupied by people suffering from HIV/AIDS. You could see these patients were malnourished. Further, there is evidence of the link between opportunistic diseases, HIV/AIDS and nutrition. It does not take much scientific research to understand that the human body has a lesser chance of resisting disease when it is malnourished. This was a major breakthrough and I am glad that the SCN took the lead at that time. The second most memorable achievement was the acceleration of the capacity building initiative of the SCN. We are all aware of the work being done by the Working Group on Capacity Development led by Dr Cutberto Garza and colleagues. I believe they have made great progress in encouraging SCN members, especially in Africa, as well as Member States, on focusing on building capacity in their own people. This is especially important at the community level to better tackle nutrition problems.

***With the adoption of the Millennium Development Goals, what do you think has changed in the perception of nutrition, both by the nutrition practitioners and the development community as a whole?***

Today the SCN has moved past arguments amongst academics and scientists and is breaking through into the area of policy-making. This policy direction is really something that needs to be reinforced. Every nutritionist is already convinced of the importance of nutrition, so obviously just talking to nutritionists will not make changes at the policy level. There is now a greater awareness that the constituency of the SCN should be broadened to include those working in policy engineering. Impact is made by influencing the policy-makers of the importance of good nutrition and not just reducing hunger.

***Is nutrition finally coming to the forefront of the development agenda?***

I would say nutrition is creeping its way towards the forefront. Still, the debate is very much centred around hunger. Nutrition and hunger are not totally separate, but they are not identical either. You have countries that do not have real hunger problems but where malnutrition is very serious, especially, micronutrient malnutrition. It is not just a lack of hunger that corrects all nutrition problems. Therefore, I would say that the MDGs focus on reducing the number of hungry people, but not on the complete nutrition picture. Reduction of micronutrient malnutrition should be a separate target because too many women are suffering from iron deficiency, and too many children are going blind from vitamin A deficiency. I believe awareness has improved, but we should try to move nutrition out from the shadow of hunger.

***Dr Ngongi, you were also UN Special Representative to the Secretary General to the DRC (August 2001 to July 2003). What experiences from WFP and the SCN aided you in dealing with such a context of conflict and crisis?***

My mission in the DRC was a very rewarding assignment. It gave me an opportunity to look at the problems of a political crisis from a humanitarian perspective—an advantage which came from working for a humanitarian agency (WFP) and being Chair of the SCN. When you look at political crises of countries like the DRC, the vast majority of the people dying have not been killed, but die as a result of lack of humanitarian assistance. My priority in the DRC was to meet with rebel leaders to try to

*Continued on page 80*

# MEETING THE CHALLENGE TO IMPROVE COMPLEMENTARY FEEDING

## Foreword

Infant and young child nutrition and health will be improved only through comprehensive and integrated policies and programmes that have a deep and enduring impact on everyday customs and habits. In this context, improved complementary feeding is a necessary, but not sufficient, condition. Improvements must also be made in breastfeeding, environmental hygiene, and health care. Although infants and young children are primarily fed within the context of the family and home, complementary feeding customs and habits are influenced both positively and negatively by global, national, and community actions. Therefore, fostering the customs and habits that lead to optimal nutrition requires changes in both the micro- and macro-context in which infant and young child feeding decisions are made and carried out. This requires the initiation of new policies and programmes, the involvement of many stakeholders, and the willingness to coordinate our efforts. Above all it requires vision and leadership.

To highlight the challenges involved and the rewards to the world's children who stand to benefit from our collective action, complementary feeding is the featured topic of this issue of the **SCN News**. Our goal is to update readers on the topic of complementary feeding of infants and young children from a broad perspective and highlight recent community-based to global actions for its improvement. The contributions by individuals working in the United Nations, non-governmental organizations (NGOs), and development and academic institutions provide differing perspectives, examples of what is being done, and opinions about what we need to do to improve complementary feeding. In addition, the feature includes a summary of the recently published *Guiding Principles for Complementary Feeding of the Breastfed Child*, a set of unifying principles for complementary feeding that can be adapted to local feeding practices and conditions along with their underlying scientific rationale.

My article begins by positing that infant and young child nutrition will improve only if improvements in complementary feeding are combined with improvements in breastfeeding, environmental sanitation, and health care; population-level reduction in stunting and anaemia should be the ultimate measure of success. As noted by Daelmans and Saadeh, ratification of the WHO/UNICEF Global Strategy for Infant and Young Child Feeding by the World Health Assembly in 2002 provides a new platform for advocacy for child nutrition, including improved complementary feeding. Their article summarizes global initiatives, advocates for partnerships, and calls for the commitment and resources necessary for the full implementation of the Strategy. Improving, monitoring, and evaluating complementary feeding practices will require simple, valid, and reliable tools and indicators. A new initiative underway to develop these tools and indicators is described in the article by Ruel. The results of a recent survey in Indonesia on breastfeeding and complementary feeding practices illustrate the challenges we face and are summarized by de Pee and colleagues. Programmes by two NGOs to improve complementary feeding are also summarized. First, Hurtado and Koniz-Booher describe a new integrated community child health strategy in Guatemala that focuses on behaviour change. And McNulty discusses how international and national NGO efforts to improve infant and young child nutritional status have evolved from the distribution of food rations to also a focus on behavior change. How to ensure better complementary feeding diets is addressed in two articles. The importance of improving the availability of and access to fortified complementary foods is described by Uauy, while Briend describes a technique that can be used to identify low-cost complementary feeding diets that approximate recommended intakes using local foods. An additional box summarizes different products that could be used to improve nutrient density and raises the possibility of socially marketing them. The importance of placing complementary feeding within the broader context of poverty eradication and including it as part of the health and development agenda is convincingly stated by McLachlan. The editorial of Frongillo, who served as a reviewer for this feature, challenges us to work together to improve complementary feeding by documenting the survival and health gains that will result.

The Millennium Development Goals of reducing deficits in child malnutrition and mortality provide a highly politically-visible opportunity to advocate for the policies and programmes needed to improve complementary feeding and other needed actions. The combined strengths of SCN members can play a unique role in conducting research, fostering appropriate policies, and developing, implementing, and evaluating necessary programmes. We can also advocate at the highest levels for the long-term political support and investments needed by convincing politicians that these goals can be achieved and outlining the specific actions necessary.

Chessa Lutter  
Pan American Health Organization

## MEETING THE CHALLENGE TO IMPROVE COMPLEMENTARY FEEDING

CHESSA LUTTER, PAN AMERICAN HEALTH ORGANIZATION

### *Introduction*

Adequate nutrition and health during the first several years of life is fundamental to the attainment of the Millennium Development Goals (MDGs) for child survival and the prevention of malnutrition. It is during infancy and early childhood that irreversible faltering in linear growth and cognitive deficits associated with anaemia occur. Poor nutrition during these critical formative years has both immediate and long-term consequences. Immediate consequences include significant morbidity and mortality and delayed physical and mental development. Long term consequences include impaired intellectual performance, work capacity, and reproductive capacity, and increased risk of chronic diseases. The causes of malnutrition are both behavioural and resource-related. Poor breastfeeding and complementary feeding, coupled with high rates of diarrhoea and acute respiratory infection, are the immediate direct causes. Household poverty and inadequate environmental sanitation and health care are the underlying causes.

A recent authoritative paper on child survival ranked nutrition interventions among the most effective preventive actions for reducing under-five mortality<sup>1</sup>. Promotion of exclusive breastfeeding ranked first and was estimated to have the potential to prevent 1,301,000 or 13% of all deaths. Improved complementary feeding ranked third and was estimated to have the potential to prevent 587,000 or 6% of all deaths. The administration of zinc and vitamin A ranked fourth and tenth and were estimated to have the potential to prevent 5% and 2% of all deaths, respectively. Inasmuch as adequate zinc and vitamin A nutrition can both be achieved through improved complementary feeding, actions to improve breastfeeding and complementary feeding constitute the two most effective interventions to prevent child mortality. Water, sanitation, and hygiene ranked seventh and were estimated to have the potential to prevent 3% of all preventable deaths. In addition, a recent global analysis of the timing of growth failure provides important new insights<sup>2</sup> for measuring the prevalence of malnutrition, monitoring changes, and most importantly, defining its causes and designing appropriate interventions.

The MDGs provide an important opportunity to advocate for increased funding and political commitment required to achieve universal coverage of the interventions listed above, and to implement a research agenda needed to fill knowledge gaps on how to prevent malnutrition. This article synthesizes existing research to argue that linear growth retardation (stunting) and anaemia are the two main manifestations of malnutrition in infants and young children, and should be the focus of our efforts. Reducing their prevalence will require simultaneously improving infant and young child feeding and reducing morbidity through broadly targeted interventions that address both behavioural and resource-related causes. The first section on measuring malnutrition and why efforts should be focused on assessing linear growth and anaemia. In the second section, the importance of prevention and comprehensive targeting is discussed, arguing that targeting only the mother is misplaced. In the third section, the roles of morbidity and feeding in the etiology of stunting and anaemia are reviewed, with respect to feeding, arguing that poor dietary quality and feeding practices rather than energy deficiency are the primary determinants.

### *Measuring malnutrition and implications for programmes*

Throughout the world children fail to grow in length and weight in a remarkable similar age-specific pattern, despite vastly different prevalences of low weight-for-age, length-for-age, and weight-for-length between and among regions<sup>2</sup>. Although it is widely recognized that the first several years of life represents a window of opportunity to prevent irreversible growth faltering, until recently the extent to which faltering in length and weight follow distinctly different age-specific patterns that most likely reflect different causal mechanisms was not widely appreciated<sup>2</sup>. Faltering in length extends through the first 40 months of life, though is most pronounced during the first 18 months (Figure 1a, next page). In contrast, faltering in weight is concentrated between 3 and 12 months (Figure 1b, next page). After 12 months of age, a child may be stunted and of low weight-for-age; however, his weight-for-height ratio rapidly improves. This suggests that after 12 months, weight gain can be adequate even while the process of stunting continues for another two years. As a result, while failure to gain weight adequately is a signal of inadequate nutrition and/or illness, adequate weight gain does not necessarily mean that a child is growing taller appropriately.

Although the prevalence of low weight-for-age and height-for-age are often used interchangeably to describe chronic malnutrition, they provide very different information on what the problem is, how it can be remedied, and the age range when this is possible. Low height-for-age reflects the cumulative effects of numerous insults experienced by children during infancy and early childhood. It begins at birth and continues through the initial three and a half years of life, after which time it is irreversible. In contrast, low weight-for-age is reversible, can reflect either chronic or--depending on its relationship to length--acute malnutrition or both. It is concentrated during the first 12 months of life. Not only does low length/height-for-age most accurately assess chronic mal-

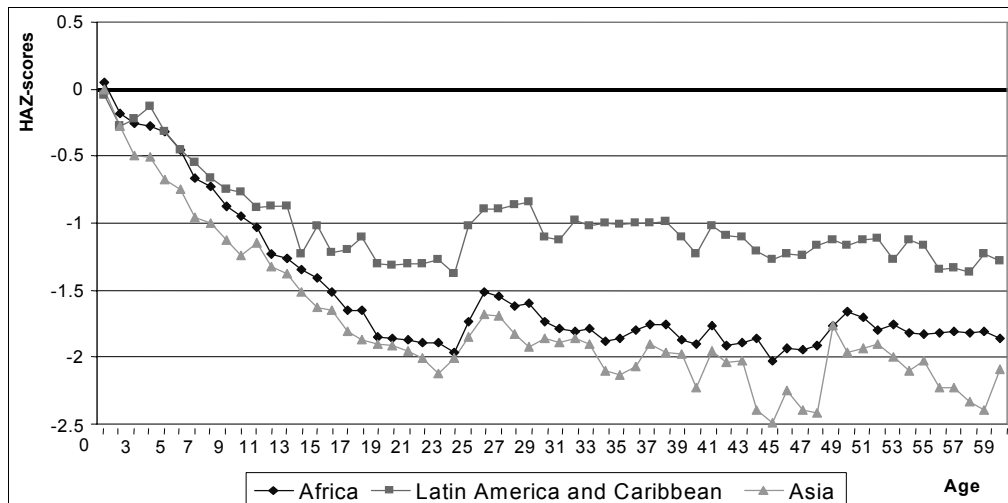


Figure 1a  
Global height-for-age z-scores,  
source 2

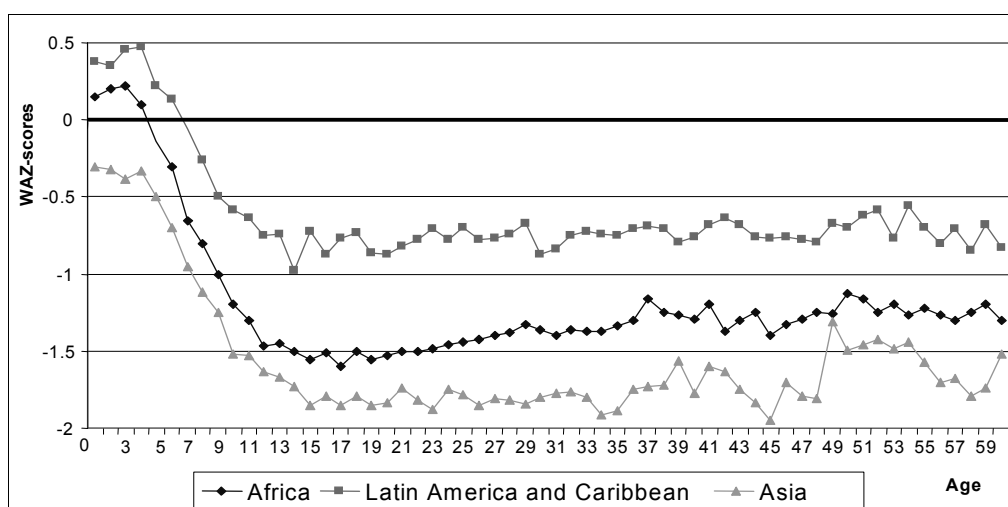


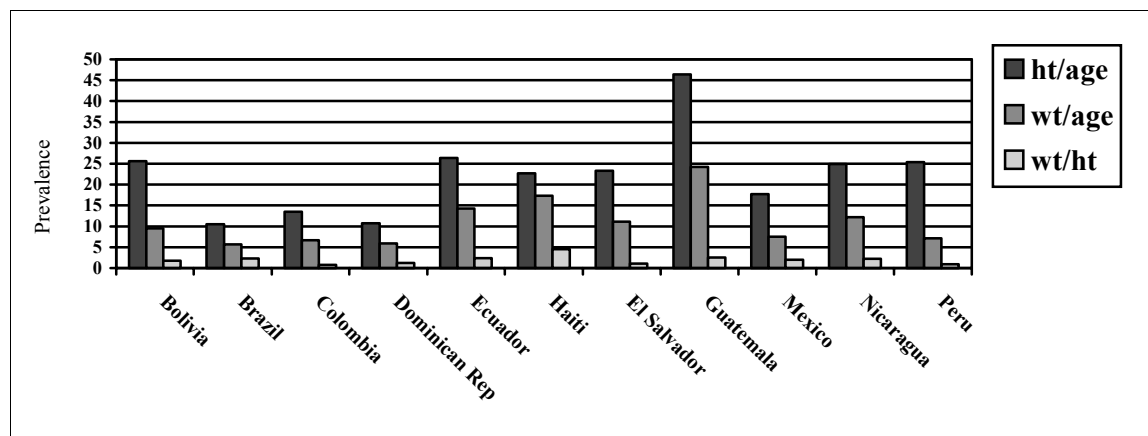
Figure 1b  
Global weight-for-age z-scores,  
source 2

nutrition, measures of length in combination with measures of weight are necessary to identify acutely malnourished children. Acutely malnourished children require different nutrition and health interventions than those chronically malnourished, and depending on their degree of wasting, immediate medical attention to prevent mortality. Research is needed to understand how to improve the accuracy and reliability of clinical measures of length in resource poor settings and train health workers to interpret different measures of nutritional status and their implications for treatment and follow-up. Capacity building in anthropometric assessment and interpretation is needed to shift the focus from weight-for-age to length-for-age and weight-for-length for assessing malnutrition and identifying individuals and populations that could benefit from interventions.

Differences in the degree of growth failure in weight and length have implications for assessing the true prevalence of chronic malnutrition. In Africa, the mean height-for-age z-score at 24 months is about -2 whereas for weight-for-age it is about -1.5. In Asia, the mean height-for-age z-score at 24 months is about -2 whereas for weight-for-age it is about -1.8. In Latin America, the mean height-for-age z-score at 24 months is about -1.3 whereas for weight-for-age it is about -0.8. As a result, the prevalence of stunting generally exceeds that of low weight-for-age. This is particularly true in Latin America, where the prevalence of stunting is usually about twice that of low weight-for-age (Figure 2, next page). However, it is also true for 11 out of 19 Sub-Saharan African countries and all North African and Near Eastern countries and Newly Independent States for which nationally representative data exist<sup>3</sup>. Key exceptions are for Bangladesh and Nepal, where the prevalence of stunting is within 5% of the prevalence of low weight-for-age. Therefore, assessing malnutrition using low weight-for-age will generally underestimate the prevalence of growth retardation. In monitoring trends or evaluating the effect of interventions, its use may also lead to an under appreciation of the extent to which, once corrected for height, the weight distribution is normal or shifted toward the right indicating a tendency toward overweight among children who are stunted.

The prevalence of anaemia is higher during infancy and early childhood than at any other time in the life cycle<sup>4</sup>. Nationally representative data from the Demographic and Health Surveys show that 30 to 75% of infants and young children are anaemic (Figure 3, page 7). This high prevalence is consistent with data showing dietary iron to be inadequate and of low bioavailability in most complementary foods. It is also not surprising given the extremely high dietary requirement for iron per kg body weight and the small amount of food needed in this age group to meet energy needs. Recent randomized trials showing the effect of iron supplements on motor and lan-

Figure 2  
Nationally representative data on the prevalence of stunting, low weight, and wasting (<2 SD) in children in Latin America and the Caribbean



guage development suggest that improving iron status in iron-deficient populations is likely to yield significant benefits<sup>5-7</sup>. In contrast to solid evidence on the effectiveness of policy and programmatic interventions to improve breastfeeding and more limited evidence on how to improve complementary feeding, effective interventions to improve iron status are not available and constitute an important area for research.

The timing of growth failure and unacceptably high prevalences of anaemia have important implications for programmes. Knowledge about the timing of growth failure and a primary focus on infants and young children is beginning to be incorporated into nutrition and health programmes. However, infants and young children remain an underserved group in many respects, particularly with respect to food-based interventions to improve dietary quality. The current emphasis on staple food fortification with iron and other micronutrients will not address the problem of anaemia because of the small amounts they consume and high requirements. Also, supplemental feeding programmes need to be reviewed to determine both the extent to which they reach infants and young children between 6 and 40 months of age and the bioavailability of iron in the foods provided, which has never been evaluated. Social marketing of fortified complementary foods and/or other micronutrient supplements is receiving attention as an approach that could potentially reach large numbers of infants and young children and be a sustainable way to improve complementary feeding diets (see accompanying box, page 18).

### *Prevention and comprehensive targeting*

The early initiation of stunting coupled with the difficulty of accurately assessing linear growth in infants and young children in routine health care is such that by the time stunted children are clinically identified permanent growth retardation is likely to already have occurred<sup>1</sup>. It is also likely that once anaemic children are identified, associated cognitive deficits have become irreversible. Therefore, while identification and treatment of acutely malnourished children will remain a necessity for the foreseeable future, policies and programmes to improve linear growth and reduce anaemia should focus first and foremost on prevention and be comprehensive in nature. A comprehensive preventive approach requires that interventions do not treat individual children after evidence of growth faltering or anaemia, but broadly target all infants and young children so that the causes of morbidity and inadequate feeding are addressed<sup>8</sup>. When resource constraints dictate that particular programmes be targeted, geographical level indicators of poverty and/or nutritional status should be used to rank those communities most in need so that all infants and young children living in them benefit.

A comprehensive approach also requires that both the behavioural and resource-related causes of morbidity and inadequate feeding are addressed in an integrated manner so that the inherent synergies between the two are maximized<sup>9</sup>. Reducing morbidity and improving feeding involves improving behaviours and material resources in the household as well as improving community-level material resources related to health care and water and sanitation. Neither is substitutable for the other. Appropriate complementary feeding requires the adoption of recommended behaviours regarding feeding frequency, responsiveness of the care giver to the needs of the child around feeding, and hygiene for food preparation, storage, and feeding. It also requires access to foods of adequate macro and micronutrient content, time to prepare foods and to feed them, and adequate water and sanitation. Reducing morbidity requires the adoption of appropriate behaviours at the household regarding breastfeeding, hygiene practices and health care utilization. It also requires frequent and continued mother-infant contact for breastfeeding and access to adequate housing, water and sanitation, and quality health services, all of which depend on the material resources (including time) in both the household and community.

Behavioural interventions are usually targeted at women as the bearers and primary care givers of infants and young children; however, such narrow targeting is misplaced. Adherence to recommendations about feeding, health, and hygiene, or lack thereof, results from a complex series of behavioural interactions between a mother and her child, interactions that take place within and reflect the normative behaviours of her family, community, and country, and increasingly global forces. Inasmuch as individual actions tend to reflect these broader normative behaviours, policies and programmes to change maternal behaviours need to be targeted also at families, health care providers, religious leaders, politicians, and other influential leaders. Comprehensive targeting, together with appropriate audience segmentation, is necessary to ensure that the socially normative behaviours become those



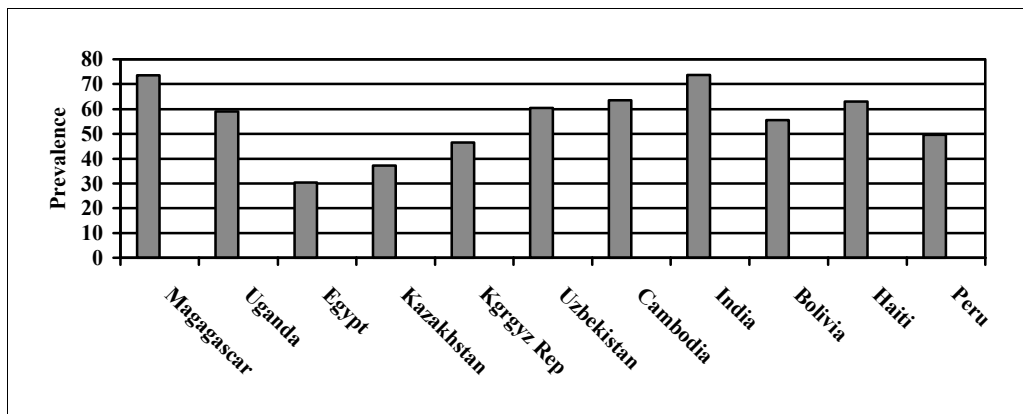


Figure 3  
Nationally representative data on the prevalence of anaemia (Hb < 11 mg/dl) in children 6-36 or 6-59 months of age

that foster optimal infant and young child feeding and health. In addition, targeting politicians and policy makers will help to ensure that the material resources, such as improved water and sanitation and quality care systems are in place so that the effects of improved behaviours are maximized.

### *The roles of morbidity and dietary quality in the etiology of malnutrition*

The fact that post-natal linear growth begins to falter at birth when energy from breastmilk is adequate and continues to falter long after weight gain is normal, suggests that something other than lack of energy is primarily responsible for growth failure. The most plausible causal factors include unidentified aspects of the prenatal environment<sup>10</sup>, and in the post-natal environment nutritional inadequacies resulting from morbidity and poor nutrition<sup>11,12</sup>, and the interaction between them<sup>13</sup>.

#### MORBIDITY

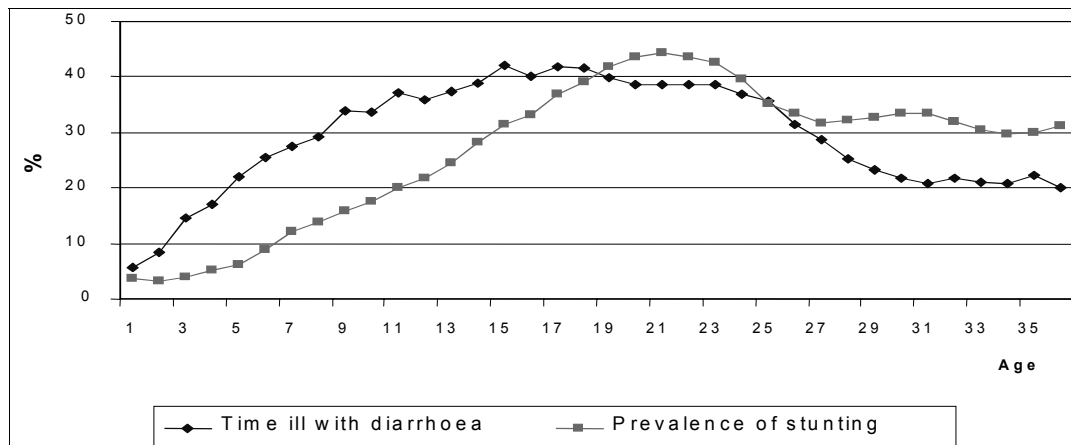
Although reductions in malnutrition have contributed substantially to reductions in child mortality<sup>14</sup>, the rate of reduction in mortality has exceeded that of malnutrition. In part, this is because while the widespread use of oral rehydration therapy and antibiotics has led to declines in disease severity and mortality from diarrhoea and acute respiratory infections, the prevalence of these infections has not been significantly reduced. As a result, their negative effect on nutrition continues. Diarrhoea and acute respiratory infections are highly prevalent early in life. The prevalence of diarrhoea increases sharply after birth, peaking between 9 and 18 months of life, before beginning to decline. The prevalence of fever and cough follows a similar age-specific pattern though it tends to be higher. Morbidity causes stunting because of its effect in suppressing appetite, increasing energy needs, and, in the case of diarrhoea, loss of nutrients through the stool. The age-specific pattern of stunting lags somewhat behind, though closely tracks that of the percent time ill with diarrhoea (Figure 4, next page). As with anthropometric indicators, the age-specific pattern of diarrhoea across countries and regions of the world is remarkably similar suggesting that environmental contamination plays an important role. This is most likely related to the hygiene practices in and around food storage, preparation, and serving, and to the environment that crawling infants and active young children are exposed to.

#### DIET AND FEEDING PRACTICES

In non-famine situations, dietary quality and feeding practices are likely to be more important in the etiology of stunting than inadequate dietary energy. Assessment of energy adequacy has been a problem because of both an overestimation of requirements and the difficulty of measuring the contribution from breastmilk. Estimated energy requirements among infants and young children have been dropping over time as the result of improved methods for assessing energy expenditure and deposition<sup>15</sup>. Since 1985, estimated requirements have declined from between 14 and 28%, depending on the age group in question. Although micronutrient deficiencies are highly prevalent in complementary feeding diets<sup>16-17</sup>, whether these diets are also inadequate in energy is more difficult to determine especially since few assessments have been made using the new energy recommendations. Often diets that are inadequate in total daily energy are adequate when assessed against energy per kg as children from developing countries on average are lighter than the reference standard. There has been debate about whether actual or age-specific reference weight should be used to assess energy adequacy as actual weight may reflect current energy deficits. However, after 15 months of age when weight gain no longer appears to falter, assessing energy adequacy as a function of weight is likely to be appropriate.

Complementary feeding diets may appear inadequate because breastmilk intake is rarely measured. As a result, its contribution to energy intake is not usually factored in with that of complementary foods to arrive at a complete assessment of intake. In one comparative analysis that did have data on breastmilk intake, a diet that appeared to be energy deficient when compared to diets of similar aged children in other countries was determined to be adequate when intake from breastmilk intake was also considered<sup>18</sup>. Children in the apparently deficient population merely derived a greater proportion of their total energy needs from breastmilk compared to the other populations. As a result, total energy intakes among the populations were similar and deemed to be adequate.

Figure 4  
Age-specific association of time ill with diarrhoea and the prevalence of stunting in children 0-36 months of age, DHS Bolivia 1993-94



Even in studies where energy intake appears to be inadequate, children consumed less food than was offered<sup>18</sup>; therefore, understanding the underlying reasons for the child's failure to consume the foods offered, if energy inadequacy is determined to exist, is crucial to forming strategies to improve the diet and/or feeding behaviours. Traditional recommendations of feeding more frequently and/or adding oil to foods can further exacerbate poor nutrition if lack of energy is not in fact the problem. Increasing feeding frequency can reduce breastfeeding and the benefits derived from breastmilk. Adding oil to complementary foods further dilutes the density of micronutrients in the diet, which are almost certain to be inadequate<sup>16</sup>.

Three independent factors are likely to interact to influence intake from complementary foods: child appetite, care giver behaviours, and characteristics of the diet. Child appetite will change depending on the state of nutrition and health. Diarrhoea can reduce intake of complementary foods up to 30%<sup>19</sup> though it does not affect breastmilk intake<sup>20</sup>. Zinc deficiency and possibly other micronutrient deficiencies, including iron, have a negative effect on appetite<sup>16</sup>. Child appetite can also be influenced by gastric size, which is not well characterized in children who are not acutely malnourished.

Behaviour of the care giver is the second factor that interacts with child appetite and characteristics of the diet to influence intake. Important care giver behaviours include the level of encouragement provided to the child during feeding, the frequency with which foods are fed, the general quality of the child caregiver interaction, and the environment where feeding takes place. Children that are left to eat by themselves or are fed in places where there are many distractions do not consume the amount they would in environments more conducive to optimal eating. Attention to feeding patterns, such as the number and timing of meals and snacks and the responsiveness of the care giver to the child during feeding times, are as important as attention to the foods the child is being fed.

Characteristics of the diet, such as energy density, sweetness, and viscosity are the third factor that affects total energy intake<sup>15</sup>. Energy intake from complementary foods varies directly with their energy density. Children consume more low-energy dense food than high-energy dense food, presumably to try to meet their energy needs; however, their overall energy intake is less than that of children consuming a similar but high energy density diet. Increased sweetness also appears to increase intake. When the effects of energy density and viscosity were examined independently while controlling for other sensory properties of the diet, decreased viscosity resulted in increased intake among non breastfed children. A major limitation of all data on dietary characteristics and intake, however, is that none have included 24-hour measurements of breastmilk intake. Therefore, the extent to which increases in energy from complementary food translates into increases in total energy intake is not known, and an important area for research.

While much remains to be understood about the energy adequacy of complementary feeding diets, they are well documented to be deficient in iron, zinc, and vitamin B-6, and depending on the country and dietary reference standard used also deficient in riboflavin, niacin, calcium, vitamin A, thiamine, folate, and vitamin C<sup>15</sup>. The proportion of energy provided by animal source foods is very low, which influences the composition of fatty acids and amino acids in the diet as well as the intake of key limiting vitamins and minerals. The low proportion of animal source foods is also likely to affect taste and acceptance of food.

Because both feeding patterns and diet are important to understanding the role of energy adequacy versus dietary quality, formative research and quantitative dietary assessment are necessary to provide a basis for the design of interventions. Formative research contributes to understanding the beliefs and practices that could serve as facilitators and barriers to improved practices<sup>21</sup>. It also is necessary for the design and testing of messages to ensure that the intended audience is able and willing to comply with the specific behaviours being recommended. Quantitative dietary data are needed to answer the critical question of whether dietary energy is adequate and to determine specific dietary deficiencies, important food sources of key macro and micronutrients, and food combinations that enhance and/or inhibit absorption. The two types of research used in tandem will help ensure that appropriate interventions are formulated.

Mothers and care givers of infants and young children and those persons that influence their decisions need age-



specific messages about feeding and hygiene. They also need to be given the messages so as to maximize the probability of implementation. This requires as much attention to the way in which information is communicated as to the content of the information. It also requires that nutritional recommendations are translated into key messages that are easily understood. So far, the teaching of counseling skills has not received the level of emphasis needed to ensure that the nutrition messages are communicated in a manner that optimizes the probability of being remembered and implemented. Such counseling skills are equally important for other aspects of child health such as explaining how to use an antibiotic or follow hygienic practices.

## Conclusion

International efforts to promote, support, and protect breastfeeding and reduce vitamin A deficiency have resulted in notable achievements<sup>22</sup>. These efforts were grounded in solid epidemiological and programmatic research, global and national policy and programme initiatives, and generous funding from multiple sources and stakeholders. A similar effort is needed to mobilize and coordinate the research, policy, and programmatic interventions that can reverse early childhood stunting and improve iron status. Improved complementary feeding is a key component of such an effort and needs to be placed at the forefront along with improved breastfeeding practices and reduced morbidity as essential to achieving the MDGs for child survival and the prevention of malnutrition. Efforts are needed to promote the assessment of linear growth retardation as the key indicator of chronic malnutrition, develop and implement preventive interventions that reach infants and young children particularly during the first 18 months of life, improve dietary quality and food-based approaches to improve complementary feeding diets, and foster changes in social norms so they are conducive to infant and child nutrition.

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## GLOBAL INITIATIVES TO IMPROVE COMPLEMENTARY FEEDING

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The importance of nutrition as a foundation for healthy development is often underestimated. Poor nutrition leads to ill-health and ill-health contributes to further deterioration in nutritional status. These effects are most dramatically observed in infants and young children, who bear the brunt of the onset of malnutrition and suffer the highest risk of disability and death associated with it. In 2001, 54% of all childhood mortality was attributable, directly or indirectly, to malnutrition<sup>1</sup>.

A recent series of articles on child survival published in *The Lancet* highlighted the importance of addressing childhood malnutrition as a prerequisite for achieving internationally agreed goals to reduce malnutrition and child mortality. It is estimated that among children living in the 42 countries with 90% of global child deaths, a package of effective nutrition interventions including promotion of exclusive and continued breastfeeding, complementary feeding, vitamin A and zinc supplementation could save 25% of childhood deaths each year<sup>2</sup>.

The children who die represent only a small part of the total health burden due to nutritional deficiencies. Maternal malnutrition, and inappropriate breastfeeding and complementary feeding represent major risks to the health and development of those children who survive.

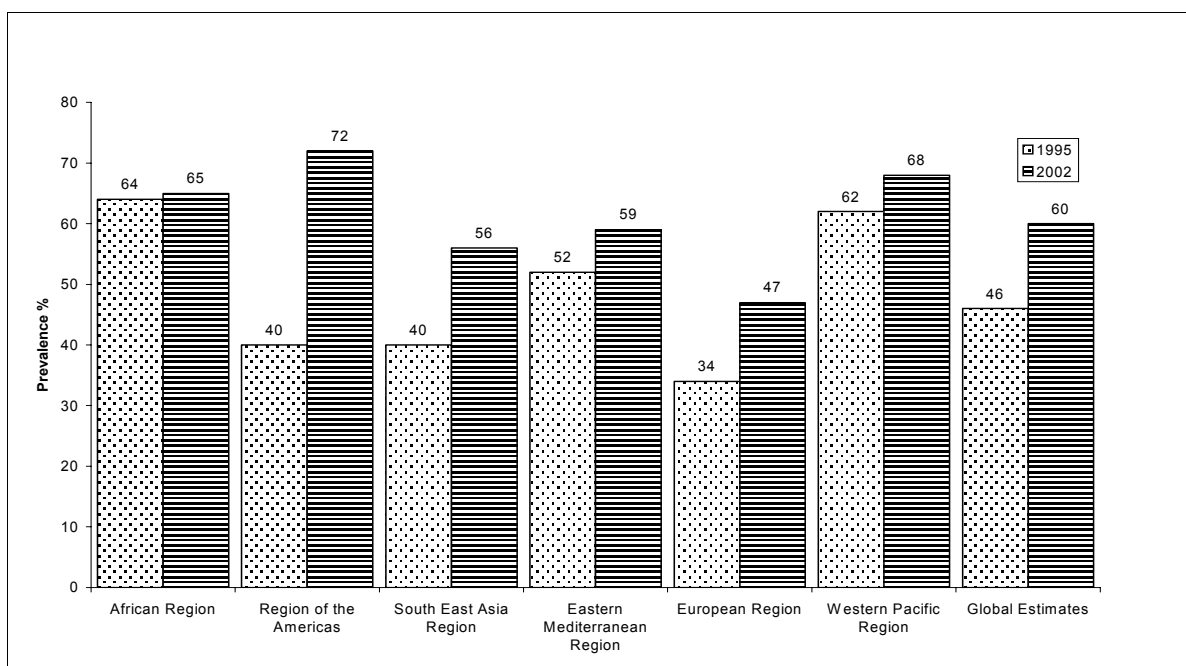
Diet deficiencies of vitamin A, iodine, iron and zinc are still widespread and are a common cause of excess morbidity. Over 50m children under age five are wasted, and in low-income countries, one in every three children suffers from stunted growth. The effects of poor nutrition and stunting continue throughout life, contributing to poor school performance, reduced productivity, and impaired intellectual and social development.

Inappropriate feeding practices are a major cause of the onset of malnutrition in young children. Children who are not breastfed have repeated infections, grow less well, and are almost six times more likely to die by the age of one month than children who receive at least some breastmilk<sup>3</sup>. From six months onwards, when breastmilk alone is no longer sufficient to meet all nutritional requirements, infants enter a particularly vulnerable period of complementary feeding during which they make a gradual transition to eating family foods. The incidence of malnutrition rises sharply during the period from 6–18 months of age in most countries, and the deficits acquired at this age are difficult to compensate for later in childhood<sup>4</sup>.

Global monitoring of the timely complementary feeding rate, defined as the proportion of children 6–9 months of age who are breastfed and receive complementary foods, shows that in all regions many children do not yet enjoy appropriate complementary feeding (Figure 1). The indicator is a measure of late introduction of complementary foods or premature cessation of breastfeeding or both. However, it does not assess the quality of complementary feeding.

Many factors contribute to the vulnerability of children in the complementary feeding period. Complementary foods are often of low nutritional quality. They are often given in insufficient amounts and, if given too early or too frequently, they displace breastmilk. Gastric capacity limits the amount of food that a young child can con-

Figure 1  
Prevalence of timely  
introduction of comple-  
mentary feeding in 1995  
and 2000, by WHO re-  
gions





sume during each meal. Repeated infections reduce appetite and increase the risk of inadequate intakes. Infant and young children in many situations lack the company of a caring adult or other responsible person who not only selects and offers appropriate foods, but assists and encourages them to consume these foods in sufficient quantity.

During the past decade, there has been considerable progress in the implementation of interventions to improve breastfeeding practices. Clear recommendations and guidelines, combined with political commitment and increased allocation of resources, have enabled many governments to establish programmes that combine the necessary actions to protect, promote and support breastfeeding. Consequently, improvements in breastfeeding rates have been demonstrated in various settings<sup>5</sup>.

However, similar progress has not been made in the area of complementary feeding. While research and development have contributed evidence for recommendations on appropriate feeding and effective interventions for children after six months of age, translation of new knowledge into action has lagged behind.

This article summarizes recent developments and steps taken by WHO and partners to mobilize action in the area of infant and young child feeding, and in particular complementary feeding. It places them within the framework of the Global Strategy for Infant and Young Child Feeding developed jointly by WHO and UNICEF with broad participation of many stakeholders, and summarizes strategic directions for programme development<sup>6</sup>.

### ***The Global Strategy for Infant and Young Child Feeding***

Recognizing the major burden of childhood malnutrition on child health and development, the WHO Executive Board, at its 101<sup>st</sup> session in January 1998, called for a revitalization of the global commitment to appropriate infant and young child nutrition, and in particular breastfeeding and complementary feeding. Subsequently, in close collaboration with UNICEF, WHO organized a consultation (Geneva, 13–17 March 2000) to assess infant and young child feeding policies, review key interventions, and formulate a comprehensive strategy for the next decade<sup>7</sup>.

In follow-up to this meeting, WHO commissioned a scientific review and convened an expert consultation on the optimal duration of exclusive breastfeeding<sup>8</sup>. Acting upon the recommendations of the expert consultation, the 54<sup>th</sup> World Health Assembly in 2001 adopted resolution WHA 54.2 recommending exclusive breastfeeding for six months as a global public health recommendation<sup>9</sup>. The resolution also called upon Member States to improve complementary foods and feeding practices by ensuring sound and culture-specific nutrition counselling to mothers of young children, recommending the widest possible use of indigenous nutrient-rich foodstuffs.

In May 2002, the 56<sup>th</sup> World Health Assembly unanimously endorsed the Global Strategy for Infant and Young Child Feeding, developed during a two-year participatory process involving well over 100 Member States and international, intergovernmental and non-governmental organizations. The strategy is a guide for action that builds upon past and continuing achievements—particularly the Baby-friendly Hospital Initiative (BFHI), the International Code of Marketing of Breastmilk Substitutes and the Innocenti Declaration on the Protection, Promotion and Support of Breastfeeding. It builds on these achievements in the overall context of national policies and programmes on nutrition and child health, and consistent with the World Declaration and Plan of Action for Nutrition. As a global public health recommendation, the strategy states that infants should be exclusively breastfed for the first six months of life to achieve optimal growth, development and health, and thereafter, they should receive nutritionally adequate and safe complementary foods while breastfeeding continues for up to two years or beyond.

It is clear that recommendations for complementary feeding need to be more precise to be adaptable to the specific setting in which they will be implemented.

### ***Global recommendations for appropriate complementary feeding***

A scientific review on complementary feeding, commissioned by WHO and UNICEF in 1998, provided age-specific guidance on nutritional requirements from complementary foods in healthy breastfed children<sup>10</sup>. The review's conclusions were reflected into practical guidelines for improving care giver practices, notably in the feeding component of the WHO/UNICEF *Integrated Management of Childhood Illness* strategy (IMCI)<sup>11</sup> and the WHO document *Complementary feeding: Family foods for breastfed children*<sup>12</sup>. Nevertheless, inconsistencies between national and international guidelines for complementary feeding continue to exist, calling for further efforts to standardize recommendations and refine programmatic guidance<sup>13</sup>.

WHO convened a global consultation on complementary feeding in Geneva from 10–13 December 2001. Using information in five background papers<sup>14–18</sup>, participants reviewed: up-to-date information on energy and nutrient requirements of infant and young children; appropriate caregiver behaviours for complementary feeding; approaches for filling nutrient gaps and improving access and utilization of adequate complementary foods; and lessons learned from successful programmes to improve complementary feeding<sup>19</sup>.

As an important outcome, the consultation revised feeding recommendations presented in the WHO/UNICEF scientific review on complementary feeding, 1998. The latest estimated energy requirements from complementary foods, assuming an average breastmilk intake, are 200 kcal/day for infants aged 6–8 months (previously 269), 300 kcal/day for infants aged 9–11 months (previously 451), and 550 kcal/day for children aged 12–23 months (previously 746). No major changes were proposed for the estimated nutrient requirements from complementary foods, since the scientific and empirical evidence was not sufficiently robust to justify a change. However, data showed that some nutrients, notably iron, zinc and vitamin B<sub>6</sub> are consistently deficient in diets of infants and young children in most populations in low-income countries. Interventions to improve complementary feeding should pay special attention to ensuring the adequacy of these micronutrients in food recommendations.

Inappropriate feeding behaviours, or feeding styles, were identified as a major factor contributing to poor intakes. Infants and young children need assistance that is appropriate to their age and developmental needs to ensure that they consume adequate amounts of complementary food. This is called responsive feeding. Applying principles of psycho-social care, responsive feeding means that care givers feed infants directly and assist older children when they feed themselves; encourage children to eat, but do not force them; help children to overcome refusal to eat by experimenting with different food combinations tastes, textures and methods of encouragement; minimize distractions during meals; and talk to the child lovingly during feeding. Unfortunately, care givers are often unaware of the importance of responsive feeding, or do not know how to practise it. They need support from health-professionals and community-based workers or peers to acquire the necessary knowledge and skills.

Recognizing the intricate link between breastfeeding and complementary feeding and the importance of responsive feeding to ensure adequate energy and nutrient intakes, participants reviewed and endorsed a set of *Guiding Principles for Complementary Feeding of the Breastfed Child*<sup>20</sup>. They combine guidance on food frequency, consistency and amounts for various age groups with guidance on feeding style. The principles are intended to serve as a guide for programme planners and implementers to assess or develop locally appropriate feeding recommendations. They are current best practice standards that should be widely disseminated and used. A summary of the guiding principles are included in this issue (see page 19).

## ***Effective interventions to improve complementary feeding***

The growth and development of young children is affected by many factors including feeding practices, childhood diseases and maternal nutrition. Reviews of projects and programmes aimed at improving childhood nutrition consistently show that the effect of interventions to improve feeding practices is variable and depends on the initial nutritional status of the infants and the degree to which other health needs are addressed. Approaches that combine interventions that address these factors in an integral way are most likely to be effective and have the largest impact.

Evidence has been accumulating rapidly about the important role that health services and communities can play in supporting infant and young child feeding. Counselling, if based on locally appropriate feeding recommendations, is effective in improving feeding practices, and can be delivered by trained health professionals as well as community-based workers or peers. A positive effect has been observed even in environments where the availability or adequacy of complementary foods was limited. The next section discusses the evidence for investing in health system and community-based support as effective ways to improve complementary feeding, followed by a summary of strategies that can be adopted to improve the availability of and access to adequate complementary foods.

### STRENGTHENING HEALTH SYSTEM SUPPORT FOR IMPROVED COMPLEMENTARY FEEDING

The WHO/UNICEF joint statement on the Protection, Promotion and Support of Breastfeeding: the Special Role of Maternity Services, 1989 recognized the important role that health services could play in supporting mothers to initiate and sustain optimal breastfeeding practices<sup>21</sup>. The Ten Steps to Successful Breastfeeding, that formed the basis of the BFHI, have been extremely useful in guiding policy-makers, programme planners and hospital managers to identify the essential actions they should take in order to protect, promote and support breastfeeding. The right of every mother to receive support from a skilled health professional in the early days of breastfeeding was a cornerstone of the initiative. Global monitoring shows that in countries where the BFHI was successfully implemented on scale, breastfeeding rates improved. Nevertheless, with it came a strong realization that mothers need support for feeding practices not only in the first few days of a child's life, but during the entire period of infancy and early childhood.

Recent studies show that feeding counselling in health facilities is effective, not only to improve breastfeeding practices, but also to improve complementary feeding. In Brazil, where the duration of breastfeeding is short and complementary foods are introduced early, counselling in health facilities was associated with the prevention of growth faltering among children older than six months. Improvements in maternal knowledge about complementary feeding, the timely introduction of complementary foods, the quality of appropriate foods and feeding practices resulted in significant increases in energy and nutrient intakes and growth<sup>22</sup>.

The importance of adequate support for complementary feeding in health care services also evolves from experi-



ences in large-scale programmes and projects that aimed to improve infant and young child feeding. While in many of these combined community and facility based interventions, the role of health care providers in supporting caregivers to appropriately feed their children is consistently highlighted.

#### STRENGTHENING COMMUNITY-BASED SUPPORT FOR IMPROVED COMPLEMENTARY FEEDING

The development of community-based initiatives for breastfeeding promotion and support has been an extension of more than two decades of global advocacy and systematic research. A recent review of evidence of effective community-based strategies for improving breastfeeding practices emphasizes the importance of investing in policies, health system support and community-based interventions to create a supportive environment for optimal infant and young child feeding, growth and development<sup>23</sup>. Evidence indicates that community-based breastfeeding promotion and support, if placed within such supportive environment, can be effective in improving breastfeeding practices and infant health.

A large community-based study in Haryana, India confirmed that complementary feeding practices can also be improved if information and support are given to families and care givers through various channels within the health system and the community. The study evaluated the effect of interventions to improve exclusive breastfeeding during the first six months and complementary feeding practices thereafter, and the impact on infant diarrhoeal diseases and growth<sup>24</sup>. The key findings of this study were that the intervention resulted in a substantial improvement in complementary feeding practices. Meal frequencies, energy intake and proportion of mothers who actively fed their children were significantly higher in the intervention group. Intervention group children also had significantly higher lengths at 12 months of age but there was no impact on weight<sup>25</sup>.

In Peru, a community-based controlled efficacy study assessed the impact of regular nutrition advice in the home on dietary intake in infants 7–11 months of age. The results showed that complementary food intake, and thus intakes of energy and nutrients, increased during the short study period. This was achieved through increasing consumption of certain food groups and recommended food preparations, including foods from animal sources<sup>26</sup>.

Considering these studies and other initiatives, it emerges that the capacity of behaviour change for infant and young child feeding at community level requires effective leadership, forming intersectoral partnerships, informing and engaging opinion leaders, conducting formative research to shape appropriate feeding recommendations into clear and persuasive messages, and training of lay or peer counsellors and community-based workers. Coordinating activities with health professionals and ensuring that consistent support and messages are given within the health system and communities are other determinants of success. Interventions can focus on both individuals (through counselling) and groups (for example, through feeding demonstrations), and should be supported by well-designed mass communication efforts.

#### IMPROVING ACCESS TO ADEQUATE COMPLEMENTARY FOODS

While interventions for behavioral change can lead to improved feeding practices, their effect depends upon the families' access to adequate complementary foods within available resources. Interventions to improve access include technologies that can be applied in the home or community to improve the quality of indigenous foods, or large-scale industrial production of processed and fortified foods. Where such approaches are not sufficient, feasible or appropriate, micronutrient supplementation can be used to fill certain gaps.

Household technologies such as fermentation, roasting, and malting have been traditionally used in many societies<sup>18</sup>. They contribute to improving the safety and quality of complementary foods. However, several studies have shown that meeting the desired densities for problem nutrients remains a challenge in most settings. Even with the use of techniques to enhance nutrient bio-availability, plant-based complementary foods by themselves are insufficient to meet the needs for certain nutrients, particularly iron, zinc and calcium during the period of complementary feeding. Including animal products can fill the gap in some cases, but this increases the cost and may not be feasible for the lowest income groups or in certain cultural settings. Other ways for improving the quality of home-prepared complementary foods include the enrichment of foods with nutrient dense ingredients. Mixing micronutrient sprinkles or nutrient-rich pastes in foods has been successfully promoted in some settings and requires further evaluation<sup>27</sup>.

Centrally produced fortified complementary foods have been used for improving infant nutrition for decades, particularly in public-sector programmes, and have usually involved various combinations of cereals, legumes and other foods, often dried milk, to provide a protein-balanced, predominantly plant-based food suitable for infants. Although numerous attempts were made to market these low-cost complementary foods, many of these products were not purchased by poor families and thus failed as commercial endeavours. In recent years a number of factors have encouraged renewed interest in processed complementary foods. First, advances in scientific knowledge have produced a shift away from focusing on protein towards ensuring that micronutrient needs are met; fortified foods represent a convenient way to achieve this. Second, increased urbanization and employment among women has led to greater participation in the cash economy, purchase of foodstuffs, and demand for precooked products that require less time and effort to prepare. Public-private partnerships can play an important role in making available adequate low-cost processed foods. However, such partnerships should be consistent with the

provisions in the International Code of Marketing of Breastmilk Substitutes and subsequent relevant World Health Assembly resolutions, and with applicable Codex Alimentarius Standards. Voluntary third party certification is a way to stimulate health competition among producers. It requires the establishment of an independent quality control body that certifies products as being suitable for their purpose as well as promotion of the quality seal to the general public<sup>17</sup>.

Micronutrient supplementation is the ultimate but least desirable solution to fill a specific nutrient gap. Reaching universal coverage is a major challenge and hence the approach is least suitable for reaching all children. To improve vitamin A status in early childhood, research is in progress on the safety and effectiveness of supplementation during the first year of life linked to immunization. Studies are also ongoing to further quantify the effect of zinc supplementation on reducing childhood mortality and morbidity, and to identify the most appropriate formulations and delivery mechanisms for improving zinc nutrition in infants and young children. The role of iron supplementation in the combat of anaemia is currently under review, as is the formulation and effectiveness of combined mineral vitamin supplements. These are areas in which new policy formulation is likely to be necessary in future.

## ***Moving forward***

The evidence to move forward rapidly with programmes to improve complementary feeding is strong. Although there is no 'magic bullet', a well-planned approach can be highly effective. Effective interventions are known, supported by a range of tools for implementation. The challenge is to increase commitment, generate resources and form partnerships that will enable governments to implement the interventions on scale. The next section highlights work areas for future attention and investment.

### ADVOCACY AND RESOURCE MOBILIZATION

While the evidence for infant and young child feeding as a key area in public health is clear, resources for interventions have been dwindling over the past years. The enthusiasm with which the BFHI was initiated rapidly waned during the last five years, in part because of lack of funds to support it. The Millennium Development Goals (MDGs) call for a reduction in childhood mortality by two-thirds and of a reduction in people who suffer from hunger by half by the year 2015. These goals cannot be achieved unless a major progress is made in reducing childhood malnutrition. Effective interventions are known and can be implemented on scale provided the leadership, commitment and resources are available. This requires advocacy and purposeful marketing, using arguments that not only reflect public health, but also the economic benefits of investment. The global public health community needs to seize the current opportunities of integrating infant and young child interventions into the road maps that governments are drawing towards the achievement of the MDGs. Resources are available, we only need to be able to channel them into the right direction.

### TRANSLATING THE GLOBAL STRATEGY INTO COUNTRY ACTION

The Global Strategy for Infant and Young Child feeding provides an overarching framework for action and calls for concerted efforts to improve infant and young child feeding. Specifically, the strategy calls upon governments to develop a comprehensive national policy for infant and young child feeding in the context of national programmes for nutrition, child and reproductive health and related areas and to constitute a national body to lead the implementation of the policy. Translation of the global strategy into national plans of action should be a priority for all governments and concerned partners.

Based on experiences of working with several countries to date, WHO is developing a planning guide that proposes a systematic process for assessing the national situation, conducting an in-depth analysis of nutritional challenges in childhood, prioritizing actions and developing a comprehensive policy and plan of action as a joint effort of all relevant actors in a given setting. The planning guide outlines a sequence of useful steps to follow. It needs to be complemented by useful tools to assist in the planning such as:

- *Infant and Young Child Feeding: A tool for assessing national practices, policies and programmes*, developed by WHO and LINKAGES to facilitate the implementation of the Global Strategy at national level<sup>28</sup>. The tool focuses on follow-up to the Innocenti Declaration and is strong in assessing the activities necessary to ensure optimal breastfeeding practices.
- *Process for the promotion of infant feeding (ProPAN)* developed by the Pan American Health Organization, it describes a step-by-step process that begins with quantitative identification of nutritional and dietary problems, and also with the collection of qualitative information on why these problems occur<sup>29</sup>. It ends with guidelines for the design and evaluation of an intervention to address the problems identified.
- *Designing by Dialogue: a programme planner's guide to consultative research for improving young child feeding*, developed by the Manoff Group and the Academy for Educational Development, it describes a systematic process to identify feeding problems, develop feeding recommendations, conduct recipe trials and trials of improved feeding practices and decide on interventions and delivery channels<sup>30</sup>.
- *linear programming* is a methodology that is useful in identifying the most optimal and feasible combinations of locally available foods to meet energy and nutrient gaps, and identify remaining gaps<sup>31</sup> (see accompanying article by Briend, page 36).





## STRENGTHENING HEALTH SERVICES TO PROTECT, PROMOTE AND SUPPORT INFANT AND YOUNG CHILD FEEDING

There is ample opportunity in current health and nutrition programmes to improve support for infant and young child feeding by integrating appropriate guidance into the delivery of care. The Essential Nutrition Action (ENA) approach identifies seven essential nutrition actions and six points of delivery<sup>a</sup>. ENA recognizes the opportunities for counselling as well as micronutrient supplementation, and can be a useful guide in the design and implementation of a minimum package of activities to improve nutrition in childhood<sup>32</sup>.

Unfortunately, infant and young child feeding is a neglected area in the basic training of health professionals worldwide. As a result, health workers often fail to support appropriate infant and young child feeding, and many studies have shown that mothers introduce artificial feeding because of health workers' advice. There is an urgent need to update their knowledge and skills through in-service and pre-service training approaches, and where possible this should be integrated within ongoing initiatives and programmes to reach rapid coverage.

An important example of a strategy that integrates feeding counselling with other aspects of childhood care is the WHO/UNICEF IMCI. The IMCI clinical guidelines for management of common childhood diseases require that the nutritional status of every child under two years of age be assessed as part of a routine evaluation of the child. Given its wide application in over 100 countries, IMCI is a key strategy to improve the basic knowledge and skills of facility and community-based health workers to support infant and young child feeding.

To establish a cadre of health professionals with more advanced skills to support infant and young child feeding, WHO and UNICEF also developed the: 40-hour Breastfeeding Counselling: A training course; the three-day HIV and Infant Feeding counselling course; and most recently the three-day Complementary feeding counselling: A training course<sup>33-35</sup>. These courses are fully compatible and complementary to each other. They can be usefully applied as an extension of IMCI training or as part of other health and nutrition related initiatives, to build a health system that is able to support all mothers in practising the best feeding choice and that has referral capacity for those mothers and children with serious feeding difficulties.

To make the efforts sustainable, investment in preservice training is indispensable. WHO is working successfully with a number of medical schools to define approaches for strengthening preservice training in child health, including infant and young child feeding. Planning and training materials are available for IMCI and are currently being extended with a manual for infant and young child feeding.

## MOBILIZING COMMUNITIES TO SUPPORT INFANT AND YOUNG CHILD FEEDING

Community groups, individuals and families can play a critical role in protecting, promoting and supporting appropriate infant and young child feeding. We have described the evidence that it is possible to mobilize communities and sustain the efforts. When interventions are designed in a participatory manner with the target group, built upon existing structures, integrated with the health system, and in partnerships with various sectors and groups, chances of success are great.

However, the experience of the BFHI has shown that it is not easy for health professionals to reach out and start working with community groups. Worldwide, few mother support groups were formed because of BFHI in spite of it being Step 10. It is therefore necessary that the global public health community mobilizes itself to make deliberate investments in community-based interventions, document the experiences and translate them into generic tools that can be easily disseminated, adapted and used.

## ADDRESSING THE NEEDS OF VULNERABLE GROUPS

The Global Strategy for Infant and Young Child Feeding clearly recognizes the special needs of vulnerable groups, such as infants of mothers who are HIV positive, low birth weight babies, children in emergencies and malnourished children. Further work is necessary to determine what the optimal feeding recommendations for children with special needs are and how they can be best implemented. In the area of HIV, work is ongoing to assess the transmission rates of HIV associated with exclusive breastfeeding. Guidelines are being developed for conducting formative research on alternative feeding options for mothers who choose not to breastfeed, and a review is being conducted with the aim to develop practical guidelines for complementary feeding of the non-breastfed child. Guidelines are also being finalized on feeding of low birth weight babies, and infant and young

<sup>a</sup> The ENA approach is based on taking key nutrition actions associated with improved health outcomes at the most relevant points of health service delivery contact. The seven ENA points include: 1) exclusive breastfeeding from birth to 6 months; 2) appropriate complementary feeding starting at six months along with breastfeeding up to 24 months or beyond; 3) appropriate feeding of infants and young children during and after illness; 4) adequate nutrition of women; 5) control of vitamin A deficiency; 6) control of anaemia through iron supplements and de-worming of women and children; and 7) control of iodine deficiency disorder. The six key points of health delivery contact include: 1) antenatal care; 2) delivery; 3) post-natal care/family planning; 4) immunization; 5) well-baby clinic; and 6) sick child visits.

child feeding in emergencies. A manual and training course for the management of severe malnutrition are available<sup>36</sup>. Recognizing the vulnerable groups and including specific actions to address their needs is another challenge that governments have to deal with when developing a comprehensive policy and plan of action.

## MONITORING AND EVALUATION

Development of successful interventions to improve child feeding practices requires appropriate instruments to assess current feeding practices and monitor impact of programmes designed to improve them. During the past decade, simple, programmatically relevant indicators of breastfeeding practices were developed to guide the planning, implementation and evaluation of breastfeeding programmes. Data were used not only at local levels, but also for international monitoring of trends and comparison. Their availability and use has been critical in mobilizing resources for advocacy and programme implementation.

Monitoring and evaluation has been a weak link in global efforts to address complementary feeding. The absence of a set of globally agreed indicators for assessing complementary feeding has been a seriously limiting factor leading to a lack of data in this field. At present, the timely complementary feeding rate is the only agreed global indicator for assessing complementary feeding. It has many shortcomings and gives little information on the factors affecting feeding practices. WHO in collaboration with the International Food Policy and Research Institute, UNICEF and other partners has initiated a programme of work to identify and validate indicators, and to assess energy and nutrient intakes and caregiver responsiveness during feeding<sup>37</sup> (see accompanying article by Ruel, page 20). Results that will identify a small set of universal indicators for global assessment and monitoring are expected to become available in 2004.

While this work is in progress, WHO, UNICEF, DHS and others will continue to gather data on infant and young child feeding as a means for calling attention to the global situation. WHO maintains an extensive database on infant and young child feeding rates that is based on information from published and unpublished studies. At present, it includes information from 1020 surveys conducted in 181 countries.

## RESEARCH AND DEVELOPMENT

There are still many questions that need an answer in the area of complementary feeding. For example, we have limited information on how variations in energy density, feeding frequency, food quantity and food variety affect total energy and nutrient intake. And we need to better understand the efficacy and effectiveness of fortified complementary foods, micronutrient-rich sprinkles and spreads in addressing dietary gaps, including optimal formulations and ration sizes, and effective approaches for their promotion and utilization. We also need to unify standards of nutrient requirements in early childhood as a basis for formulating sound feeding recommendations and promoting processed foods that meet quality standards. Importantly, we need to conduct operational research to identify the factors and processes that determine success of programmes to improve complementary feeding and translate them into concrete tools for policy-makers and programme planners. Participants in the Global Consultation on Complementary Feeding<sup>19</sup> identified a range of questions that need to be addressed, and it is hoped that the report will stimulate research and development by various institutions in the future.

## *Conclusion*

The period of complementary feeding is one of the most critical times for preventing malnutrition. Malnutrition in this age group is a major risk factor for childhood mortality and has important negative consequences for health later in life. The interventions to turn the tide are known, it is estimated that 25% of all childhood deaths could be prevented by interventions to improve breastfeeding, complementary feeding, zinc and vitamin A nutrition.

The time is ripe to call for increased investments. All Heads of State have committed to the MDGs for child survival and eradication of extreme poverty and hunger. These goals can only be achieved if a major indent is made in improving childhood malnutrition. The Global Strategy for Infant and Young Child Feeding provides a framework for action and intervention tools are available. The challenge is to implement them at sufficient levels of coverage to make an impact. This will require dramatic increases in commitment and resources. The global public health community should take responsibility to make the case using arguments that are not only compelling from a public health, but also an economic perspective.

No single government or agency can achieve this challenge alone. Partnerships are necessary as is sharing of tasks according to comparative strengths. WHO is committed to playing its part by conducting and stimulating relevant research, maintaining a global data base on child feeding practices and nutritional status, developing new interventions and related tools, and assisting governments in planning for and building capacity for their implementation. It is hoped that our combined strengths will enable the world to make a difference for the sake of children and their health.



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Most WHO documents are available on the website and can be retrieved from the following address [www.who.int/child-adolescent-health/nut.htm](http://www.who.int/child-adolescent-health/nut.htm)

## ***Can fortified complementary foods be socially marketed?***

***Chessa Lutter, PAHO***

Complementary foods of an adequate macro and micronutrient density are needed for optimal growth and development after six months of age when breastmilk can no longer fully satisfy infant nutritional requirements. Between 6 and 24 months, the requirements for iron and zinc are particularly difficult to satisfy in the absence of fortified foods or supplements. As a result, the prevalence of anaemia is higher during this age range than at any other time during the life cycle. The use of iron fortified complementary foods led to the elimination of iron deficiency anaemia as a public health problem in the United States. The fortification of milk distributed through social programmes reduced the prevalence of anaemia in Chile by over 60%, stimulating the implementation of similar programmes in other Latin America countries.

As iron supplementation programmes distributed through health services have failed to have the desired effect in preventing iron deficiency, renewed attention is being paid to other potential approaches of improving iron status among this vulnerable age group. These approaches include the promotion of products such as fortified complementary foods (including milk), micronutrient spreads that can be consumed directly or used as a condiment, micronutrient sachets that can be sprinkled on the regular complementary feeding diet, and FOODlets that can be crushed into complementary foods or taken directly as a supplement. Each product has advantages and disadvantages from a nutritional and cost perspective. All need continued efficacy and effectiveness research and comparative studies to provide a scientific basis for evaluating their potential to improve infant and young child nutrition.

The most perplexing question is how any of these products can reach the large numbers of infants and children who need them most, and who by definition are poor. Their commercial sale coupled with a comprehensive social marketing campaign is being discussed as a way to increase coverage and ensure sustainability. Attempts to commercially market fortified complementary foods in the 70s met with nearly universal failure. Since then, numerous lessons have been learned about social marketing techniques, which have resulted in the successful commercialization of contraceptives, oral rehydration solutions, condoms, water filtration systems, and other products that address important public health problems. Particularly important is the recognition that consumer demand is essential and the knowledge about how this could be generated.

Consumers are attracted to products that meet their perceived needs and appear to satisfy their wants and desires. Most snack foods and drinks, widely consumed by rich and poor alike, appeal to preferences concerning texture, flavour, taste, and color, ease of preparation and/or consumption, and hygiene. Perhaps the biggest errors in previous attempts to market fortified complementary foods were to position them in the market as a food for the poor and the failure to recognize that consumers who are poor do not have different preferences than those who are rich except that price functions as a gatekeeper to access.

Urbanization, female employment, and time constraints have increased the demand for easy-to-prepare foods as well as access to commercial markets. Whether or not fortified complementary foods, spreads, sprinkles, and/or FOODlets can be successfully socially marketed is an open question. However, it is likely to be one worth answering given their potential to reduce iron deficiency anaemia and meet other infant and young child nutritional needs.



## SUMMARY OF GUIDING PRINCIPLES FOR COMPLEMENTARY FEEDING OF THE BREASTFED CHILD\*

1. **DURATION OF EXCLUSIVE BREASTFEEDING AND AGE OF INTRODUCTION OF COMPLEMENTARY FOODS** Guideline: Practice exclusive breastfeeding from birth to six months of age, and introduce complementary foods at six months of age (180 days) while continuing to breastfeed.
2. **MAINTENANCE OF BREASTFEEDING** Continue frequent, on-demand breastfeeding until two years of age or beyond.
3. **RESPONSIVE FEEDING** Practice responsive feeding, applying the principles of psycho-social care. Specifically: a) feed infants directly and assist older children when they feed themselves, being sensitive to their hunger and satiety cues; b) feed slowly and patiently, and encourage children to eat, but do not force them; c) if children refuse many foods, experiment with different food combinations, tastes, textures and methods of encouragement; e) minimize distractions during meals if the child loses interest easily; f) remember that feeding times are periods of learning and love—talk to children during feeding, with eye to eye contact.
4. **SAFE PREPARATION AND STORAGE OF COMPLEMENTARY FOODS** Practice good hygiene and proper food handling by a) washing care givers' and children's hands before food preparation and eating, b) storing foods safely and serving foods immediately after preparation, c) using clean utensils to prepare and serve food, d) using clean cups and bowls when feeding children, and e) avoiding the use of feeding bottles, which are difficult to keep clean.
5. **AMOUNT OF COMPLEMENTARY FOOD NEEDED** Starting at six months of age with small amounts of food and increase the quantity as the child gets older, while maintaining frequent breastfeeding. The energy needs from complementary foods for infants with "average" breastmilk intake in developing countries are approximately 200 kcal per day at 6-8 months of age, 300 kcal per day at 9-11 months of age, and 550 kcal per day at 12-23 months of age. In industrialized countries these estimates differ somewhat (130, 310 and 580 kcal/d at 6-8, 9-11 and 12-23 months, respectively) because of differences in average breastmilk intake.
6. **FOOD CONSISTENCY** Gradually increase food consistency and variety as the infant gets older, adapting to the infant's requirements and abilities. Infants can eat pureed, mashed and semi-solid foods beginning at six months. By eight months most infants can also eat "finger foods" (snacks that can be eaten by children alone). By 12 months, most children can eat the same types of foods as consumed by the rest of the family (keeping in mind the need for nutrient-dense foods, as explained in #8 below). Avoid foods that may cause choking (ie, items that have a shape and/or consistency that may cause them to become lodged in the trachea, such as nuts, grapes, raw carrots).
7. **MEAL FREQUENCY AND ENERGY DENSITY** Increase the number of times that the child is fed complementary foods as he/she gets older. The appropriate number of feedings depends on the energy density of the local foods and the usual amounts consumed at each feeding. For the average healthy breastfed infant, meals of complementary foods should be provided 2-3 times per day at 6-8 months of age and 3-4 times per day at 9-11 and 12-24 months of age. Additional nutritious snacks (such as a piece of fruit or bread or chapatti with nut paste) may be offered 1-2 times per day, as desired. Snacks are defined as foods eaten between meals—usually self-fed, convenient and easy to prepare. If energy density or amount of food per meal is low, or the child is no longer breastfed, more frequent meals may be required.
8. **NUTRIENT CONTENT OF COMPLEMENTARY FOODS** Feed a variety of foods to ensure that nutrient needs are met. Meat, poultry, fish or eggs should be eaten daily, or as often as possible. Vegetarian diets cannot meet nutrient needs at this age unless nutrient supplements or fortified products are used (see #9 below). Vitamin A-rich fruits and vegetables should be eaten daily. Provide diets with adequate fat content. Avoid giving drinks with low nutrient value, such as tea, coffee and sugary drinks such as soda. Limit the amount of juice offered so as to avoid displacing more nutrient-rich foods.
9. **USE OF VITAMIN-MINERAL SUPPLEMENTS OF FORTIFIED PRODUCTS FOR INFANT AND MOTHER** Use fortified complementary foods or vitamin-mineral supplements for the infant, as needed. In some populations, breastfeeding mothers may also need vitamin-mineral supplements or fortified products, both for their own health and to ensure normal concentrations of certain nutrients (particularly vitamins) in their breastmilk. Such products may also be beneficial for pre-pregnant and pregnant women.
10. **FEEDING DURING AND AFTER ILLNESS** Increase fluid intake during illness, including more frequent breastfeeding, and encourage the child to eat soft, varied, appetizing, favorite foods. After illness, give food more often than usual and encourage the child to eat more.

\*Guidelines are available in full from [www.paho.org](http://www.paho.org)  
see Publications section this issue for review

## PROGRESS IN DEVELOPING INDICATORS TO MEASURE COMPLEMENTARY FEEDING PRACTICES

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Progress in improving infant and young child feeding practices in the developing world has been remarkably slow. This is due to several factors. First, complementary feeding practices encompass a number of interrelated behaviours that need to be addressed simultaneously. Unlike exclusive breastfeeding, which can be summarized into one variable, measuring the quality of complementary feeding practices implies assessing a variety of practices simultaneously. Child feeding practices are also age-specific within narrow age ranges, a factor that adds to the complexity of measurement. Finally, the lack of clear international recommendations for some aspects of complementary feeding has prevented the development of universal indicators and the selection of cut-off points to define optimal feeding practices. Thus, one of the main obstacles to progress in improving complementary feeding practices has been the lack of simple, valid, and reliable tools to assess the quality of feeding practices and to target, monitor, evaluate and document successful interventions.

Under the leadership of WHO, an initiative to develop indicators of complementary feeding was set in place in order to accelerate progress in improving infant and young child complementary feeding practices in developing countries. This, in turn, is expected to provide major impetus to improving children's nutrition, development and health and in achieving the Millennium Development Goal of cutting child mortality by two-thirds by 2015. The initiative is thus timely.

Moreover the new *Guiding Principles For Complementary Feeding of the Breastfed Child* published in 2003<sup>1</sup> has been particularly useful in providing a framework for addressing the multi-dimensional aspects of complementary feeding. It provides guidance and scientific rationale for ten different aspects that constitute optimal complementary feeding practices for the breastfed child. It is within this framework that the process of developing a set of population-level indicators of complementary feeding practices was initiated. The main goal of this work, which is summarized below, was to kick off the discussion by reviewing available evidence and proposing a series of possible indicators to measure some of the most critical aspects of infant and young child feeding. The emphasis was on identifying simple indicators for use in large surveys or in programme contexts to assess current practices and to target, monitor and evaluate the impact of interventions.

Indicators were reviewed for the following aspects of complementary feeding of 6-23 month-old children: 1) continued breastfeeding; 2) energy from complementary foods; 3) feeding frequency; 4) nutrient density of complementary foods; 5) safe preparation and storage of complementary foods; and 6) care during feeding. An equally important goal of this work was to highlight research priorities and to describe possible approaches to validate the proposed indicators.

### ***Characteristics and performance criteria of indicators***

Indicators are data collected through measurement, observation, or interview that describe an underlying phenomenon. In the case of complementary feeding practices, indicators are required to characterize care giver feeding behaviours and the child's usual dietary intake to evaluate whether it is adequate for maintaining health and supporting optimal growth and development.

In developing a set of possible indicators, it is important to consider key performance issues, such as validity, reliability and responsiveness. The main threats to indicator performance must also be recognized. These are systematic biases and reactivity (which affect both validity and reliability), and random error and intra-individual and day-to-day variability (which affect reliability). These aspects are discussed in the background document describing the process of developing indicators of complementary feeding practices<sup>2</sup>, along with several other aspects related to the application of the indicators, namely:

1. the importance of distinguishing between universal vs context specific indicators, and population- vs individual-level indicators
2. the need to create age-specific indicators for complementary feeding practices and to select an appropriate timeframe for recording information
3. the potential usefulness of using summary indices rather than numerous individual indicators for different purposes.

Finally, the strengths and weaknesses of different measurement approaches (eg, observation versus recall methods) are discussed.

### ***Examples of possible indicators of adequacy of complementary feeding practices***

The indicators proposed apply to 6-23 month old breastfed children and are to be used for population, as op-



posed to individual-level inferences. They cover the six dimensions of complementary feeding practices listed above. In each case, the most precise indicators and measurement approaches (or gold standard methods) are described. This is followed by a discussion of potential proxy indicators and measurement methods that might be easier to collect and potentially more useful for programmes and large-scale surveys.

Examples of proposed indicators for the different dimensions of complementary foods practices are as follows:

- *continued breastfeeding*: percentage of 6-23 month old children breastfed yesterday. Note: other age groups can be used as follows: 6-8, 9-11, 12-14, etc. if sample size allows; this indicator is based on maternal recall during the previous 24-h.
- *energy intake*: Average energy density of main complementary foods fed to children 6-8 months and 9-11 months of age, respectively. Note: This indicator is based on data collected at the group- or community-level, using group recipe trials.
- *feeding frequency*: percentage of children 6-8 months and 9-23 months fed complementary foods at least two times/d, and three times/d, respectively. Note: This indicator is based on maternal recall, usually for the previous 24-h. Intake and frequency of snacks should also be measured and used as an indicator.
- *nutrient adequacy*: percentage of children 6-23 months old who consumed in previous 24-h: a) animal products; b) dairy products; c) vitamin A-rich foods; d) fortified products.
- *mean number of foods (or food groups) consumed in previous 24-h (an indicator of dietary diversity)*. Note: these indicators are based on the assumption that dietary diversity and/or intake of specific groups of nutrient-dense foods predict nutrient density of the diet. This assumption has to be verified through research in different contexts.
- *safe preparation and storage of complementary foods*: a series of indicators related to hand-washing, safe storage and rewarming of cooked foods, use of clean utensils to prepare and serve food to the child, avoidance of baby bottles and use of safe water used in food preparation is proposed. Note: collection of hygiene information based on reporting is highly subject to systematic biases resulting from over-reporting of good practices, because most populations have at least some knowledge of appropriate hygiene practices.
- *care during feeding*: Two types of indicators are proposed to measure care during feeding. Indicators to assess: 1) feeding styles (responsive, controlling, laissez-faire behaviours); and 2) psychosocial care during feeding, as defined in the "Guiding Principles" (eg, feed infants directly and assist older children, be responsive to hunger and satiety cues, feed slowly and patiently, encourage the child to eat, utilize various strategies when child refuses to eat, feed in a protective environment, etc).

### ***Research and indicator validation priorities***

The types of research and validation needed for the development of simple, yet valid and reliable indicators of the selected complementary feeding practices reviewed here include the following:

- *for breastfeeding frequency*: research is needed to assess whether feeding frequency accurately differentiates between children with low vs. high breastmilk intake. Research should also test the accuracy of recall compared to observational approaches.
- *for energy intake from complementary foods*: the group recipe trial method proposed to assess average energy density of main complementary foods needs to be validated. Variability within and between recipes, households, and population groups needs to be assessed. The underlying assumption that at least infants 6-11 months of age receive most of their energy from few complementary foods also needs to be verified in a variety of contexts.
- *feeding frequency*: recall methods should be validated against observations to assess feeding frequency. Recall methods should also be developed to accurately differentiate between snacks and meals.
- *nutrient adequacy*: the usefulness of dietary diversity measures to predict nutrient adequacy of complementary foods needs to be validated. A number of methodological aspects also still need to be addressed to design accurate and reliable dietary diversity indicators for complementary foods.
- *safe preparation and storage of complementary foods*: the main research needed in this area is to assess the validity of recall approaches and to try to design rapid observational methods such as spot check instruments that would minimize recall biases.
- *Care during feeding*: there is an urgent need to develop and validate indicators of feeding behaviours within the context of psychosocial care during feeding. Indicators based on caregiver recall need to be developed and tested against structured observations.

### ***Conclusion***

The initiative to develop indicators of complementary feeding practices is still at an early stage. The next crucial step in the process is to carry out the required validation studies and then single out the most promising indica-

tors and identify a manageable sub-set of such indicators for further testing in the field. In a first stage, a significant amount of validation research can be carried out using existing data sets. Collaboration with private voluntary organizations and other institutions operating in the field will be required for the following step, which will involve field testing and validation of the promising indicators in a wide variety of populations with different sociocultural characteristics and dietary patterns. Research to develop and validate simple tools to assess the crucial psychosocial care aspects of complementary feeding and their importance for child intake, nutrition, growth, development and health outcomes is also urgently needed.

It is hoped that the development of a set of simple indicators of complementary feeding practices will trigger additional investments and programmatic efforts to achieve optimal feeding practices among infants and young children. Evidence from well-designed and carefully conducted effectiveness trials in a variety of settings is also urgently needed to identify constraints and success factors, and to reach the ultimate goal of accelerating progress in improving infant and young child feeding practices worldwide.

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## INSIGHT INTO BREASTFEEDING AND COMPLEMENTARY FEEDING PRACTICES: A CASE STUDY FROM INDONESIA

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NSS Technical Team<sup>a</sup>

Indonesia has a population of more than 231m people, 28% of whom live in urban areas, including some in very poor conditions. While much improvement has been made in nutritional status and health over the past 50 years, malnutrition (eg. stunting, anaemia, low serum levels of vitamin A) is still highly prevalent, particularly among young children and pregnant and breastfeeding mothers<sup>1</sup>. The crisis that was set off by El-Nino and Asia's economic crisis in late 97 has put many people below the poverty line and worsened the situation of already vulnerable groups of the population. During these times, appropriate feeding practices are of even greater importance for the survival, growth, development, health and nutrition of infants and children.

This paper reports on current practices and opinions regarding breastfeeding and complementary feeding among 70% of Indonesia's rural population and among the urban poor population of four large cities in Indonesia. Data on this topic are regularly collected by the Helen Keller International (HKI)/Government of Indonesia (GOI) Health and Nutrition Surveillance System (NSS). Data shown here were collected from data collection rounds between December 01 and May 02 from the provinces of West Sumatra, Lampung, Banten, West Java, Central Java, East Java, Lombok and South Sulawesi and the urban poor populations of Jakarta, Surabaya, Semarang and Makassar. Seventy percent, or more than 160m people, of Indonesia's population lives in the above mentioned provinces. The data were collected through random cluster sampling, and the rural data shown are representative of this population. Data shown in the graphs have been weighted, thus larger provinces contribute more to the average shown than smaller provinces. More information and data for individual provinces can be found in HKI's Breastfeeding and Complementary Feeding Report<sup>2</sup>.

NSS data were analyzed for two reasons: a) lack of recent data on current breastfeeding and complementary feeding practices, and opinions in Indonesia, and b) observations that current practices might not be in-line with the international and national recommendations.

### ***Breastfeeding***

WHO recommends exclusive breastfeeding for the first six months of life and continued breastfeeding until the age of two years and beyond<sup>3</sup>. An earlier introduction of complementary foods is considered unnecessary and would put the child at risk of infection without providing any nutritional benefits when compared to breastmilk. At the time of data collection, the recommendation in Indonesia was (and still is) to introduce complementary foods from the age of four months. The GOI is currently reviewing this recommendation.

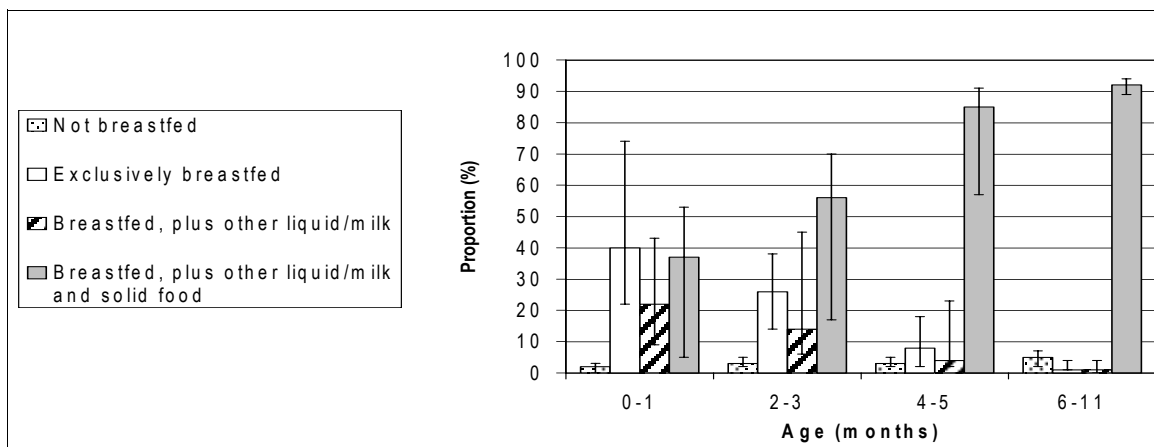
NSS data found that practices of exclusive breastfeeding were very different from both the international and national recommendation (see Figure 1a and 1b, next page). Of children less than two months of age in rural and urban areas, only 27-40% were exclusively breastfed, while 37-41% already received solids in addition to breastmilk and/or other liquids. The proportion of infants less than two months of age that was not breastfed at all was small (<5%).

At the ages of 4-5 months, less than 10% of rural and urban children were exclusively breastfed. While 60% of mothers thought that complementary food should be introduced at 4-5 months of age, many of them had introduced it earlier. In fact, no more than 11% of mothers thought that complementary foods should be introduced before the age of two months, however, 31% in rural and 38% in urban areas had already introduced it before that age. Although the majority of children were introduced to other liquids and foods long before reaching the recommended age, less than 15% were weaned before the age of one year and 49-67% were weaned after their second birthday. Less than 40% of women initiated breastfeeding within the first two hours after birth, but 85% started on the first day.

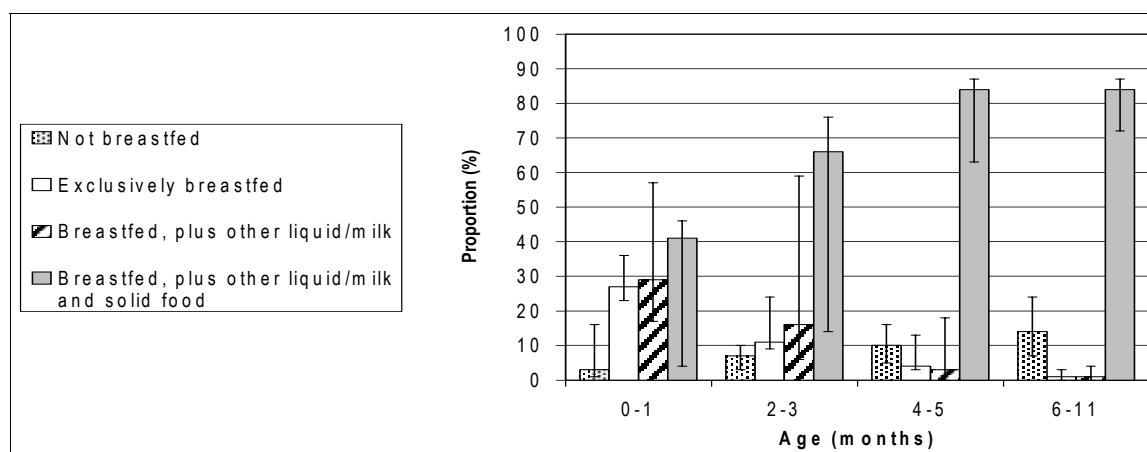
The main question arising from these data is why so many children are introduced to other foods, besides breastmilk, at such an early age. While some mothers will have compelling reasons, the majority may not have a clear reason as most introduced complementary foods earlier than what they considered an appropriate age. There could be a number of reasons, such as convenience of not having to breastfeed all the time, the idea that other, mainly commercial, foods for infants are better than their own breastmilk, and the influence from other people, including health care personnel (see below).

<sup>a</sup> NSS Technical Team, responsible for a large portion of data-analysis and data-collection on this topic: Gudrun Stallkamp, Jutta Diekhans, Lynnda Kiess, Mayang Sari, Elviyanti Martini, Siti Halati, Ame Stormer, Soewarta Kosen

**Figure 1a**  
Breastfeeding practices of children under 12 months in rural areas (n=21,281).



**Figure 1b**  
Breastfeeding practices of children under 12 months in urban poor areas (n=3,754)



Bars represent weighted average while error bars give lowest and highest prevalence among provinces or urban poor sites surveyed

## Use of prelacteals and formula milk

It is internationally recommended that nothing but breastmilk be provided during an infant's first six months of life. Providing other liquid or food in addition to breastmilk during the first six months could potentially be harmful (eg, risk of infection, poorer stimulation of breastmilk production, etc), and should only be done if medical reasons exist.

It was found that the majority of children (50-75%) received other liquid/food during their first seven days of life. Formula milk was the most common (22% in rural areas and 52% in urban poor areas), followed by honey (10-14%). Other foods that were given during those first seven days varied by province and included plain water, water with sugar, liquids containing young coconut, coffee and tea. Some of these foods may have been prelacteals, while others constitute an early introduction of other liquids. In almost all cases, these other foods are provided in addition to breastmilk.

The highly prevalent consumption of formula milk shortly after birth seems to be largely related to the place of delivery (see Figures 2a and 2b, next page). Among mothers who delivered at home, no more than 9% received or purchased a sample of formula milk or received information about it. In rural areas approximately 60% of mothers delivered at home, while in urban areas this was only 12%. Among mothers who delivered at a midwife's house, maternity clinic or hospital/maternity ward in urban areas (78% of all deliveries), 26% received a free sample, 29% purchased a sample and 7% received information about formula milk. In rural areas, 35% of women delivered at these facilities and approximately 10% received a free sample, 25% purchased a sample and 10% received information about it. For women who delivered at a public health centre, locally known as a *puskesmas*, (11% in urban areas, 4% in rural areas) the proportions were slightly lower.

These findings about receipt/purchasing of formula milk at the place of delivery are disheartening. While most women do initiate breastfeeding and also continue for a long time, only a very low proportion practices exclusive breastfeeding according to the national and international recommendations. This low rate of exclusive breastfeeding might be partly related to the receipt or encouragement to purchase formula milk by health care workers, in particular the midwife, at the place of delivery. The question is why health care providers, particularly midwives, give out or sell these samples. It could be a form of client binding as most of these facilities are privately owned and strive to get more customers. The Indonesian Code on the Marketing of Breast-milk Substitutes, based on the International Code, prohibits free distribution of these products by the industry to health care

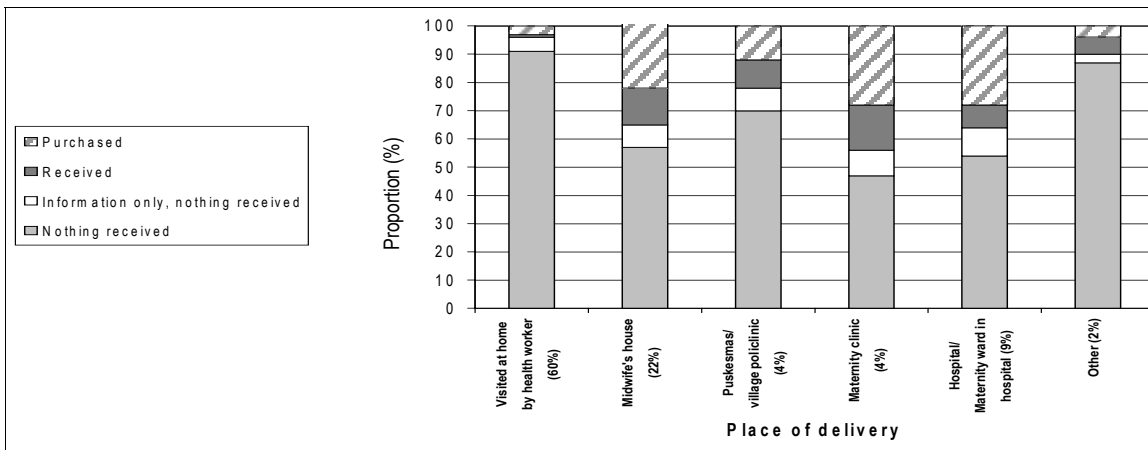


Figure 2a  
Distribution of where mothers delivered in rural areas (n=8,726) and whether they received a sample of formula milk.

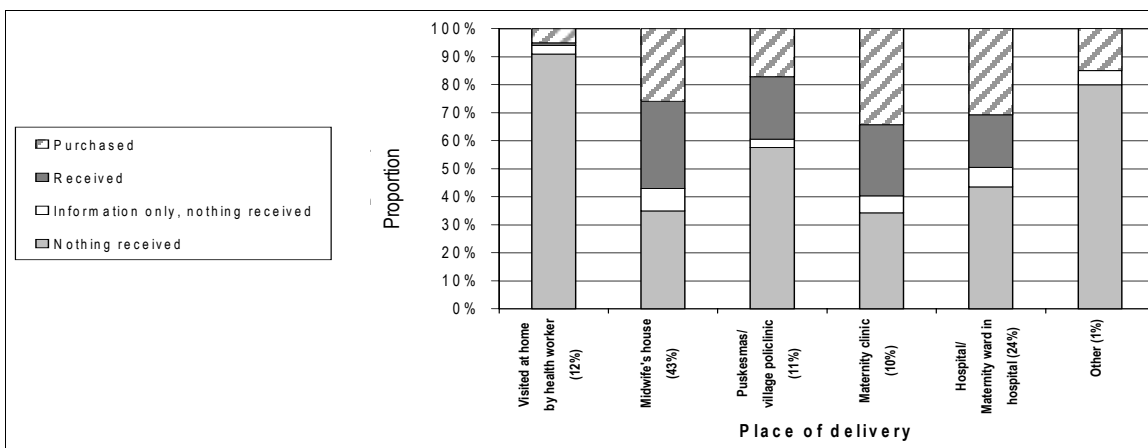


Figure 2b  
Distribution of where mothers delivered in urban areas (n=1,641) and whether they received a sample of formula milk.

workers as well as to mothers. But it does not have a specific clause as to whether or not health care workers and facilities are allowed to provide such products for free or at cost. Prelacteal use should be discouraged.

### ***Complementary feeding, including industrial milk***

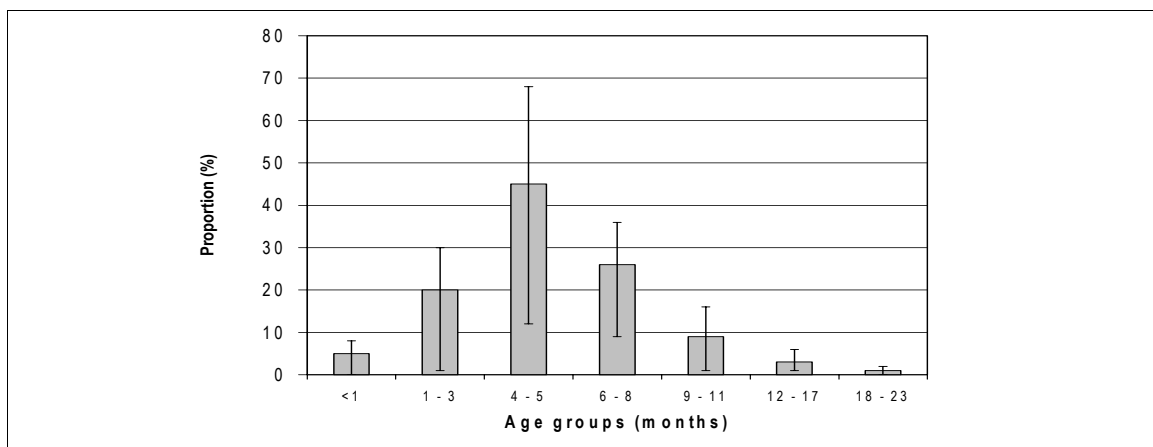
Commercial instant baby foods may be a good source of micronutrients for young infants from the age of six months. HKI has recently reported, also based on NSS data, that anaemia, largely due to iron deficiency, already constitutes a problem among Indonesian infants aged 3-5 months<sup>4</sup>. This further illustrates the need for supplements at a young age, as well as interventions that target mothers during pregnancy and lactation. LINKAGES has also recommended that after six months of age young children who cannot meet all their micronutrient requirements through their normal diet, fortified foods and/or supplements be added<sup>b,5</sup>.

Mothers were asked what they thought was the best first complementary food to give to their children and what first foods were actually given. The majority of mothers (61-70%) thought that commercial instant baby food was the best first complementary food, followed by fruit and rice porridge (10-15% each). The first food actually given by the mothers was commercial instant baby food (41-46%), fruit (24-35%), rice porridge (11-15%) and milk (4-10%). The very widespread idea that commercial instant baby food is the best first food for a baby is most likely related to effective commercial advertising and easy availability of small portions, even in remote places. Because this food is high in micronutrients and easy to swallow and digest, the mothers may be right. However, it was also found that children were introduced to this food at a very young age (see Figures 3a and 3b, next page). Consumption was highest among infants 4-5 months of age (67% in urban and 45% in rural areas), but already 32% of infants aged 1-3 months in urban areas and 20% in rural areas consumed instant baby food in the week prior to the interview.

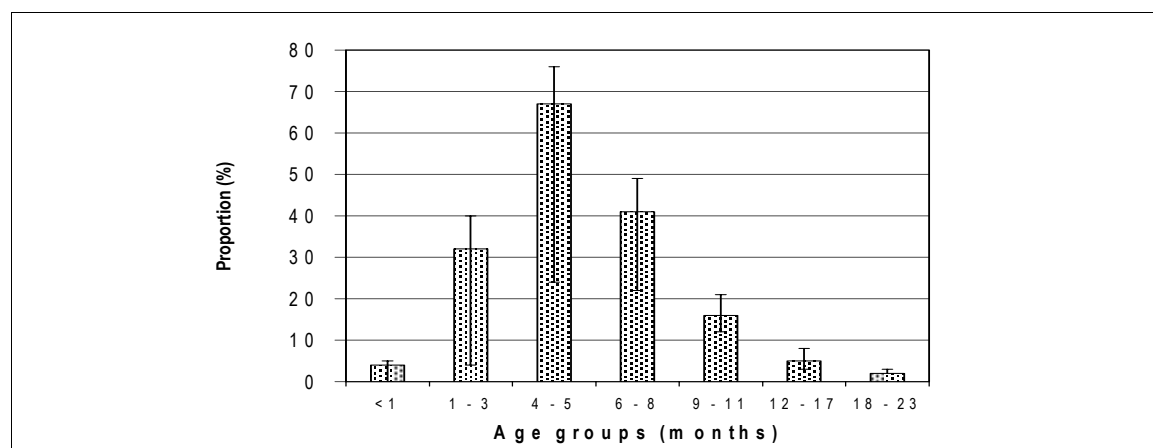
In urban poor areas 30-40% of infants 0-11 months of age consumed industrial milk (any commercially available milk, ie, formula, powdered, condensed, flavoured or fresh milk) in the week prior to the interview, while this was 15-20% in rural areas. Among children ages 12-59 months, 40-60% in urban poor areas and 25-35% in rural areas consumed industrial milk. Of the children younger than 18 months in urban areas and 24 months in rural areas who consumed industrial milk, the majority still received breastmilk as well. Among the older children, the majority was no longer breastfed.

<sup>b</sup> LINKAGES: Breastfeeding, Complementary Feeding, and Maternal Nutrition Program. Funded by the US Agency for International Development and managed by the Academy for Educational Development.

**Figure 3a**  
Percentage of children within different age groups in rural areas (n=40,942) consuming commercial instant baby food during previous week.



**Figure 3b**  
Percentage of children within different age groups in urban areas (n=7,417) consuming commercial instant baby food during previous week.



Consumption levels of commercial instant baby food and industrial milk were high. High levels of consumption of formula milk among infants less than four months of age (49.5%) have also been found in the city of Bogor, West Java<sup>6</sup>. Why women decide to give a combination of breastmilk and industrial milk is not known; it might be related to practical reasons or because mothers were introduced to it soon after delivery. In addition, more information is needed about whether mothers are feeding milk that is appropriate for the age of the child, whether it is prepared appropriately (hygienically, as well as the right amount of powder per volume of water), how frequently it is given, and what amount is being fed.

The findings presented here have been disseminated in Indonesia and abroad through HKI's *Breastfeeding and Complementary Feeding Report*<sup>2</sup>. The Ministry of Health is now designing a 'Back to Breastfeeding' campaign and the Indonesian Breast Feeding Promotion Foundation has stepped up its efforts to promote exclusive breastfeeding and monitor the use of formula milk. Below is a summary of the main findings and issues presented above.

## Main findings

1. More than 85% of infants received colostrum and a total of 75-85% of infants were breastfed for longer than 18 months. However, only 27-42% of infants younger than two months were exclusively breastfed.
2. During the first week of life, 50-75% of infants received other liquids.
3. In rural areas 22% and in urban poor areas 52% of infants received formula milk during their first seven days of life, largely when delivery was at a hospital, midwife's house or maternity clinic. While Indonesia's Code on Marketing of Breast-milk Substitutes prohibits the industry to provide free formula samples to mothers, there is no clause for conduct by health care workers.
4. Commercial instant baby food was consumed by 20-35% of infants aged 1-3 months old, and by 45-70% of infants aged 4-5 months old. These are well-balanced foods and can help combat anaemia. However, the appropriate age group for these foods (six months and above) is not clearly communicated to the mothers, neither by industry nor by health-care workers.
5. Recent data from breastfed Indonesian infants ages 3-5 months has shown that 35-40% suffered from anaemia<sup>4</sup>. This means that, apart from promoting breastfeeding, other micronutrient interventions are necessary. These should also target pregnant and breastfeeding mothers.
6. The NSS data enable the monitoring of feeding practices, infant and child nutritional status, and assessment of impact of changes with regard to regulations and policies on breastfeeding and complementary feeding.



## Acknowledgement

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## GUATEMALA LAUNCHES THE AIEPI AINM-C STRATEGY TO IMPROVE CHILD HEALTH AND NUTRITION

Elena Hurtado and Peggy Koniz-Booher, Calidad en Salud

In February 2002, the Guatemalan Ministry of Health, with technical assistance from URC/Calidad en Salud<sup>a</sup>, decided to formally adopt the Integrated Care for Children and Women at the Community Level (Spanish acronym AIEPI AINM-C). The AIEPI AINM-C greatly expands on the integrated community child health approach (Spanish acronym AIN) by combining it with community Integrated Management of Childhood Illness (IMCI), maternal and neonatal health, and family planning. The overall structure of this strategy was outlined in the Tegucigalpa Declaration, signed by the Minister of Health immediately following a field visit to Honduras by key Ministry and NGO personnel. A proposal for the conceptual basis of the AIEPI AINM-C strategy was developed with the support of Calidad en Salud, and then fine-tuned by an interagency taskforce through a consensus building process.

AIEPI AINM-C aims to reduce morbidity and mortality among women and children (including malnutrition in children) by maximizing access to quality care services at three levels—communities, health posts and centres, and hospitals. The strategy includes two complementary and interrelated components: 1) IMCI and maternal care, and 2) growth monitoring and promotion, including illness prevention at home and in the community. It complements the Ministry of Health's ongoing extension of coverage model by

- encouraging active community participation in health care delivery
- engaging community leaders in the promotion of behaviour change, and
- strengthening the skills of community health agents in the analysis of the nutritional problems and factors that influence nutrition at the community level.

The AIEPI AINM-C integrated case management component focuses on training community facilitators who detect, treat and promptly refer complicated cases of childhood illnesses of children under five years (diarrhoea and respiratory disease) to medical professionals in clinics and hospitals. This component also develops community and family emergency plans for the transportation of these complicated cases. Counselling parents and family care takers to adopt better practices at home so as to treat and prevent illnesses and nutritional problems is equally as important. Adding to the traditional elements of community IMCI, this component also includes health care for neonates, as well as family planning and care for women during pregnancy, labour and during the post-partum period. Two protocol/manuals and other counselling and IEC materials guide community facilitators through integrated case management and counselling of care givers during consultations to community centres.

The growth promotion and illness prevention component of AIEPI AINM-C aims to strengthen community outreach activities under the extension of coverage model. Monitoring and promoting the growth of all children under two years of age is seen as the key intervention. Other interventions, such as management of childhood illnesses in children under five years, also contribute to growth promotion. Weighing sessions are designed to bring care givers from a given sector or community together on a monthly basis. This creates opportunities to deliver feeding and health education messages through individual counselling, group health talks, demonstrations and follow-up home visits. Growth promotion requires advice on breastfeeding and complementary feeding, emphasizing the timely introduction and improved combination and preparation of local foods.

This article highlights key elements in the process to put into practice the AIEPI AINM-C strategy in Guatemala, particularly the growth promotion and illness prevention component. Key elements are not necessarily presented in the order of their importance or chronologically, but all have fundamentally contributed to the implementation of this promising approach to improve child health and nutrition in Guatemala.

### *Political support*

Although child malnutrition rates in Guatemala have declined somewhat over the past 15 years, the prevalence of stunting remains the highest in Latin America and the Caribbean. Further, the absolute number of malnourished children remains high due to the increase in population. Higher malnutrition rates are found amongst indigenous Maya populations. A nutritional crisis in 2001 made the Ministry of Health focus on the need for more resources for prevention strategies and the promotion of healthy behaviours at the community level. A growth monitoring

<sup>a</sup>Calidad en Salud is a technical assistance programme designed to support the Guatemala Ministry of Public Health and Social Assistance (MSPAS) and the Guatemalan Social Security Institute (IGSS). Calidad en Salud is managed by University Research Co. LLC (URC) with the collaboration of four subcontractors: JHPIEGO, Engender Health, the Population Council and the Centre for Communication Programs of Johns Hopkins University. The programme is financed by USAID, under contract No. HRN-I-01-98-00035-00 of Agreement 520-0428.



system at the community level that would allow for early detection of nutritional deterioration and prevention of emergencies was needed. The national response to the crisis was to use the extension of coverage model (see below) as the community platform and to strengthen that model through the adoption of the AIEPI AINM-C strategy.

### **Structure**

To address continuing concerns about low levels of health care coverage, especially in rural, isolated communities throughout Guatemala, the Ministry of Health initiated a strategy to expand basic services through ambulatory medical teams contracted and supervised by local NGOs. This model, known as extension of coverage, emphasizes the participation of community volunteers and the community itself in the delivery of services. The system provides basic health services through local NGOs under contract by the Ministry of Health and basic health teams composed of ambulatory physicians, institutional facilitators, community facilitators, community health volunteers known as *vigilantes*, and traditional midwives. The system currently operates nationwide with 116 NGOs and an active network of over 3,000 community centres, 275 ambulatory physicians, 342 institutional facilitators, 1,663 community facilitators and more than 20,000 health *vigilantes*. This model covers an estimated 3m people in a country whose estimated population is 11m.

Several of the national norms established by the extension of coverage model were changed to accommodate the AIEPI AINM-C. Notably, growth monitoring and promotion, which was theoretically carried out by institutional facilitators, is now carried out by health *vigilantes* within their community sector (made up of 20 households). Community-based distribution of micronutrients also needed to be established to provide an incentive for mothers to bring their children for monthly growth monitoring. *Vigilantes* in each community started working as a team and in collaboration with traditional midwives to enroll children from birth. New working relationships required flexibility in the application of existing national norms. For example, family planning, which had not been included in the original basic package of extension of coverage services, became an integral part of the counselling provided by all members of the health care team.

### **Benchmarking**

Regional experiences with community IMCI and other strategies were reviewed as part of a "benchmarking" process. The field visit to Honduras, for instance, was organized for key Ministry of Health and NGO personnel to review that country's successful experience with AIN. This model concentrates on training community volunteers to monitor and promote the growth of children under two years of age. It received international attention for improving a number of knowledge and behaviour variables and its potential impact in reducing childhood malnutrition. Benchmarking was also used to identify best practices and lessons learned in IEC/behaviour change communication strategies and community participation methodologies.

### **Formative and operations research**

The Ministry of Health, with support from Calidad en Salud, designed and carried out recipe trials and new trials of improved practices in 2001. This subsequently helped to define the contents of young child feeding counselling under the AIEPI AINM-C strategy. Infant and young child feeding guidelines include specific advice based on the age and growth (adequate or inadequate) of an individual child, as well as advice on feeding during and after an illness episode. For instance, recipes combining corn dough (the staple), black beans and oil, or corn dough, carrots and oil are recommended for children starting at age six months. The 9-11 month old child can eat black beans, egg and oil or maize dough and dark green leaves and oil. Chicken liver is promoted to improve the quality of the diet. "Good snacks" such as tortilla and black beans, sweet bread or a banana are recommended. The convalescent child should receive an extra snack a day.

Under the AIEPI AINM-C strategy, the national policy shifted from focusing on nutritional status indicators such as low weight-for-age (reflecting total past of the child), to an indicator sensitive to recent changes in the child's health and nutrition, such as monthly weight gain. This initially generated strong opposition from the Guatemalan nutrition community, but the Ministry of Health and Calidad en Salud conducted operations research on growth monitoring in the area of the Ixil Triangle. The aim of this research was to test two alternative methods of classifying children as growth faltering:

- observation of the growth trend over a two month period to determine failure to gain weight or actual weight loss, and
- the use of a minimum expected weight table (in use in the AIN programmes in Honduras and Nicaragua), whereby children who gain less than a minimum amount of weight the previous month are classified as growth faltering or "not growing well".

The effects of these two growth-monitoring methods on the proportion of children classified as growth faltering was documented by this research. The performance of health *vigilantes*, their acceptance and mothers' acceptance of these different approaches were also studied. The research found using a minimum expected weight gain table in monthly weight monitoring adequate and acceptable. Additional research conducted by two international con-

sultants recommended a new table specific to Guatemala. Consequently, the "child card" officially used in Guatemala was modified to reflect these changes. The Ixil Triangle research also provided an important opportunity to pre-test aids and educational materials for community health workers. These included a *vigilante* notebook for registering weights, a series of bound pictorial counselling cards and specific take-home messages for mothers and care givers.

## ***Systems approach***

A systems approach in the design of the AIEPI AINM-C strategy considered all major subsystems necessary for its successful implementation. These included the following:

*Training*—Although training in "cascade" fashion has many limitations, it was considered the only feasible way to reach the large number of health area and health district personnel, NGOs, ambulatory physicians, institutional facilitators, community facilitators and health vigilantes. Training and participant manuals were prepared for the two separate components of AIEPI AINM-C (the integrated management component and the promotion and prevention component). Three training modules were developed and are currently being used for the growth promotion and illness prevention component: 1) growth monitoring and promotion, 2) illness treatment and prevention, and 3) maternal and neonatal health and family planning. In less than one year's time, 12,327 health vigilantes have been trained in module one, most of whom are already conducting weight monitoring sessions.

*Behaviour change communication*—Three national Information, Education, Communication (IEC) or behaviour change communication strategies that had been previously developed by an IEC-dedicated interagency technical group and Calidad en Salud (family planning, IMCI and maternal and neonatal health) were integrated into the overall AIEPI AINM-C. Fifty very specific behaviours (not behaviour clusters as are defined elsewhere) were identified for mothers and care givers. Further, a series of colourful pictorial counselling materials were designed and tested for use by low literacy community volunteers in monthly weighing sessions, home visits to mothers of children with inadequate growth, and group talks with recipe demonstrations. In addition, recall leaflets, referral leaflets, and a child card for distribution to care givers were produced. A poster where growth data is summarized helps discuss the problem of inadequate growth in "at risk" communities and draws a local plan of action following a specific community participation methodology. Involving several programmes from the Ministry of Health and all major NGOs in the process of designing, testing and producing these strategies and materials has ultimately proved extremely rewarding in the degree of national ownership that has been achieved. This inter-governmental and interagency collaboration, however, has taken a considerable amount of time to achieve, and consensus has not always been easy to arrive at.

*Logistics*—For the integrated management component of the strategy, it was important to work out the issues related to procuring basic medicines, contraceptives and other supplies. For the promotion and prevention component it was critical to distribute weighing scales—one for every four *vigilantes*. Even with considerable planning and some external contracted assistance, it has been a difficult process to distribute materials. The lack of personnel to count, package and transport educational and counselling materials, for example, has been a constraint. Obtaining information from the field concerning the number of personnel to be trained and establishing training dates has also presented unforeseen challenges.

*Information system*—The new promotion and prevention component required new national indicators to be established for growth monitoring, such as the percentage of children in the community who "do not grow well" (ie have not gained minimum expected weight in two consecutive weighing sessions). Establishing appropriate registration categories in the official information system continues to be negotiated with the National Management Health Information System.

*Monitoring and evaluation*—Monitoring the quality of training was identified and addressed and subsequently, instruments for monitoring the performance of health vigilantes were developed. At present, these have been integrated into a national monitoring and supervision system for AIEPI AINM-C. Plans to evaluate the impact on growth/malnutrition of AIEPI AINM-C are of high priority given that the evaluation of AIN has documented effects in maternal knowledge and behavioural variables only.

*Administration and financing*—According to official figures, the extension of coverage model has a budget of US \$17m a year. Although monthly training of community health workers is included in these figures, funds do not always flow smoothly from the central level to the NGOs and then on to the community health workers, who receive a modest stipend for participating in training and monthly supervision meetings. Funds from other sources had to pay for the three consecutive days of AIEPI AINM-C *vigilantes* training in growth monitoring and promotion. (The training in the other two modules requires an additional six days.)

## ***Alliances***

From the beginning AIEPI AINM-C has generated and depended upon strong alliances between the public and the private sector. With the support of many international cooperating agencies, NGOs and the donor community, the Ministry of Health launched AIEPI AINM-C training activities in 10 of the 26 Guatemalan Health Areas





following interagency training of trainers at the end of 2002. Current plans are to implement AIEPI AINM-C in over 1,000 community health centres and 2,500 communities throughout these ten areas by the end of 2003. More than 14,000 community health workers are scheduled to be trained in the initial stages of implementation. Since the launching of AIEPI AINM-C, Calidad en Salud has actively supported the Ministry of Health in developing implementing the overall strategy. Also, for over three years an inter-institutional technical IEC group, known as GTI-IEC, has worked on the design, testing and production of training and IEC materials, with administrative and technical support from Calidad en Salud.

### ***Future of the AIEPI AINM-C***

The anticipated nationwide expansion of AIEPI AINM-C will depend on the newly elected Guatemalan Government embracing the strategy. The continuing coordination of financial and technical support of a broad spectrum of international NGOs and donor agencies is also critical to the nationwide expansion of the strategy. With the introduction of AIEPI AINM-C in February 2002 and the ground work conducted over the last 18 months, the Ministry of Health along with its partner NGOs and other collaborating organizations are poised to meet the challenge of improving child nutrition and care in Guatemala on an unprecedented scale.

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## NGO ROLE IN IMPROVING COMPLEMENTARY FEEDING

Judiann McNulty, CORE Nutrition Working Groups

International and national NGOs have been involved in efforts to improve the nutritional status of young children for decades. Traditionally, such programmes focused on either directly implementing growth monitoring and conducting education for mothers, or assisting the local government health services to do so—often through formation of mothers clubs or distribution of free food rations as an enticement for mothers to participate. During the past two decades, NGOs have refined or devised new approaches to achieve behaviour changes related to improving infant and young child feeding.

### *Targeting*

By the mid-80s it became evident that mothers were not always able to make changes related to child feeding practices without the approval of other family members. This led NGOs to question the long-held practice of targeting nutrition education solely to mothers of young children. Many NGOs have since devised programmes to target fathers, who, in some societies control how the family spends its money or hold complete decision-making authority over family affairs. NGOs have learned that many males, who care deeply about the well-being of their offspring, are allies in persuading women to change long-held feeding practices, or are very willing to change intrafamilial food distribution when they learn of the importance of certain foods for child growth and health.

In Nicaragua, CARE International has fully engaged men in improving infant and young child feeding by linking nutrition education and promotion of exclusive breastfeeding with agricultural activities. Using this holistic approach, the programme addressed men's felt need for better agriculture productivity and increased income with nutrition education messages. This enabled men to support changes in traditional complementary feeding practices, dietary diversity, and their wives' exclusive breastfeeding practices for the first six months.

More recently, some NGOs have begun a concerted effort to target older women or grandmothers. In many cultures, older women have a strong influence over decision-making and are those from whom younger women learn about childcare and feeding. These programmes have found that older women welcome being empowered with new information and being tasked with sharing it with other community members. Christian Children's Fund found in Senegal that targeting grandmothers brought about more positive behaviour changes in a shorter amount of time than years of previous work with mothers of young children<sup>1</sup>.

### *Positive deviance*

In any community, it is usually possible to find well-nourished children even among the poorest families. These families are now known as "positive deviants", those who deviate positively from the norm of poor nutrition. Using this concept, Save the Children USA in Haiti developed a programme called Hearth. Using existing knowledge and resources, communities were assisted in learning the complementary feeding and health practices of the positive deviant families in order to prevent malnutrition. The Positive Deviance/Hearth programme, which was further refined by Save the Children and other NGOs in multiple countries, involves a two-week recuperation phase during which mothers of malnourished children come together once a day to practice and learn the positive deviant behaviours identified in their own community. The mothers cook a supplemental meal together using the identified locally available, affordable foods and practice active feeding, learning through practice about better nutrition and health behaviours. The Positive Deviance/Hearth programme has now been introduced by NGOs in 21 countries. Evaluations have shown that mothers retain the behaviour changes with their successive children<sup>2</sup>.

In Tajikistan, Mercy Corps has used the concept of positive deviance in another way. Within communities, the women's groups held competitions to find the healthiest babies ages one to 12 months. The women then interviewed the mothers of the healthiest babies to learn what they do to have such well-nourished children. This strategy has proved to be very empowering for mothers who previously felt they could not positively impact their child's nutritional status until food and economic security improved.

### *Focused messages*

NGOs have shifted their focus to bringing about behaviour change rather through Information, Education, Communication (IEC) campaigns than imparting knowledge. In some cases, NGOs have successfully applied Trials for Improved Practices<sup>3</sup> to determine which behaviours the target population are truly able and willing to change or adopt. This is followed by developing a focused education strategy. For example, both World Vision and Catholic Relief Services in India used this methodology to improve maternal nutrition in some of the poorest states of India; CARE has also applied this methodology to improve complementary feeding in Niger. Project HOPE applied the methodology to improve consumption of micronutrient-rich foods in the Peruvian Amazon Basin.



The new PAHO/WHO *Guiding Principles for Complementary Feeding of the Breastfed Child*<sup>#</sup> have been widely distributed and promoted by the Collaboration and Resources Group (CORE Group), a network of 35 US and European NGOs working in child health around the world. CORE uses these guiding principles to design educational activities and messages in child survival, food security, and nutrition interventions, to ensure consistency in messages coming from UN agencies and national governments.

### ***Monitoring and evaluation***

Johns Hopkins University and MACRO International have provided technical support to NGOs funded by USAID to develop and refine a comprehensive survey instrument and methodology that measures behaviour change at the household level. The Knowledge, Practice and Coverage Survey ([www.childsurvival.org](http://www.childsurvival.org)) is frequently used in baseline and final comparisons. The nutrition module is currently under revision to reflect the new PAHO/WHO guiding principles.

### ***Linking communities with health services***

Most international NGOs work in partnership with local health service providers, such as local NGOs or the Ministry of Health (MOH). NGOs have supported these partners in adopting the Integrated Management of Childhood Illness Strategy (IMCI) for health facilities and related community-based activities. NGOs have also forged strong linkages between community based programmes, which often train local volunteers or mobilize village health committees, and the health facilities through the introduction of referral and counter-referral systems. For example, when the volunteer identifies a malnourished or ill child, the volunteer fills out an easy form which is sent with the patient to the health facility. The health care worker who treats the child then sends back half of the form to advise the volunteer that the patient actually sought treatment, what the diagnosis was, and if any follow-up is needed. This enables the volunteer to continue to provide support to the child and family through assured compliance.

Another approach that links communities to health services involves identifying and overcoming barriers to bringing community outreach to remote communities. For example, when MOH personnel said they could not do village-based growth monitoring and promotion due to lack of transportation, the NGO mobilized the community health committee to provide the needed transportation to bring the nurse to the community on a regular basis.

### ***Using commodity food resources***

As a means to improving nutrition status, many international NGOs are involved in distributing commodity foods from donor governments and the World Food Program. Programmes tend to take one of two approaches in targeting the food:

1. the food ration is sometimes targeted to households with children who have poor nutritional status, but more often the food resources are used as a means of prevention
2. the food may be targeted to the poorest families in a community or to all families in the poorest communities in a targeted area.

This last type of preventative targeting is often linked to health services, with families receiving food as an incentive to immunize children, attend growth monitoring, or for mothers to receive pre-natal care, family planning services and health education. The food ration package is tailored to meet a percentage of the nutrient requirements of children between 6 and 59 months and/or pregnant and lactating women. In either of these distribution schemes, the overall nutritional improvement of children under five years in the community or among the targeted families is frequently used as an indicator of programme success.

### ***Conclusion***

International NGOs have become increasingly more involved in applying the most effective and innovative methodologies to improving nutritional status of infants and young children. They are significant partners to Ministries of Health and UN agencies in many countries and further potential exists to expand these partnerships. Through their efforts at the community level, as well as their role in advocacy with governments and donors, NGOs will continue to promote and put into practice the Global Strategy for Infant and Young Child Feeding.

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## SECURING "THE RIGHT" COMPLEMENTARY FOODS IN EARLY CHILDHOOD:

### WE SHOULD NOT DELAY TAKING EFFECTIVE ACTION

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Promoting the optimal growth and development of infants and young children has been a clearly stated priority for global public health nutrition for over a decade. To achieve this goal, strategies have focused on the promotion of exclusive breastfeeding for the first six months of life. In addition, growth monitoring, mainly using weight-for-age, has been expanded throughout the world and length measurements are increasingly being taken as part of nutritional assessment of young children. Yet as we look at the figures on nutritional status emerging from developing countries, especially in the poorest segments of the population, we find that progress is clearly insufficient. Stunting rather than underweight is presently the most prevalent form of malnutrition in children under five years of age. Moreover, in several countries of the Americas, most of Sub-Saharan Africa, and parts of Asia these figures have not only not improved, but may be worse than 20 years ago.

Child survival has improved, but clearly preventing death is not enough. In fact, emphasis should be placed in promoting the optimal linear growth of all children, which goes beyond just weight gain. The first two years of life, corresponding to the period of breastfeeding and complementary feeding, should be recognized as a critical moment in achieving optimal health and mental development. The consequences—inadequate growth during this period—are difficult, if not impossible, to fully reverse and have major implications for lifelong health and human and socioeconomic development. Achievement of the full mental and physical potential of the genetic endowment in early life depends on optimal nutrition during these first two years.

For most children exclusive breastfeeding for the first six months represents optimal feeding, and this message has been progressively incorporated into most public health policy and programmatic efforts. Unfortunately, the need to secure macro- and micronutrient sufficiency for at least the first two and preferably three years of life has not received equal attention. Prevention is the key because linear growth fails quite early, even before underweight becomes a problem. Therefore, the real challenge we now face is how to support, promote and protect the growth of children during the complementary feeding period.

Of course, the first choice would be to have the right local foods for complementary feeding. Unfortunately, most groups living in poverty conditions do not have access to the type of foods required to meet the needs of growing children. This is usually because of economic limitations coupled with cultural/educational barriers that need to be overcome. Nutrient-dense foods are often inaccessible to low- and even middle-income families in the developing world. Economic growth and educational programmes could bridge these gaps, but this would take at best several decades or may never come. As a result, many infants and young children will continue to suffer from multiple nutritional deficiencies and remain stunted for life.

Complementary foods of an adequate macro- and micronutrient density, together with appropriate breastfeeding, are essential to ensure adequate nutrition after six months of age. "Together with" not "instead of" breastfeeding should be emphasized. It must also be recognized that these are programmatic guidelines for population groups, leaving room for adaptation and/or modification for specific infants based on the assessment of individual needs. The knowledge base to develop fortified processed complementary foods for infants and young children has been recently summarized in a supplement to the *Journal of Nutrition*, September 2003. The supplement resulted from a Consultation on Recommended Nutrient Composition for Fortified Complementary Foods convened by the Pan American Health Organization (PAHO). It provides much needed theoretical and practical guidance for national programmes in assessing existing complementary foods and developing new ones.

Today, the issue is how to move from a technical solution to an operationally effective intervention to increase access to fortified complementary foods. The practical barriers that must be addressed to develop these interventions are summarized in Figure 1. Achieving successful solutions will require the active participation of governments, the private sector, and civil society (academic institutions and NGOs).

Governments in most countries have long addressed the needs of school children and other vulnerable groups by establishing feeding programmes and fortifying staple foods. Young children have special needs that are not met through fortification of staple foods; neglecting to address their needs will compromise not only their growth, but their capacity to be educated successfully. It is likely that there is no single best solution for all populations but that a combination of behaviour-change strategies and a food-based approach, which includes the use of fortified complementary foods, will be needed. Most of the needed scientific information is available, as is the technology to provide low cost fortified complementary foods for all children. Effective action must be taken while

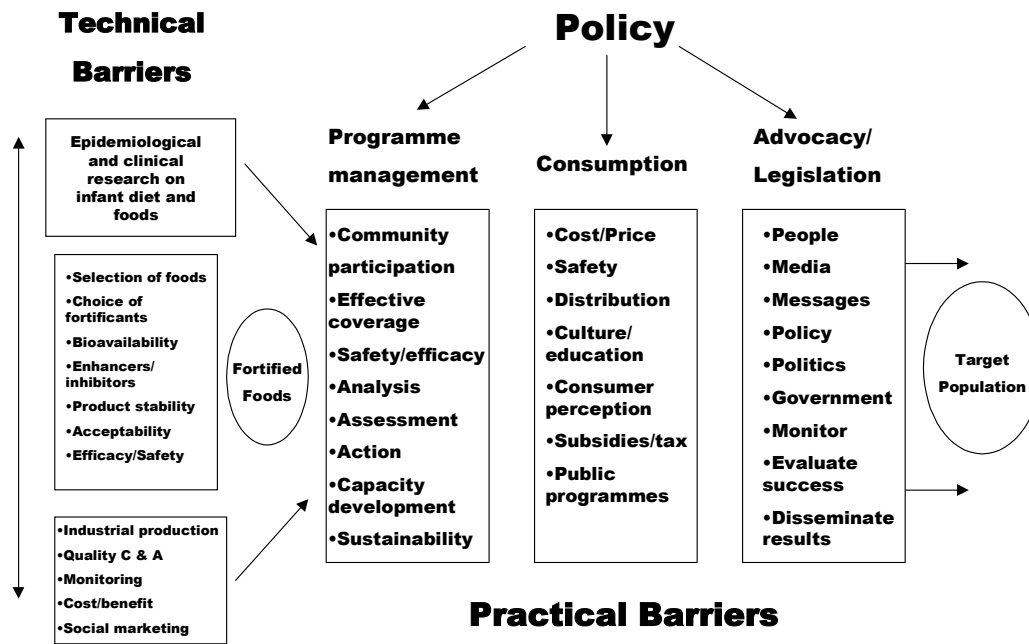


Figure 1 Technical and practical barriers that can limit effectiveness of fortified complementary food programmes for young children

much needed research on infant and young child nutrition and feeding continues. Children in developing countries should not have to wait any longer.

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## TRIAL AND ERROR METHODS, "EXPERT" GUESSING OR LINEAR PROGRAMMING?

### FORMULATING SOUND NUTRITIONAL RECOMMENDATIONS FOR COMPLEMENTARY FEEDING

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During complementary feeding, children require a nutrient-dense diet to meet their high nutritional requirements. International interest exists in promoting affordable, nutritionally adequate diets during complementary feeding prepared with locally available foods, and possibly some fortified foods. In this context, two questions arise:

- is it possible to design a diet suitable for the complementary feeding period using locally available food?
- if so, what is the lowest-cost, easily available, nutritionally adequate diet?

These questions are usually answered using a "trial and error" approach or by "expert" guessing. However, an efficient and rigorous technique based on linear programming is also available to answer these questions. This technique examines the compatibility of different mathematical inequalities using simple mathematics. Until recently, its application was limited by the large number of equations to be solved simultaneously. This short paper examines the principle of this method and illustrates how with a computer it can be used to answer very practical questions.

#### *Designing a diet complying with multiple nutritional constraints*

A very simple example can explain the basic principles behind linear programming. A meal from rice and beans is needed with a minimum and maximum energy content of 400 kcal and 600 kcal respectively, and a minimum of 15 g of proteins and a maximum of 100 mg of sodium. Table 1 reports the protein and sodium content of the rice and beans used for this theoretical example.

Firstly, compatibility between all the constraints can be determined using a graph. For this, the constraints are expressed as  $y > ax + b$ . The constraint for the minimum energy content can be expressed in three ways using this equation, taking into account that 1 g of rice provides 3.5 kcal and 1 g of beans provides 3.2 kcal:  $\text{weightrice} * 3.5 + \text{weightbeans} * 3.2 > 400$ ; or  $\text{weightbeans} > (400 - \text{weightrice} * 3.5)/3.2$ ; or  $\text{weightbeans} = - 3.5/3.2 * \text{weightrice} + 400/3.2$ .

On a two dimensional graph (beans on Y axis, rice on X axis), all rice and bean combinations fulfilling this constraint are above the minimum content of the energy line (Figure 1, next page). In the same way, the constraints on the maximum content of energy and sodium and the minimum content of protein can be represented as straight lines. These straight lines on the graph limit the areas respecting and not respecting the constraint. They form a polygonal "feasible region". All rice and bean combinations represented within this feasible region have a nutritional composition that respects all the constraints defined initially.

For some sets of constraints, there is no feasible region and no food combination can be found to fulfil the initial nutritional constraints. All paediatricians know, for instance, that no combination of rice and milk can provide a young child all the iron he/she needs during the complementary feeding period. This can be shown formally on a graph. Using this example, the iron content of milk (65 kcal/100 ml) and rice are 1 mg/100 g and 0.1 mg/100 g respectively, but a breastfed child cannot consume more than 600kcal from complementary food and has an iron requirement of 10 mg. Figure 2 (next page) shows that the feasible area for energy (below the "energy line") has no common part with the feasible area for iron (above the "iron line"). Therefore, these constraints are not compatible. To meet these constraints, a third iron rich (possibly fortified) food needs to be introduced.

#### *Determining the least expensive food combination that respects multiple nutritional constraints*

Using the first example of rice and beans, the next step is to select the least expensive combination fulfilling all

Table 1  
Composition of foods used  
in the examples in the text.  
Note: the values do not  
correspond to the real nutri-  
ent content of these foods

	Energy (Kcal/100g)	Proteins (g/100g)	Sodium (mg/100g)
Rice	350	8	80
Beans	320	25	50

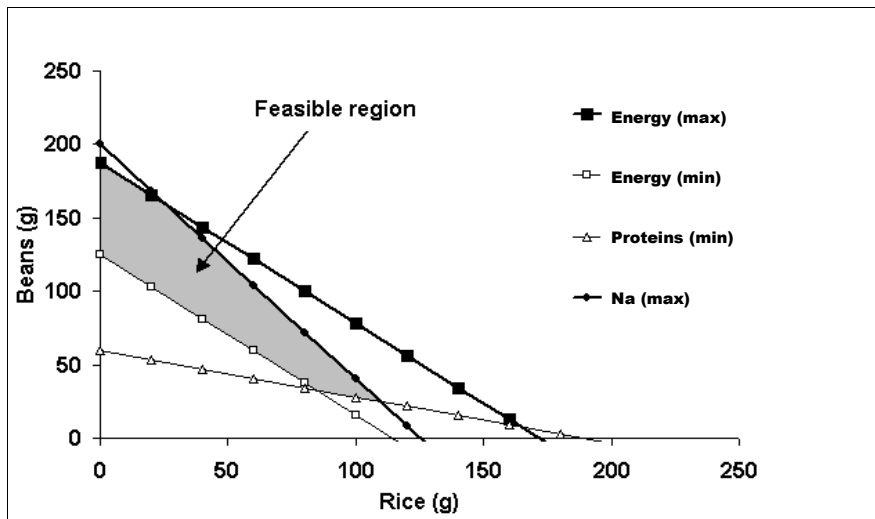


Figure 1

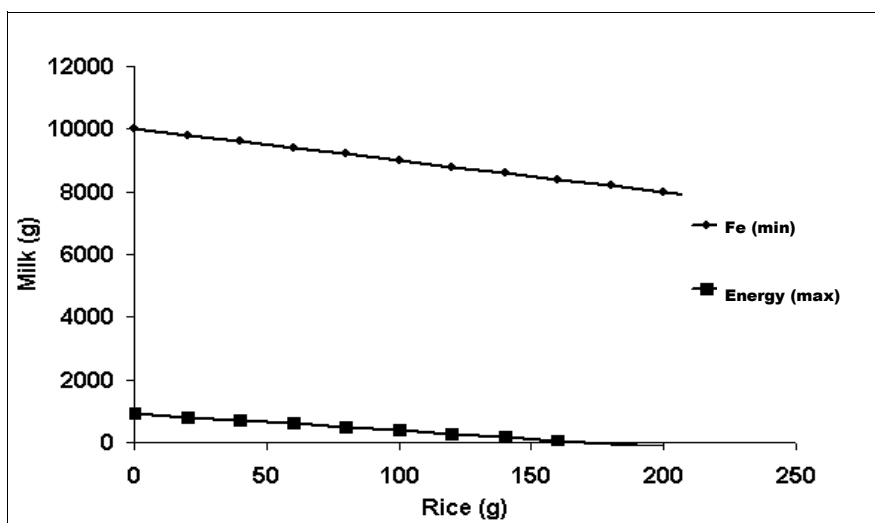


Figure 2

the constraints. What would this combination be if rice costs one currency unit (CU) and beans two CU per kg?

In theory, this question can be easily solved mathematically. The least expensive solution is always at one of the feasible region corners. The right solution can be found by comparing the price of rice and bean combinations corresponding to each corner. This involves solving the systems of equations corresponding to the two lines crossing each other at each corner. In practice, this becomes complicated. Since the feasible region has five corners, this means that even in a very simple example, five systems of two equations each need to be solved in order to find the right solution.

Here an Excel spreadsheet, or equivalent programme, can help find the solution. First, the food composition table should be displayed on the spreadsheet as shown in Figure 3 (next page). Below this, lay out a recipe as shown in Figure 3 and calculate the total nutrients of the recipe. This should be done using the standard spreadsheet functions. The amount of rice and beans in this example are set at 50 g arbitrarily. Next, activate the solver function. This function is not installed by default in all computers and can be installed following instructions from the help menu.

Once the solver function is activated (Figure 4, next page), select the variable to be optimized. In this example, total cost should be minimized, therefore, enter it as a target cell (C15 in this example) with the "minimize" option activated. Then choose the "variable cells". In this example, this represents the quantity of rice and beans (B12 and B13) to be adjusted in order to minimize the cost. Eventually, enter constraints in the model by activating the "Add constraint" menu. In these examples, constraints are represented by the inequalities imposing a maximum and a minimum value for energy, protein and sodium. In the option menu, click on "Options" of the solver function. It is important to mention that "All variables are supposed positive". Now, by clicking the "Solve" function, a new screen appears with the solution immediately displayed in the recipe column (Figure 5, page 39). The least expensive option is obtained with 84 g of rice and 33 g of beans for a cost of 0.15 CU. This corresponds indeed to one of the corners of the feasible area, where the lines representing the constraints for minimum protein and energy cross each other.

Figure 3

	A	B	C	D	E	F	G
1	FOOD COMPOSITION TABLE						
2							
3							
4			Cost	Energy	Proteins	Sodium	
5			per Kg	(Kcal/100g)	(g/100g)	(mg/100g)	
6	Rice		1	350	8	80	
7	Beans		2	320	25	50	
8							
9							
10	RECIPE	g					
11							
12	Rice	50	0.05	175	4	40	
13	Beans	50	0.10	160	13	25	
14							
15	Total	100	0.15	335	17	65	
16							

Figure 4

	A	B	C	D	E	F	G
1	FOOD COMPOSITION TABLE						
2							
3							
4			Cost	Energy	Proteins	Sodium	
5							
6	Rice						
7	Beans						
8							
9							
10	RECIPE	g					
11							
12	Rice	50					
13	Beans	50					
14							
15	Total	100					
16							
17							

**Solver Parameters**

Set Target Cell:

Equal To: ☐ Max ☒ Min ☐ Value of:

By Changing Cells:

Subject to the Constraints:

- 
- 
- 
- 

Buttons: Solve, Close, Options, Add, Change, Delete, Reset All, Help

## Linear programming in real life

In real life, designing a diet for the complementary feeding period represents a much more complex problem than the examples discussed. First, diets are never designed with only two foods, but at least 10 or 20 depending on local resources, and infant and young child feeding practices. Unfortunately, this makes graphic representation of constraints compatibility impossible. Yet, the basic principles remain the same.

In practice also, constraints have to be added to the model to make sure the obtained recipes are acceptable and realistic. This is done by setting a maximum limit for each food which should be obtained from key informants. This limit corresponds to the maximum amount of each food which can reasonably be recommended in the considered age group.

Although the full theory behind linear programming was developed more than 50 years ago, it has gained popularity with the advent of low cost, powerful, small computers. Now, even the most complex nutritional problems involving hundreds of different foods with nutritional and acceptability constraints can be solved in a few seconds once the data have been properly displayed on a spreadsheet. Easy to use linear programming programmes incorporating the nutrient composition of most foods available in developing countries are now available on the Internet ([www.nutrisurvey.de](http://www.nutrisurvey.de)) and are better to use for this purpose than Excel.

## Practical applications of linear programming

Very practical questions regarding complementary feeding have been debated over many years with no clear solution achieved. Without the help of linear programming, even for an expert, it is impossible to use intuition and guessing alone to arrive at solutions to problems which require solving hundreds of equations simultaneously. Further, conflicts of opinion on these issues are difficult to avoid as long as opinions are based on guesses. Linear programming should clarify these issues.

Everyone agrees that nutrient recommendations formulated by different expert committees are difficult to use in practice. So far, few practitioners have succeeded in providing recommendations that are realistic and consistent with recommended nutrient intakes. Very often recipes or diets based on current food recommendations do not provide all nutrients at the recommended level. Linear programming should lead to major progress in this area.



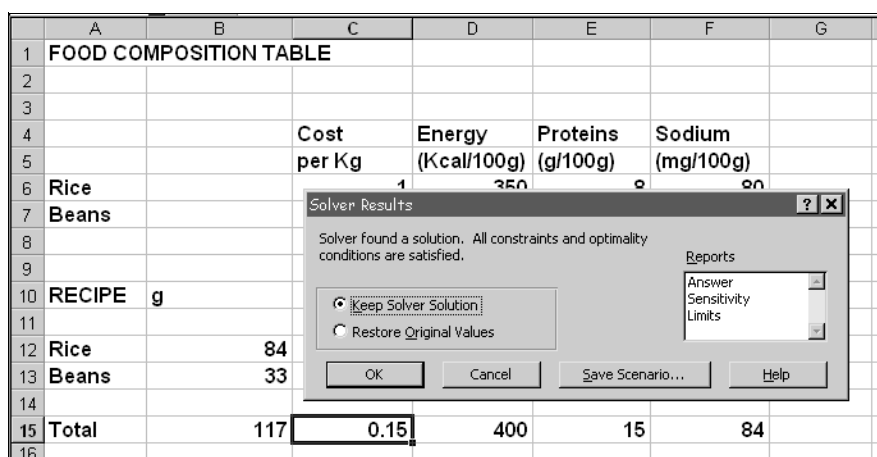


Figure 5

In conclusion, linear programming is a powerful tool that could help formulate sound nutritional advice, especially in the context of complementary feeding in poor countries. Coupled with behaviour change communication strategies, it has the potential to improve infant and young child nutrition. This rigorous method has been used for years in industry and animal nutrition. Its introduction into human nutrition is long overdue.

### Further readings

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## INFANT AND YOUNG CHILD FEEDING AND THE HEALTH AND DEVELOPMENT AGENDA

Milla McLachlan, World Bank

Nutrition can be part of the groundswell of support for health and poverty reduction in national and international development agendas. With underweight as the indicator to measure attainment of the global goal to reduce hunger by half by 2015, the door is open, the invitation is to walk through it and be part of the increasing effort to tackle neglected dimensions of health and human welfare. How we do it will be decisive for the lives of millions of women and children worldwide. In September 2001, 147 heads of state endorsed the Millennium Development Goals (MDGs) at the Millennium Summit. These goals were later adopted by the heads of state of all 189 member countries at the UN General Assembly. During the 90s there had been a growing recognition of the importance of health—as an important objective in its own right, and as a significant determinant in achieving poverty reduction goals. Concerns about high debt burdens and their impact on social expenditures in very poor countries led in the late 90s to the enhanced Highly Indebted Poor Country (HIPC) initiative, and to the introduction of the Poverty Reduction Strategy Paper (PRSP) process. PRSPs are designed as instruments through which country governments seeking debt relief or concessional loans set out their poverty reduction plans, with a focus on human development, including health and education.

Increasingly, publications focusing on strategies to address poverty and health include a strong focus on addressing malnutrition. Thus, the 2002 *World Health Report* highlights nutritional factors, including general malnutrition and micronutrient malnutrition, as well as obesity, as leading risk factors for the global burden of disease<sup>1</sup>. The 2004 *World Development Report* includes analyses of the high malnutrition burden among the poorest people, and the factors that constrain their access to appropriate services to improve nutrition<sup>2</sup>. The *Lancet* series on Child Survival gives high visibility to underweight and micronutrient deficiencies as underlying causes of childhood deaths<sup>3</sup>. It recognizes infant and young child feeding—breastfeeding and complementary feeding—as interventions which affect nutritional status, and for which sufficient evidence of effect on reducing mortality from a variety of diseases exists<sup>4</sup>. The authors estimate that 13% and 6% of all childhood deaths—almost 2m per year—could be prevented through achieving universal coverage with breastfeeding and appropriate complementary feeding, respectively. The significance of nutrition—and of these interventions in particular—for achieving the MDGs is thus undisputed. How can the nutrition community be most effective in this new context of opportunity?

**COLLABORATE TO TAKE ADVANTAGE OF OPPORTUNITIES** Work with allies in health and poverty to ensure that nutrition is included in high-level discussions on the MDGs and poverty reduction strategies. This will require engaging at all the levels necessary to get the issue on the agenda, and designing messages that focus on the specific interests and commitments of the audience, whether it be finance ministers, health or agriculture leaders, civil society or private sector leaders. In countries, getting plans for nutrition action into PRSPs and other planning forums requires doing the necessary analytical work up front to present a convincing case, not just about the nature and causes of the problem, but also, a clear plan for what can be done and the resources it will require.

**USE EXISTING FORUMS EFFECTIVELY** For example, nutrition experts serving on several of the Millennium Project Task Forces, and ensuring that nutrition messages are consistent across the hunger, gender and MCH groups.

**MEASURE AND REPORT** Ensure that nutritional status indicators, as well as appropriate intermediate indicators, are included in key MDGs and poverty measuring and monitoring initiatives at global and country levels. Prevalence of underweight is widely accepted as an MDG indicator and is frequently used in PRSPs. In a context where a minimum set of indicators needs to be specified, nutritionists need to agree on the appropriate complementary feeding indicator, and provide guidance on how it is to be collected, analysed and reported.

**LEARN AND DELIVER** Develop and implement a vigorous learning and action agenda on delivery strategies to rapidly scale up the coverage and quality of proven interventions. While complementary feeding is widely accepted as an effective intervention—and there are examples of successful programmes and approaches (see for example Diene, 2003<sup>5</sup>)—much more attention is required to overcome the bottlenecks to achieving high coverage. As Bryce et al<sup>6</sup> argues for child survival strategies more generally, there is a need to match the excellent technical evidence-based guidelines that are available with focused effort to achieve increased capacity to design, implement, monitor and fine-tune locally appropriate delivery strategies. Rather than a 'one size fits all' approach, we need a compendium of strategies that make sense under different epidemiological, health-system, cultural and socio-political contexts.

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## UNDERTAKING THE CHALLENGE OF IMPROVING COMPLEMENTARY FEEDING OF INFANTS AND YOUNG CHILDREN

Edward A Frongillo, Cornell University

Although substantial progress has been made in the past 25 years to reduce infant and young child mortality, rates remain high. About 150 of 1000 children born in Sub-Saharan Africa die by the age of 5 years, with rates in North Africa, Asia, and Latin America on average one-third to one-half of that<sup>1</sup>. In the period from about 1975 to 1995, under-five mortality declined by 32% in Sub-Saharan Africa, 63% in Latin America, and 60% in Asia and North Africa. These reductions in mortality were paralleled by marked reductions (about 60%) in undernutrition in Latin America, Asia and North Africa, but Sub-Saharan African countries experienced a 12% increase in undernutrition during this period. In each region, the trend in undernutrition was an important determinant of the trend in mortality. This is not surprising given previous research demonstrating that more than half the deaths of preschool children are attributable in part to undernutrition, because undernutrition increases the likelihood that a child dies from disease<sup>2,3</sup>. Besides affecting morbidity and survival, undernutrition in children affects performance and health, including physical growth, cognitive development, reproduction, physical work capacity, and risks for several adult-onset chronic diseases. Rates of infant and young child undernutrition remain high in poor countries despite recent progress, and reducing it is a global priority.

During the past three decades or so, understanding of the unique characteristics of human milk and the process of breastfeeding has led to the recommendation that infants should be breastfed exclusively for about six months. Because globally only about one-third of infants less than six months of age are fed breastmilk exclusively, continued efforts to encourage and assist families to implement this recommendation are needed. Feeding recommendations also state that infants after six months should be fed safe and nutritionally adequate foods to complement breast-feeding to the end of the second year. Beginning at about six months, breastmilk alone is not sufficient to meet energy and nutritional needs, and the transition to eating other foods is an important developmental step. Appropriate complementary feeding, then, requires not introducing foods other than breastmilk too early or too late, and feeding infants and young children between 6 and 24 months foods that are safe and nutritionally adequate to complement human milk.

Appropriate complementary feeding requires both appropriate foods and appropriate caring behaviours. First, foods that are safe and nutritionally adequate for infants and young children must be available to and accessible by families. Second, families must engage in good caring behaviours that involve the preparation and feeding of foods, which also means that they must have adequate resources for caring<sup>4,5</sup>. Good caring behaviours include what, how, when, and where foods are fed as well as who is giving the food<sup>6</sup>. The availability of foods depends on family production, markets, and industries at local, national, and global levels. Families' access to food depends on economic and other family and community resources. Caring behaviours include seeking preventative and curative health care, as well as providing adequate hygiene, food preparation, and feeding. Resources for care include care givers' workload, time, physical and mental health, nutrition, autonomy, knowledge and experience, and social support.

Given the importance of preventing undernutrition in infants and young children, the crucial role of complementary feeding in nutrition, and the need for appropriate foods and caring behaviours, what actions should we undertake? Actions are needed at many levels, including global, regional, national, community, family, and individual. Actions involve advocacy, policies, programmes, and recommendations to promote appropriate complementary feeding and provide the knowledge and material resources for families and communities to do it. Actions also involve research to help understand how best to promote appropriate complementary feeding and provision of resources to do it.

Improving complementary feeding is of the highest priority for infant and young children because of its crucial role in preventing mortality and enhancing child development. The greatest challenge that we face in accomplishing this priority is developing dual-purpose strategies to ensure that every child in a poor country is provided appropriate foods and appropriate caring behaviours. We do not have to develop a "superfood" that meets every nutritional need. We have much experience to tell us that the existence of a food does not mean it is available and accessible to infants and young children, nor that the food is being fed to them appropriately. Instead, we must win the support of policy-makers, officials, and investors to develop the knowledge and experience in how to best go beyond poverty to ensure that appropriate complementary feeding occurs using the foods and techniques at hand. We must also work together to develop and embrace straight-forward strategies to make use of such investments. We will only receive investments if we believe that the task is doable and provide convincing arguments that it can be done. Piwoz et al<sup>7</sup> have eloquently argued that a movement of the scale that led to progress in promoting, supporting, and protecting breastfeeding is needed for complementary feeding. Formulating such a movement is challenging because we will have to build interdisciplinary alliances even though at present we lack the kind of rallying point that breastfeeding naturally engendered. But, we cannot be

paralyzed by complexity. Singing a lament that the task is very complicated is counter-productive; rather let us all sing a simple lyric that this can be done starting now.

## ***Acknowledgement***

The content of this commentary has been influenced by many discussions with an informal “complementary feeding research group” of faculty and graduate students in the Cornell University Program in International Nutrition: Cecilia Acuin, Mohamed Ag Ayoya, Kate Dickin, Suzanne Gervais, Jean-Pierre Habicht, Patricia Kariger, Jef Leroy, Joseph Mensah Homiah, Purnima Menon, Siméon Nanama, Helena Pachon, Gretel Peltó, Kathleen Rasmussen, Maria-Guadalupe Rodríguez, Kuntal Saha, Rebecca Stoltzfus, and Sara Sywulka.

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# WORKING GROUPS

## BREASTFEEDING AND COMPLEMENTARY FEEDING WORKING GROUP

Miriam Labbok, Reina Buijs, and Randa Saadeh

### *Support for Complementary Feeding*

The Breastfeeding and Complementary Feeding Working Group (BF/CF WG) has a central role in SCN discussion of complementary feeding (CF). Over the last decade, the role of the WG has modified, from its original UN-only, breastfeeding-only focus, to today's broader mandate, including CF, HIV and infant feeding, and related maternal issues. It also enjoys the participation of other multilaterals, bilateral governments, NGOs, and interested individuals. In addition, with emails and working international phone lines, ease of regular communication among UN agencies has increased. As a result, the WG has become more of a sounding board for shared progress in the field of infant and young child feeding (IYCF), rather than primarily serving as the sole locale and mode for sharing specific initiatives.

### *SCN Session 2002*

At the last full meeting of the WG at the SCN Session in Berlin in 2002, it was decided to combine and reduce the ten issues covered in Nairobi in 2001 to five more comprehensive issues to assess progress on IYCF (Table 1). The tendency was to move away from concentrating on multiple UN-initiated programmes and projects, and more towards attention on how to best address the rights of the child in programming approaches.

Specific recommendations highlighted the life cycle approach to nutrition: stressing continued BF in all CF activities and expanding all BF/CF initiatives into maternal nutrition. In addition, there was an expressed need for the BF/CF WG to more actively support a child-oriented health benefit point of view in other WGs.

While BF and CF remain the central nutrition-related issues, it was clear that those in attendance saw new areas as important to the success of IYCF, and suggested that:

- HIV and infant feeding must be addressed
- the multisectoral nature of IYCF needed more attention
- if IYCF were to succeed, there needed to be advocacy for the caretaker as well.

CF, per se, is addressed in the WG as part of the continuum of nutrition in the life cycle. Recommendations from the group included expanding and improving guidance and databases on CF (WHO agreed to take a major role), supporting family/small producers/manufacturers of complementary foods, and addressing the research needs so that we might better understand the impact and feasibility of home-based food preparation vs commercially prepared. The group recognized that data are needed on infant feeding practices, but was not clear how to find support for these behaviourally-based studies.

### *SCN Session 2003*

The field of IYCF, specifically BF/CF, is more important now than ever; however, major donors have not stepped forward to support the work that is needed. Therefore, while adopting the life cycle approach, the informal WG meeting in Chennai in 2003, underlined the need to revitalize the essential WG approach that centres on BF, while expanding into related support for maternal nutrition and CF with continued BF. Individuals noted:

	Five Issues: New areas	Ten issues: Previous areas
1	breastfeeding (BF)	1. state of the BFHI, Code, Codex, etc.
		2. duration of exclusive BF
2	continued BF with Complementary Feeding (CF)	3. complementary food and feeding
		4. progress on Global IYCF Strategy and I/ECD
3	HIV and Infant Feeding	5. consistent MTCT messages
		6. PMTCT
4	multisectoral enhancement	7. nutrition and other sectors
		8. BF as Household food security
		9. SCN and related sectors
5	increasing advocacy for the mother-child dyad in the life cycle context	10. advocacy for optimal BF,CF, and related women's support

Table 1  
The five issues of the Breastfeeding and Complementary feeding WG



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Table 2  
Contribution of  
breastfeeding,  
complementary  
feeding and re-  
lated maternal  
nutrition to the  
MDGs

MDGs	Goals and Targets	Contribution of IYCF (ie early and exclusive BF, continued BF with complementary feeding, and related maternal nutrition)
Goal 1	Eradicate extreme poverty and hunger	BF significantly reduces early childhood feeding costs, and exclusive BF can half the cost of BF <sup>1</sup> . Exclusive BF and continued BF for two years with appropriate CF is associated with reduction in underweight, and contributes about 30% of the energy needed during the second year of life (WHO). Proper complementary foods and feeding are essential for growth and development.
Goal 2	Achieve universal primary education	BF and responsive CF are prerequisites for readiness to learn, contributing to both cognitive development and socialization. BF and timely, adequate, safe and properly fed complementary foods significantly contribute to cognitive development.
Goal 3	Promote gender equality and empower women	BF is the great equalizer, giving every child a fair start on life. Most differences in growth between sexes begin as complementary foods are added into the diet, and gender preference begins to act on feeding decisions.
Goal 4	Reduce child mortality	Infant mortality could be readily reduced by nearly 15% with improved BF practices alone (this was reconfirmed in the LANCET Child Survival Series July 2003). In 2001, it was estimated that 54% of all childhood mortality was attributable to undernutrition, highly contributed to by inadequate complementary foods and feeding following on poor BF practices.
Goal 5	Improve maternal health	The activities called for in the Global Strategy include increased attention to support for the mother's nutritional and social needs. In addition, BF is associated with decrease maternal postpartum blood loss, decreased breast cancer, ovarian cancer, and endometrial cancer, as well as the probability of decreased bone loss post-menopause. BF also contributes to the duration of birth intervals, reducing maternal risks of pregnancy too close together.
Goal 6	Combat HIV/AIDS, malaria, and other diseases	Exclusive BF in an otherwise untested population may be associated with measurable reductions in MTCT, and would decrease mortality due to other infectious diseases by up to 50%.
Goal 7	Ensure environmental sustainability	BF is associated with decreased milk industry waste, pharmaceutical waste, plastics and aluminum tin waste, and excess use of firewood/fossil fuels.

- the need for urgency of actions with mechanism of accountability and a specific timeline for governments and organizations to act
- the question, "How do we help each other think through resources?"
- the need for more detail on what gets funded, how do we move ahead, and how to use existing resources, while not creating a vertical programme
- how we might repackage messages and strategies, and revitalize interest among field offices, and
- that there are opportunities, but perhaps we should consider what we have been doing wrong.

Perhaps the most important outcome of the last WG was the examination of the relationship of the work of the WG and the Millennium Development Goals (MDS) (Table 2). Clearly, the WG has important potential for achieving the MDGs.

### ***Progress since the SCN Session 2002 and 2003***

There have been a number of notable achievements since the last two SCN Sessions:

- WHO/UNICEF Global Strategy on IYCF is in place and country assessments are beginning, thanks to the input of Member states, NGOs (especially IBFAN, WABA and others), and health professionals worldwide, with additional input from other interested parties
- the Framework for Action on HIV/Infant Feeding, endorsed by nine UN agencies, has been finalized, addressing the special needs of HIV endemic countries
- establishment of an Alliance for Action on IYCF, a group of NGOs, bilateral, and multilateral organizations called together initially by UNICEF. The Alliance is partnering to network and coordinate on advocacy and programmes; to draw attention to technical issues that must be addressed in a timely manner; and to support the SCN BF/CF WG as a sounding board for specific issues identified by the Alliance
- the UNICEF/WABA Golden Bow initiative serves as a reminder and aids advocacy for BF, CF and related maternal nutrition
- work is under way to ensure that Baby Friendly Hospital Initiative is HIV-, Mother-, and CF-friendly
- increased planning for research on the sources and use of complementary foods, and
- recognition that CF success depends on interactive, stimulating feeding, as well as on adequate foods.

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## CAPACITY DEVELOPMENT WORKING GROUP

Cutberto Garza, Hans Schoenberger, and David Sanders

### ***Asian capacity development taskforce***

CASNA (Capacity Strengthening in Nutrition in Asia), under the guidance of the Asian Capacity Development Task Force surveyed Asian institutions to compile an Asian Institution Profile. It places special focus on priority areas of work (research, education, and training) and human resource capacity needs. Preliminary results obtained from responses of 25 institutions identify the following top four priority research areas:

- life cycle approaches for alleviating malnutrition
- enhancement of traditional foods for optimal nutrition and disease prevention
- food safety
- food and nutrition security.

Training needs were highlighted in the areas of programme monitoring and evaluation, micronutrient analysis, food safety control and assessment, nutrition communication, and clinical nutrition. The Asian Task Force expects to complete the survey before the end of the fall. Survey results and the implementation of capacity strengthening activities will be the core agenda items for the next CASNA meeting. The group's next meeting is scheduled to be held in Tokyo in January 2004.

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### ***African graduate students network***

The website for the African Graduate Nutrition Students Network (AGS-NET) is successfully up and running. The site provides a forum for the worldwide collaboration of graduate students in nutrition, as well as professionals with an interest in nutrition in sub-Saharan Africa. Students who have expressed interest in the Network are being contacted and asked to submit a half page resume that includes contact information, educational background, and research interests. The website may be viewed at [www.unu.edu/capacitybuilding/foodnutrition/ags-net/Index.htm](http://www.unu.edu/capacitybuilding/foodnutrition/ags-net/Index.htm).

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### ***African initiative***

Three sub-regional preparatory workshops will be held in Eastern, Southern and Western Africa to review progress of the 10-year plan presented at the SCN Annual Meeting held in Nairobi in 2000. The workshops will include participants from various institutions that have committed to the sub-regional capacity development initiative. These sub-regional meetings are preparatory to an Africa-wide workshop planned for early 2004.

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### ***Capacity development in Eastern Europe***

The UNU-FNP will initiate a capacity development planning activity for Eastern Europe similar to what has been implemented in Africa, Asia, and Latin American. Its augural event was the 9<sup>th</sup> European Nutrition Conference held in Rome in October 2003. A task force of 8 to 10 professionals will be established. A meeting of the task force is projected for early 2004, subsequent to the preparation of a position paper in late 2003 to describe the nutritional situation in Eastern Europe.

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### ***Capacity development in the Middle East***

A planning exercise also has been initiated in the Middle East and North Africa. The National Nutrition Institute in Cairo, one of the Egypt's leading nutrition training and teaching institutions, will host the Task Force's initial meeting. Like other task forces, this group will develop a ten-year plan of action.

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### ***Latin American capacity development taskforce***

*Challenges for Childhood Health and Nutrition Research in Latin America* is a Global Forum for Health Research collaborative project between INTA at the University of Chile (with Dr Ricardo Uauy as Principal Investigator) and the INSP forum in Mexico (with Dr Juan Rivera as Co-Investigator). An update was presented at the SLAIP (Latin-American Society of Pediatric Research) Congress held 9-13 October 2003. The update was intended to stimulate approval and implementation of an agenda for nutrition action in Latin America. Updated information on the congress is available at the following website: [www.inta.cl/slaip](http://www.inta.cl/slaip).



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The LATINUT website: <http://latinut.net/> provides complete information on the project by clicking on "Foro Regional". The Nutrition and Health Latin-American Research Institutions Inventory is also available at this website. It provides information about participating institutions.

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### **INFOODS and African Leadership Initiative**

As announced in the previous issue of *SCN News*, the second African Nutrition Leadership Programme was held 30 October - 6 November 2003 in South Africa. Information about the second programme, and some nice photographs from the first programme, can be found at the new ANLP website at [www.africannutritionleadership.org](http://www.africannutritionleadership.org).

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### **Ellison Medical Foundation/International Nutrition Foundation Fellowship Programme**

A grant of \$1,000,000 per year from the Ellison Medical Foundation for five years supports a fellowship programme coordinated with UNU's capacity development efforts. The programme is administered by the International Nutrition Foundation (INF). It has obligated funds fully for the first two years. The programme will be limited to no more than about 16 developing country institutions recognized as leaders in their respective regions. Fellowships must help develop or maintain a critical mass of well-trained personnel.

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# PROGRAMME NEWS

**ICRW-IFPRI****INTERAGENCY*****The Agriculture-Nutrition Advantage Project******Strengthening capacity to use gender analysis and enhance results***

To reach the Millennium Development Goal of halving the proportion of people who suffer from hunger by 2015, it makes sense to promote greater use of methods that add value and enhance results. One of these is gender analysis—a methodology that lends clarity to policy and programme development and implementation. It does this by identifying men's and women's contributions to economic development, agricultural production and nutritional well-being, and factors that limit and opportunities for enhancing their contributions. For example, gender analysis may show that women are responsible for multiple tasks in their homes and communities, yet have limited access to technologies that enhance their efficiency. This minimizes their contributions to agriculture, care and feeding family members. Similarly, gender analysis may suggest that men's contributions to family nutrition are minimized because of the belief that food and childcare are the sole responsibility of women. Consequently, men use their income for the purchase of goods and services that are not directly supportive of family well-being.

There is a vast literature that illustrates the use and benefits of gender analysis, particularly in the agriculture and environment sectors. Yet, there continues to be a gap between knowing the words and using gender analysis in a meaningful manner. Moreover, health and nutrition specialists have only recently begun to realize that “gender” doesn't simply mean providing services for women. Closing these knowledge and practice gaps can lead to greater efficiencies and effectiveness in achieving nutrition results.

The *Agriculture-Nutrition Advantage Project* is addressing these gaps through a series of actions to strengthen the partners' capacity to use gender analysis, to apply it in their project activities, and to articulate its value. Recently, 33 participants from the partner institutions—the International Center for Research on Women (ICRW), the International Food Policy Research Institute (IFPRI), the United States Agency for International Development (USAID), and colleagues from the agriculture and nutrition arenas in Ghana, Nigeria, Kenya, Mozambique and Uganda—met in Uganda for a gender analysis skills building workshop. Through a series of action-learning sessions, the participants learned that there is no such thing as “gender disaggregated data” but that gender analysis begins with “sex disaggregated data.” They used gender analysis with data from the Ghana National Living Standards Survey, and the Mozambique and Uganda Demographic and Health Surveys. Visits to three communities provided an opportunity to use gender analysis within the context of projects that purposefully linked agriculture and nutrition, but had not necessarily identified gender-related issues. Finally, the participants reviewed their plans of action to see where they could better integrate attention to gender and use of gender analysis to improve their intended results. For further information on the project, see [www.agnutritionadvantage.org](http://www.agnutritionadvantage.org)

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**HARVESTPLUS*****Human nutrition research under HarvestPlus***

The research programme formerly known as the CGIAR Biofortification Challenge Program has been renamed and now forms an alliance called HarvestPlus. Over the last six months HarvestPlus strengthened the foundation of its programme and brought together human nutritionists, food technologists, plant breeders and scientists, molecular biologists, economists and social scientists, seed systems/extensionists, and communicators to develop common frameworks for moving forward. Eight interdisciplinary planning meetings were held during September and October to develop work plans and budgets for full start-up operations in 2004. Six meetings—each specific to a Phase 1 crop (rice, wheat, maize, cassava, beans, and sweet potatoes)—were held in Asia, Africa, and Latin America. Two meetings were held in the United States; one on impact and policy analysis and the other on the nutritional breeding objectives.

Research and analyses related to human nutrition will cover five areas:

- basic studies to investigate optimal strategies for improving intake and utilization of micronutrients through: 1) increasing micronutrient density; 2) reducing antinutrients, and/or 3) increasing promoter compounds. Breeders will initially focus on increasing iron, zinc, and provitamin A density in the parts of the seeds and roots that are commonly consumed, while research on 2) and 3) is ongoing. This work will be led by the University of Adelaide and the USDA-ARS Plant, Soil, and Nutrition Laboratory (PSNL) at Cornell University. Some research will be competitively bid, and will be announced in early 2004
- screening—using *in vitro* and animal models—to determine the relative bioavailability of a large number of

crop genotypes that are identified through conventional breeding programmes. This work will be carried out by the PSNL

- household and individual level surveys to determine the associations between social and economic factors, food intakes, micronutrient status, and functional outcomes
- human efficacy trials for the micronutrient-improved lines of each crop. “Proof-of-concept” efficacy trials are underway or planned for rice, maize, beans, and sweet potatoes, and
- community-based effectiveness studies, once the micronutrient improved varieties have been adopted by farmers.

This work will be facilitated and monitored by a nutrition coordinator, who will be based at the Division of Human Nutrition, Wageningen University. Penelope Nestel, currently coordinator of USAID’s Micronutrient Global Leadership Project at the International Life Sciences Institute, will assume the post in January 2004.

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## Asian Development Bank

### ***Options for fortified commercial complementary foods in Asia***

A report from the Asian Development Bank (ADB) and The Keystone Center, *Food Fortification in Asia: Improving Health and Building Economies*, summarizes 10-year Country Investment Plans (CIPs) for fortifying a range of staple foods widely consumed for five countries: People’s Republic of China (PRC), Pakistan, Indonesia, Vietnam and Thailand. Prepared by multisectoral national teams drawn from government, industry and the NGO sector, the CIPs are based on 18 months of analysis, advocacy and partnership building. The work was conducted under ADB’s Regional Technical Assistance Project 5944: *Regional Initiative to Eliminate Micronutrient Malnutrition in Asia and Pacific through Public-Private Partnership*, led by Dr Joseph Hunt, ADB’s Senior Health & Nutrition Specialist.

While focusing on basic foods for maximum and broad population coverage, the national teams also recognized the importance of including complementary foods in the CIPs. Even though these foods address only a narrow and targeted population this is a critically vulnerable group. In Asia, multinational and domestic companies produce fortified complementary foods that sometimes reach into low-income markets. In the western provinces of China and in rural Vietnam, 13-17% of two year olds have consumed commercial complementary foods. But low access and high cost prevent timely, consistent and widespread use among most poor families. Therefore, the CIPs focused on efficiencies, cost reductions and innovations in packaging, distribution and marketing—representing about 50% of product costs.

The Indonesian CIP proposes a collaboration of PT Gizindo, a large domestic producer, Ministry of Health (MOH) and DULOG, the national distribution agency, in an effort to lower distribution costs and increase rural access. Along with conventional distribution, DULOG, which supplies 10% of the rural poor with subsidized rice, will use its rural network of warehouses and personnel to supply both traditional rural outlets as well as a network of MOH clinics and a grassroots organization of midwives. The 10-year CIP proposes a phased expansion to reach 25% of 6-12 month olds in rural areas.

The PRC CIP builds on the production capacity of large domestic and multinational producers and expands distribution in targeted low-income counties in the Northwest provinces via public health agencies and NGOs. The CIP aims to reach 20% of 6-36-month olds in the first year of the programme and scale up to 50% by year five.

Food scientists at Mahidol University in Thailand have developed a simple technology to fortify packaged dried, ground rice—a low cost convenience product popular among low income working families. The incremental cost for micronutrient premix, energy, labor, and new packaging, is estimated at \$0.004 per packet. A producer, currently awaiting Thai FDA clearance, plans to reach about 25,000 poor children – about 10% of Thailand’s 6-12 month olds. The 10-year CIP proposes expanding to five additional producers and eventually reaching half the nation’s 6-12 month olds. Initial financing is integrated into Thailand’s proposal to GAIN.

In Vietnam, where there is no large-scale domestic production of complementary foods, a pilot in three rural areas has demonstrated the feasibility of producing at the community level. *Favina* is produced with simple extrusion technologies and locally purchased raw materials at small production units with 50-kg/hour capacity. Sales of *Favina* have proved sufficient for commercial sustainability and a preliminary biological evaluation on hemoglobin indicates iron-deficiency anemia is more than halved. Technical support, micronutrient mix and quality assurance is supplied by the National Institute of Nutrition (NIN) with GRET/IRD, French NGOs. Marketing and distribution is through traditional commercial outlets as well as through the Vietnam Women’s Union (VWU)—a rural network that reaches to district, commune and village levels. NIN and VWU propose a 10-year expansion to rural 50 “franchises” covering 15% of lower income 6-24 month olds. Financing options are now being pursued.

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### ***Stunted child-overweight mother pairs: an emerging policy concern?***

IFPRI

In developing countries, stunting is generally considered an indicator of chronic vulnerability and poverty. The economic and environmental conditions that produce undernourished children will likely also produce undernourished adults. The co-existence of under- and overweight individuals in the same household then presents a paradox. Previous research has noted the association of underweight-overweight individuals in the same household and suggested that intrahousehold factors increase in influence as economic development and urbanization occur. Along these lines, this paper documents the prevalence, in a number of countries, of the coexistence of a stunted child and an overweight mother in the same household, a phenomenon we term SCOWT. Likewise, it tests whether this phenomenon is associated with urbanization and economic development.

The study uses data on stunting and maternal BMI from 36 Demographic and Health Surveys: 23 in Africa, eight in Latin America, and five in Asia. World Bank and United Nations figures were used for GNP per capita (our indicator of economic development) and for level of urbanization, respectively. Descriptive statistics were derived, and regression analysis was used to test the association between economic development, urbanization, and the prevalence of SCOWT.

The prevalence of SCOWT is generally below 10%, except in four countries, three of which are in Latin America. Among our sample countries, SCOWT is generally more prevalent in Latin America than in Africa, and is below 5% in all five Asian countries.

Contrary to our expectations, SCOWT is not necessarily more prevalent in urban than in rural areas, yet the econometric model confirms an association beyond chance of SCOWT with economic development and urbanization in Latin America and with economic development alone in Africa and Asia. One hypothesis for this result is that Latin America is more economically developed than Africa and Asia. The “urban lifestyle” there may have permeated rural areas as well as smaller towns and cities. In any case, a concrete recognition of SCOWT and similar phenomena would mark an important step towards developing strategies to address problems of nutrition more effectively. The existence of over- and undernutrition in the same household highlights the need for programmes and policies to also address individual-level issues, such as dietary quality; not just strategies that affect the household as a whole, such as programmes to raise household incomes or improve water and sanitation. Only time-series data can confirm whether SCOWT is indeed an “emerging” phenomenon. But these results strongly suggest that the prevalence of SCOWT will increase with continued economic development. Public health and nutrition policies should begin now to consider its implications.

For further information see James Garrett and Marie Ruel, *Stunted Child-Overweight Mother Pairs: An Emerging Policy Concern?* IFPRI Food Consumption and Nutrition Division Discussion Paper No. 148, April 2003.

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### ***International Nutritional Anemia Consultative Group***

INACG

INACG is collecting abstracts for the next INACG Symposium, which will be held in Peru in November 2004. The call for abstract is available at: <http://inacg.ilsa.org>. The deadline for abstract submission is 29 February 2004.

New publications from INACG:

- Report of the 2003 INACG Symposium, “Integrating Programs to Move Iron Deficiency and Anemia Control Forward,” 6 February 2003, Marrakech, Morocco
- The Role of Communication in Comprehensive Anemia Control: A Framework for Planning and Implementing a Strategic Communication Plan
- Now available in French: Anemia, Iron Deficiency, and Iron Deficiency Anemia.

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### ***International Vitamin A Consultative Group***

IVACG

IVACG is collecting abstracts for the XXII IVACG Meeting, “Vitamin A and the Common Micronutrient Agenda” which will be held in Peru in November 2004. The call for abstracts is available at: <http://ivacg.ilsa.org>. The deadline for abstract submission is 29 February 2004.

New publications from IVACG:

- Report of the XXI IVACG Meeting, “Improving the Vitamin A Status of Populations,” 3-5 February 2003, Marrakech, Morocco
- Now available in French, Spanish, and Portuguese: The Annecy Accords to Assess and Control Vitamin A Deficiency: Summary of Recommendations and Clarifications.

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### ***Vitamin A supplementation coverage assessment project***

## Micronutrient Initiative

Despite the increased number of vitamin A supplementation programmes globally over the last several years, gaps still exist in the knowledge of actual coverage in countries. The Micronutrient Initiative (MI) will contribute in improving the quality and precision of information on national coverage rates by conducting an independent assessment of vitamin A supplementation coverage in 21 developing countries where post-NIDs strategies are being implemented. This initiative will entail desk reviews, local interviews in all countries as well as national representative surveys where needed. This initiative started in October 2003 and will be carried out with the support of Emory University.

With the worldwide progress in polio eradication, NID's, the principal vehicle for providing vitamin A supplements, are phasing out in most developing countries. The global supplementation achievements of the past may therefore regress quite rapidly and drastically unless other delivery strategies are established. The vitamin A supplementation coverage assessment project will provide some necessary information for future strategy development.

### *Food fortification experts' training course*

In its efforts to build local capacity in fortification in Africa, MI conducted its first food fortification experts' training course in the region. The course was held in Johannesburg, South Africa in September 2003 and gathered 20 participants from DR Congo, Lesotho, Malawi, Mozambique, Namibia, Swaziland, Kenya and Tanzania. The purpose of the course was to equip participants, mainly nutritionists and food technologists with the tools to carry out preparatory technical work or to strengthen what already exists in their countries. Participants were trained on how to use the Fortification Rapid Assessment Tool (FRAT) and an industry assessment module, two tools used for identifying potential food vehicles and assessing the feasibility of fortifying foods produced by a selected number of industries.

This course represents the start of an ongoing process that will see the establishment and strengthening of national fortification alliances/committees and the development of fortification plans.

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## MOST

### *Ghana's integrated approach to addressing anaemia in pregnant women*

Anaemia is a serious health problem, continually ranked among the top ten causes of morbidity in most regions in Ghana. The latest national anaemia survey, conducted in 1995, indicated high prevalence amongst pre-school children (84%), school-aged children (71%), pregnant women (65%) and lactating women (59%). The WHO epidemiological cutoff of 40% indicates that anaemia is a serious public health problem in Ghana.

Based on a thorough situation analysis and related studies and building upon existing anaemia control efforts, a national integrated five-year anaemia control strategy has been developed, initially targeting pregnant women. This strategy involves the collaborative efforts of a number of programmes within the Ghana Health Service (GHS) and other development partners who form the core of the coordinating committee. The strategy strengthens and integrates current approaches: providing iron folate supplements throughout pregnancy, encouraging application of protocols for intermittent preventive treatment of malaria, providing deworming treatments, encouraging the use of insecticide treated bednets and increasing consumption of iron and vitamin C-rich foods.

As part of the anaemia control plan, the GHS developed a strategic communication plan that is now being implemented. The first phase of this plan focuses on:

- improving political awareness through media encounters and sensitization meetings with key ministry officials
- improving public awareness through the development of a mass media campaign
- reviewing and developing appropriate protocols, Information, Education, Communication materials, job aids, training manuals and curricula for health staff, and
- training health workers on an integrated approach to anaemia control.

Over the past year, numerous consensus-building meetings have been held with senior ministry officials. This includes both regional and district health management teams, who have developed their own communication outreach plans. An advertising firm has been selected to develop a media campaign to include radio spots, brochures and leaflets, a media launch and other demand creation materials. The firm is working closely with the Nutrition and Health Promotion Units of the GHS to develop a "family" of informational materials for pregnant women and counseling tools for health personnel. At the same time, anaemia-related curriculum has been integrated into the antenatal care training being delivered to health workers. Consensus building meetings continue to be held with decision-makers at all levels. These programmes are being closely coordinated by the various GHS units to assure that a viable, sustainable, and integrated programme is established. Technical assistance and funding are provided by USAID through MOST, ILSI, and UNICEF.

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## **UNICEF NYHQ Nutrition Section gears up to take on complementary feeding in new ways**

UNICEF

The UNICEF Nutrition Section supports UN goals and policies, basing our programme work on rights principles, the Millennium Development Goals (MDGs), and our own Medium Term Strategies.

The Section continues to support complementary feeding, introduced during breastfeeding, as a major rights issue. We consider that in addressing the Rights of Women and Children everywhere and in Advancing Humanity, the Convention on the Rights of the Child is a clear guide. Article 24 on the right to the enjoyment of health, records that

States Parties shall pursue full implementation of this right and, in particular, shall take appropriate measures to diminish child mortality...(and) to ensure that all segments of society, in particular parents and children, are informed, have access to education and are supported in the use of basic knowledge of child health and nutrition, the advantages of breastfeeding...and encourage international cooperation with a view to achieving...the full realization of (this) right.

The MDGs further encourage our work in this area. By supporting adequate and timely complementary feeding, the three interactive Units of the Section (Micronutrient, Infant and Young Child Feeding and Care, and the Nutrition Security) address six of the eight goals directly. Our work:

- reduces poverty and hunger
- increases education by increasing brain capacity
- increases gender equality by providing the best start for all and targeting micronutrient needs of young women
- reduces child mortality by at least 20%-50%
- improves maternal health by impacting on postpartum blood loss and contributing to birth intervals, thereby increasing the number of healthy caretakers
- combats the spread of HIV from mother to child when breastfeeding is practiced exclusively, and enhances survival with good complementary foods.

Indirectly, exclusive breastfeeding for the first six months of life, and continued breastfeeding with complementary foods between 6 to 24 months, reduces environmental waste, and in so doing improves the environment as per MDG seven.

One of the Medium Term Strategies is support for early child development. Support for the Global Strategy on Infant and Young Child Feeding emphasizes family and community support of the child with improved complementary feeding and continued breastfeeding from 6 to 24 months or longer. This is the primary objective of the Infant and Young Child Feeding and Care Unit now and into the next biennium. Increasingly, the Micronutrient Unit has been considering how to ensure that complementary foods are rich in necessary nutrients, especially iron EDTA and vitamin A. The new Nutrition Security Unit will work on changing unstable situations through household food security and emergency actions when needed. A focus throughout all of UNICEF's work is the young child.

Specific activities planned for the next biennium include:

- renewed support for community and social mobilization in support of infant and young child feeding
- increased evaluation of food content and supplements at this age, in addition to home-prepared and processed family foods
- special attention in emergency and household food security materials to the breastfeeding-complementary feeding continuum.

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## ***Eighth Nutrition Forum of the Economic Community of West African States***

WAHO

The West African Health Organization (WAHO), the official health agency of the 15-nation Economic Community of West African States (ECOWAS), organized the 8<sup>th</sup> ECOWAS Nutrition Forum in Conakry, Guinea, September 15-19, 2003. The Forum was opened by the Prime Minister of Guinea, with the Ministers of Health and Agriculture in attendance. Sessions included a technical update on micronutrients and a review of nutrition programmes in the region, resulting in concrete recommendations for improving the nutritional situation of West Africa in the near and medium term. Reports of sessions and recommendations are available on WAHO's nutrition website [www.nutritioneconas.org](http://www.nutritioneconas.org).

Malnutrition in West Africa is a major contributor to the region's extremely high under-five mortality rates. WAHO and a number of partners and member countries continue their efforts to put nutrition at the centre of

the development agenda in West Africa. The ECOWAS region covers a population of over 230m—over one fourth of all of Africa, and countries with three working languages, English, French and Portuguese.

Since 2001, WAHO has taken the lead in organizing this annual meeting, and has adopted nutrition as one of its eight programme priorities for the next five years. The annual meeting has grown in scope to become the ECOWAS Nutrition Forum, bringing together nutrition actors from throughout the region. Each year, country delegates choose a specific technical theme. This year's theme was "Micronutrient Malnutrition: The Way Forward." The technical update sessions were organized by the Micronutrient Initiative (MI), with the participation of Helen Keller International, the International Council for the Control of Iodine Deficiency Disorders, Roche Vitamins and the World Food Program. Over 100 participants attended from throughout ECOWAS region and also from the Democratic Republic of the Congo and Mauritania.

The partners supporting the Forum have increased in number over the years with UNICEF playing a vital role. Prior technical updates have been sponsored by the USAID-funded LINKAGES and FANTA projects, the World Bank and HKI. Additional support has come from USAID's MOST project, the Food and Agricultural Organization and the World Health Organization.

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## World Health Organization

### ***The WHO Global Database on Iodine Deficiency Disorders (IDD) and prevalence of iodine deficiency available on the WHO website***

Part of WHO's mandate is to assess the magnitude of major public health problems, to monitor and evaluate the impact of strategies for their prevention and control, and to track related trends over time. The Department of Nutrition for Health and Development manages the Micronutrient Deficiency Information System (MDIS) through WHO's network of regional and country offices and in close collaboration with national health authorities, international organizations, NGOs and academic institutions.

The WHO Global Database on Iodine Deficiency Disorders is one element of the MDIS and includes data on urinary iodine and goitre prevalence from all countries of the world, presented in a standardized way. The database is now available on the WHO website (see below) and will be continuously updated.

Salt iodization is the main strategy recommended by WHO to prevent and control iodine deficiency. Regular monitoring of the population's iodine status is necessary to ensure that control interventions are effective. Through regular monitoring, high risk groups (those with higher iodine requirements) such as pregnant women and young children, can also be identified and subsequently targeted for iodine supplementation.

Based on recent urinary iodine data collected during the period 1993-2003, the current national, regional and worldwide prevalence of iodine deficiency have been estimated. Data on urinary iodine is available from 126 countries covering 92% of the global population. The data show that over the last decade much progress has been made in the elimination of iodine deficiency globally. Since 1993, the number of countries affected by iodine deficiency has decreased by nearly half (from 110 to 54). However, iodine deficiency remains a major public health problem. One third of the population (2b people) in 54 countries still has inadequate iodine intake. Iodine deficiency thus continues to be the world's single greatest cause of preventable brain damage in children.

Data compiled in the WHO Global Database on Iodine Deficiency Disorders intend to draw the attention to the substantial progress made in iodine deficiency control. The data will also encourage governments and international organizations to strengthen efforts in the countries and areas where iodine deficiency is still a public health problem. A coordinated effort, from all partners involved in iodine deficiency control, is needed to meet the goal of IDD elimination by the year 2005.

The WHO Global Database on Iodine Deficiency Disorders and the report of prevalence of iodine deficiency worldwide are available on the WHO website [www3.who.int/whosis/micronutrient/](http://www3.who.int/whosis/micronutrient/). To provide data on iodine deficiency, please contact [micronutrients@who.int](mailto:micronutrients@who.int).

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### ***International growth standards for infants and young children***

WHO is coordinating an international effort to develop child growth standards that will replace the National Center for Health Statistics (NCHS)/WHO reference for infants and young children (age 0-5 years). The project's first phase consisted of the evaluation of current anthropometric references that brought to light important biological and technical deficiencies in the NCHS/WHO reference. This led to the development of a plan for new standards that would document how children *should* grow in all countries rather than merely *describing* how they grew at a particular time and place. Phase 2, the *WHO Multicentre Growth Reference Study*, focused on the collection of growth and related data from approximately 8,500 children in six countries (Brazil, Ghana, India, Norway, Oman, and the United States). This phase ended in October 2003. Phase 3 (data analyses and the production of the proposed standards) began in 2002 and plans have been initiated for Phase 4 (development of training materials, implementation of training programmes, and worldwide dissemination of the new standards). At the

end of Phase 3 the number of growth standards will have expanded to 12 (from the present set of three), and these will be linked to references for attained motor development milestones.

These standards will establish the breastfed infant as the biological norm for growth. The new anthropometric tools will provide more accurate estimates of malnutrition and allow children who are in the process of becoming malnourished to be identified, rather than waiting to make the diagnosis of risk after a static point has been attained. Linking motor development to anthropometric standards will underscore the important message that normal physical growth is an essential but insufficient element of normal development. At present, 99 countries are using the NCHS/WHO growth reference. The goal is for the majority of these countries to have adopted the new standards by 2010. Opportunities presented by shifting to the new standards will be exploited to achieve improved linkages between growth assessments and growth promotion activities in support of the MDGs. The work accomplished in the past 13 years of the project's existence is the product of close collaboration between WHO and the United Nations University, UNICEF, governments and other partners (eg, the Centers for Disease Control and Prevention). Hundreds of scientists have contributed generously to all aspects of the project to date, and the partnership base will continue to expand in the challenging phases ahead.

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### ***Complementary feeding in the Western Pacific Region***

The book *Complementary feeding: family foods for breastfed children*, WHO/NHD/00.1 is being translated into Vietnamese, Khmer, Lao and Mongolian. Translated editions will be printed and available at the beginning of 2004.

The first "Complementary Feeding Counselling Course" for countries in the Western Pacific Region was organized by WHO in Hanoi, Viet Nam, in October 2003, with 32 participants/trainers from Cambodia, Lao, Papua New Guinea, Philippines and Viet Nam. It is a global requirement that all participants and trainers have previously completed the Breastfeeding Counselling Course to ensure smooth running of the course. Some countries have already expressed their interest to replicate the course at national level, depending on available budget. UNICEF and Helen Keller International sent some participants to the course and would be keen to collaborate in future replications, notably in Cambodia.

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### ***Vitamin A Add On Programme***

Vitamin A is an essential micronutrient for healthy growth and development of children. Vitamin A deficiency is a problem in developing countries, causing night blindness, total blindness, lower resistance to infections and death.

Through funding from The Micronutrient Initiative, World Vision (WV) Canada launched a three year vitamin A programme in seven countries in 2002: Guatemala, Haiti, India, Chad, and Zambia, with Tanzania and Afghanistan beginning in 2003. The programme is added onto existing World Vision Area Development Programmes (ADP), thus increasing the capacity of the local staff and community workers.

The goal of the programme is to increase vitamin A capsule (VAC) supplementation coverage to children 6-59 months and postpartum women (except in India due to government policy). While supporting local government policies for VAC distribution, this programme aims especially to increase coverage in hard-to-reach areas. Approximately, 800,000 children and women will benefit per year over three years with a cost of 20 cents per capsule.

A second goal of the project is to increase local capacity for VAC distribution. Through regional and local training workshops, national WV and Ministry of Health staffs are taught the importance of VAC and discuss ways in which to reach more beneficiaries. Also, community education sessions are held in each ADP to teach mothers and caregivers the importance of VAC for children and postpartum women.

A challenge the programme is facing in several countries is reaching postpartum women within eight weeks of delivery. For example, in Zambia, the women who come to the health clinic to deliver or within eight weeks of delivery receive VAC. However, the majority of women delivers at home, and often do not come to the clinic after delivery. We are working on ways to reach these women and educate them on the importance of vitamin A for their health and the health of their newborn. On the other hand, in the Chadian communities we work in, the word vitamin means healthy, so they are seeing great success with women wanting the VAC for themselves and their children.

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World Vision  
Canada

## NUTRITION AND HUMAN RIGHTS COURSE IN OSLO COMING OF AGE

The postgraduate course "Nutrition and Human Rights" at the University of Oslo was conducted for the seventh time from April-June 2003. Food and nutrition provides a good entry point to understanding linkages between practical development concerns and human rights in general, and economic, social and cultural rights in particular. Nutrition can draw on a broad spectrum of such rights as laid down in international legal human rights conventions, including the rights to adequate food, health and care, employment, education, and clean water. Moreover, the role of the State and its obligations under international law to respect, protect and fulfill such rights, provides an under-utilized opportunity for nutrition workers to underpin demands on governments to formulate and implement effective and non-discriminative food and nutrition policies and programmes.

As seen in earlier held courses, a very engaged group participated in the 2003 course—this year of mixed background, experience and age. Thus, several were able to draw on aspects of their own work experience and reconsider it in a human rights perspective, enriching the course as a whole. Here are some personal statements:

*Very few professionals in the field of food and nutrition understand what a human rights approach to their work would mean and its benefits—I was in the same state before having attended the course in Oslo! To get the right to food issue further advanced there is a serious need for education and training at various levels—most importantly at national institutions in developing countries. Certainly, there will be a need for a critical mass of teachers for this, and courses like the one in Oslo can be instrumental in building up such a mass, jointly with others.* —Franz Simmersbach, former senior staff member, Food and Nutrition Division, FAO, Rome

*Interesting and very up to date course, with participants from whom I also learnt a lot. For me, it gave a broader view on food security. This course should be given in The Netherlands too!* —Maartje Mangelaars, Dutch student of Nutrition, Wageningen University, The Netherlands

*I got enthusiastic learning about the connection between food and human rights and seeing what an enormous task we are facing worldwide on many different levels. I got to understand that the different rights are not only paragraphs on a piece of paper, but instrumental in a worldwide activity on different arenas. Fellow students from different continents and with different work experience brought valuable thoughts and learning to the whole group.* —Annbjørg Lindbäck, teacher in Home Economics and Social Science; Master student in "Nutrition, Health and the Environment", Hiak, Norway

*The course for me was an introduction to a world with different and exciting perspectives on food and nutrition in development, one that links so many areas and angles of development goals and provides fertile grounds for developing both practical and conceptual tools to aid our efforts. To become familiar with human rights - including to adequate food and nutrition - that are legally recognized, nationally and internationally, provides potentially powerful tools that we must learn to use effectively to improve the lives of our poor majority. How to use them will imply training many more development workers. As only a few of us have the possibility and privilege of attending a course in Oslo, there is an urgent need to multiply these courses in other parts of the world. Should we start with Latin America?* —Nancy Velarde, Nutrition Consultant; Coordinating Director, Mechanism for Social Control, Cochabamba, Bolivia

*From having been deeply interested in human rights since long, I now am able to actually work with the relevant instruments available and apply them in practical contexts of concern, including in the global breastfeeding debate. While the right of infants to be breastfed continues to be a matter of controversy, there can be no doubt that mothers' right to be enabled to breastfeed their babies must and can be met by different actors in their environment, including the responsible State.* —Elisabet Helsing, Senior Adviser, Norwegian Board of Health; former Regional Nutrition Advisor, WHO Regional Office, Copenhagen

*The nutrition and human rights course opened up my eyes in many ways. The most important thing I learned was that the right to adequate food can be a powerful tool to combat hunger and poverty worldwide. The course has encouraged me to continue the fight against hunger, and I have become a member of the right to food movement through FLAN!* —Sigrun Henjum, Master student in nutrition, University of Oslo, Norway.

*As a nutritionist in a developing country the course in nutrition and human rights proved very important to my work. It has provided a framework pointing to opportunities for nutrition advocacy at all levels. The course provided also tools for addressing nutritional problems at community level, both for policy orientation, planning and evaluation, all in a human rights perspective. Therefore, as a civil servant and with a focus on communities, I believe that my skills in planning and designing community interventions have been greatly improved.* —Isatou Semega-Janneh, Executive Director, National Nutrition Agency, The Gambia; Research Fellow, Institute for Nutrition Research University of Oslo, Norway

The course will be offered again in 2004, starting shortly after Easter and ending mid-June. It is a joint undertaking by the Institute for Nutrition Research at the University of Oslo and the Akershus University College (Hiak). Course coordinators are Siri Damman, Wenche Barth Eide, Kaia Engesveen and Arne Oshaug. For further information see [www.uio/studier/emner/medisin/nutri/ERN4352/index-eng.html](http://www.uio/studier/emner/medisin/nutri/ERN4352/index-eng.html) and/or contact [GlobNutCourses@basalmed.uio.no](mailto:GlobNutCourses@basalmed.uio.no).



# EMERGENCIES

## COMMUNITY THERAPEUTIC CARE WORKSHOP

A workshop on Community Therapeutic Care was convened by Valid International and Concern, 8-10 October 2003, in Dublin, Ireland to compare lessons learnt about outpatient treatment of severe malnutrition. The meeting was attended by representatives of NGOs, UN agencies, academics and donors.

### **Background**

Until recently, most severely malnourished patients were treated in inpatient facilities (Therapeutic Feeding Centres), following a standardised WHO protocol<sup>1</sup>. Inpatients receive a milk-based diet (formula F-75 and F-100) in quantities tailored to metabolic needs and are given appropriate medical care.

However, residential care increases the risk of cross-infections and mothers are required to stay with their children, disrupting home life. Centralized TFCs may also limit the coverage of the programme. Ways of treating severely malnourished children as outpatients have been explored. Yet, home use of a liquid milk-based diet under unhygienic conditions cannot be recommended. A solid ready-to-use therapeutic food (RUTF), designed to be a possible substitute for F-100 and to be highly resistant to contamination with bacteria, has been developed. Studies in Chad and Senegal showed that RUTF was very well accepted during the recovery phase of the treatment of severe malnutrition, although sick children may prefer F-100<sup>2,3</sup>.

### **Community Therapeutic Care (CTC) concept**

The concept of CTC<sup>4</sup>, developed by Valid International, aims to treat most people with severe malnutrition in their homes. CTC has the following elements:

- stabilization phase in stabilisation centres: inpatient initial phase of treatment of severe malnutrition with complication (not alert, anorexia, medical complications), following the WHO protocol
- Outpatient Therapeutic Programme (OTP): provide RUTF and simple medical protocols to severely malnourished children without complications; OTP are attached to supplementary feeding programmes or health infrastructures
- supplementary feeding programme to treat moderate malnutrition
- community mobilization component
- local production of RUTF where appropriate
- embedding of the programme in food security and other interventions

### **Coverage of nutrition programmes**

Coverage of nutrition programmes is a crucial indicator of impact of the nutrition programmes. Currently, standard approaches to assessing therapeutic feeding coverage involve making use of nutritional anthropometric surveys, either directly or indirectly using survey data. This methodology presents several limitations to estimate the coverage of nutrition programmes. A new methodology has been proposed by Brixton health: the centric systematic area sampling (CSAS). The method is based on active case-finding. The project area is split into 30 equal sized quadrants and cases of severe malnutrition are sought. A simple count of cases enrolled in the programme compared to cases not enrolled in the programme is made.

### **Experiences of home-based therapeutic feeding**

Presentations on home-based feeding were made by Action contre la Faim, Concern, Ministry of Health Malawi, MSF-Belgium, MSF-France, Save the Children-UK, University of Dakar, University of Malawi/University of Washington and Valid International.

There was considerable variation in both the context of the programmes and the protocols applied; the programmes and trials were implemented in seven different countries (Afghanistan, Ethiopia, Niger, Malawi, Senegal, Sierra Leone and Sudan); the protocols included either compulsory inpatient phase for all severely malnourished children, inpatient phase only for complicated malnutrition or no inpatient care at all.

The different presentations and the following discussions showed that:

- death rates seemed to remain under-control
- weight gains were acceptable
- defaulter rates were variable



- very good coverage was achieved in some programmes
- there was no clear agreement on whether an initial phase of inpatient treatment was necessary in the treatment of uncomplicated malnutrition, and on what should be the protocol for under-twelve month old children.

Anthropological studies, carried out in Malawi and Sierra Leone, looking at the acceptability of outpatient treatment compared to inpatient treatment, revealed that there was less disruption to home life (domestic and farm work, children care and women's social responsibilities) and that access to treatment was improved.

### ***Local production of RUTF***

Local production of RUTF may be desirable in some contexts to reduce cost and increase sustainability. There have been positive experiences from Malawi and Senegal. In Senegal, a randomly controlled trial showed no difference in outcomes between two groups of children treated either with imported RUTF or locally produced RUTF. Major potential problems in the implementation of local production were identified as:

- quality of ingredients, especially peanut butter and oil
- suitability of production facilities
- management expertise
- adequate process control
- adequate independent laboratory facilities for routine quality insurance

Although context should determine what strategies to implement, outpatient based treatment is a very promising tool to add to the box of implementation strategies to deal with severe malnutrition.

A full report of the workshop will be published by the Emergency Nutrition Network by early 2004.

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### **The Sphere Project**

### **Humanitarian Charter and Minimum Standards in Disaster Response**

The revised edition (2004) of the Sphere Handbook was launched on 30 October 2003 simultaneously in Geneva and Washington DC. This new edition of the handbook has been thoroughly revised and updated, taking into account recent developments in humanitarian practice in water/sanitation, food, shelter and health, together with feedback from practitioners in the field, research institutes and cross-cutting experts in protection, gender, children, older people, disabled people, HIV/AIDS and the environment. To order English copies of the 2004 edition, contact [publish@oxfam.org.uk](mailto:publish@oxfam.org.uk).

## INTERNATIONAL WORKSHOP ON FOOD AID CONTRIBUTIONS AND RISKS TO SUSTAINABLE FOOD SECURITY

Food aid in certain situations is necessary, often life saving and indispensable in emergencies. However, the current practice of food aid is increasingly being blamed as weakening local markets and production, creating dependencies or undermining self-help capacity. Sometimes, food aid is misused for surplus disposal, is subjected to politics, and is prone to delayed responses and poor targeting. The issues of HIV/AIDS and genetically modified foods create new challenges. The German Government organized an international workshop to:

- critically examine the possible contributions and risks of food aid, especially in working towards sustainable food security
- outline needed reforms and elaborate clear guidelines for its responsible use.

The workshop, held 2-4 September 2003 in Berlin, was the second conference in a series called "Policies against Hunger". The event was hosted by the Federal Ministry of Consumer Protection, Food and Agriculture (BMVEL), in cooperation with the Federal Ministry for Economic Cooperation and Development (BMZ), the Federal Foreign Office (AA), the German Technical Cooperation (GTZ), the Deutsche Welthungerhilfe/German Agro Action (DWHH) and InWEnt–Capacity Building International, Germany.

More than 250 participants from 73 countries came together. Among them were key players and policy experts on international food security. Keynote speakers presented current policies and practices of international food aid in the context of sustainable food security. Round table groups clarified the role of food aid within sustainable food security. Five sub-plenary working groups worked on the topics such as emergency food aid in the context of natural disasters, crisis and conflict, HIV/AIDS and food aid as an incentive for development. The working groups drafted "guiding principles" for the use of food aid in the different contexts and drew up recommendations on how to implement these principles. Specific thought was given to the current negotiations of the World Trade Organisation (WTO) and the Food Aid Convention (FAC), as well as the debate on the Voluntary Guidelines for the Implementation of the Right to Food.

Main messages of the workshop were that: food aid has to be a part of other key food security policies, should only be demand driven, and carefully restricted to situations where it is the most appropriate means to solve the underlying problem. Food aid should be clearly separated from commercial trade to avoid disrupting markets, investment and production. Reform is needed in the food aid regimes at global and national level, rethinking the role of FAC, WTO and WFP. All speeches, keynotes, group presentations and the results of the intensive discussions, as well as the "Berlin Statement on Food Aid" in different languages can be found on the workshop's website at [www.foodaid-berlin2003.de](http://www.foodaid-berlin2003.de).

### Berlin Statement

#### *General issues and recommendations*

1. The Millennium Development Goal to cut hunger in half by 2015 will not be achieved with business as usual. A massive scaling up of food security actions globally, and by the countries with high prevalence of food insecurity is needed. Simply meeting aggregate food needs or GDP growth targets at national level will not suffice. Too many countries are currently regressing on the measures used to define the food security objective as stated by the FAO Food Summit. Taking responsibility for the persistence of world hunger, at international and government levels has to be more than words.
2. The definition of 'food aid' should not just be focused on its source of funding, or by specific transactions, such as "items donated from external donors to recipient", but should include consideration of a) all related international and domestic actions and programs, and b) the role of non-food resources brought to bear jointly with food to address key elements of hunger problems. As such, food aid can be understood as all food supported interventions aimed at improving the food security of poor people in the short and long term, whether funded via international, national, public and private resources.
3. Food aid is only one of a multitude of instruments in the fight against hunger. Food aided food security interventions should not be planned in isolation of other key food security policies. Food aid policy should be consistent and coherent with agriculture and trade policy. Food aid must be assessed in the broader context of food security policy, as one element of an insurance policy for the poor, which means to an exceptional measure, rather than the usual. The impact of food aid on food security of people depends on national government policies, international policies, the acuteness of local conditions, the country context, and the appropriateness of food aid management modalities.
4. Food aid policies and deliveries should respect and promote the human right to food. International food aid should assist countries in need, but only after they have exhausted their own related food resources. The use of food aid can contribute to the realization of the right to adequate food if it is a reliable source of support in emergencies. Such a source should be provided by the donor community, rather than individual donors be held accountable. The management of food aid must also not work counter the human right to food by undermining the capacity of people to feed themselves.
5. Good governance of the whole food system in developing countries will contribute over time to a decreased need for food aid. Food aid should be provided only when it is the most effective and appropriate



means of assistance, compared with real, which means immediately available, alternatives including forms of financial assistance. Corruption in the food system must be countered as in any other public domain. As it affects the poorest, it requires particular attention.

6. Civil society organizations including national and international NGOs should play key roles in facilitating good governance of the food aid systems, and in grass roots needs assessment and as donors in food aid delivery.
7. Food aid must address well-defined problems involving immediate food shortage in flexible ways, with the aim of:
  - saving lives
  - protecting livelihoods and assets of the poor affected by natural and man-made disasters
  - protect livelihoods of chronically vulnerable social groups, including refugees, internally displaced persons, the disabled, AIDS orphans and the destitute
  - support complementary and synergistic efforts to improve the human resources of vulnerable people where food shortage is a major constraint.
8. Food aid allocation should be based on sound 'needs' assessment, involving both recipient and donors, and optimally targeted to the needy and vulnerable groups. Optimal targeting entails due consideration of the costs of targeting, and utilization of accessible timely information.
9. A "do no harm" approach to food aid delivery is called for. Food aid, which involves commodities provided directly to the recipient government or its agent for sales on local markets, has often been driven by surplus disposal intentions or market stabilization policies of donor countries. The cutting back of food aid on the one hand, and its expansion on the other hand driven by international food ups and downs of prices is unacceptable. Multi-lateral food aid adds to independent response capabilities. Further strengthening of multi-lateral, undirected, food aid is therefore called for.
10. The international governance of food aid requires reform and streamlining in order to achieve predictability, accountability of appropriate volumes, and timely delivery of food aid. This calls for due consideration of food aid policy in the WTO Development round and re-assessment of the Food Aid Convention.

### ***Specific issues and recommendations***

#### EMERGENCY FOOD AID IN THE CONTEXT OF NATURAL DISASTERS, ARMED CONFLICT AND POPULATION DISPLACEMENT

1. Adequate attention should be put to natural disasters as well as conflicts. Success in mitigating the effects of natural disasters and conflicts indicates that food aid has a continuing role in emergency relief, post-crisis rehabilitation, and potentially in pre-next-crisis mitigation which can contribute to the transition between relief, rehabilitation and long-term development.
2. Maintain and enhance famine early warning systems, and couple early warnings with timely response by donors and governments. Systems to predict climate-related humanitarian crisis are used nowadays to anticipate and prepare food aid deliveries. Efforts to improve these systems should continue, with a focus on enhancing the international community's ability to conduct rapid emergency needs assessment that pay closer attention to a) non-food needs (in addition to food), and b) times when food is not needed. This facilitates appropriate exit strategies from food aid and avoids dependencies.
3. Food aid in emergencies should be restricted to situations where it is the most appropriate means to solve the underlying problem, ie:
  - to provide relief in cases of protracted crisis
  - as a contribution to strategic reserves and safety nets
  - for operations linking relief, rehabilitation and development.
4. Poor targeting, including that due to mistiming of deliveries, often reveals itself through price adjustments on local food markets as supply increases at a faster rate than demand. Food aid should be timely delivered in emergencies. In this case, local purchases may have the advantage of providing food aid on time. National food policy capacities must be strengthened in developing countries to appropriately deal with food (and other development) aid instabilities.
5. While emergency relief facilitates future development, it also should be linked with long term development action. The provision of food aid in emergency situations should take particular account of longer-term rehabilitation objectives.

#### FOOD AID FOR DEVELOPMENT

1. Food based activities are indicated in regions and under circumstances only, where the envisaged developmental objectives cannot be met more cost-effectively or in a more sustainable way by non-food activities. More resources need to be made available for effective 'development needs assessments' (compared with emergency needs assessments) so that those regions and circumstances can be appropriately determined and the food-versus-other-resource decisions can be more empirically informed.
2. Food aid has been shown to be useful in supporting development where it has protected assets and prevented vulnerable people from falling into destitution. Where food aid is the appropriate intervention in this sense, it should focus on

- infrastructure development and reconstruction (by food for work),
  - human capital (eg by food for education or school meals) health and nutrition (eg by maternal and child health programs).
3. School feeding programme providing large coverage but adjusted to local needs and where needed, supported by food aid should be considered. Where possible these should draw on local food production, but only with government buy-in assured.
  4. The role of food aid in poverty reduction strategies (PRSPs) as part of food security actions warrants further attention.

#### FOOD AID IN THE CONTEXT OF HEALTH CRISES, INCLUDING HIV/AIDS

1. For poor households, HIV/AIDS represents a massive and irreversible shock that seriously affects their ability to sustain their livelihoods and remain food security. They are faced with significantly reduced income, fewer people available to work and an unrelenting need for food and medicine. Special attention needs to be given to orphans.
2. In areas of high food insecurity and high HIV prevalence, food assistance can provide a safety net to catch families before they become destitute, and thus even more vulnerable to the risk of infection, and they can support the needs of orphans and foster families in the aftermath of family dissolution due to AIDS.
3. Food aid project design should generally target people on the basis of food insecurity rather than on the basis of their HIV/AIDS status. As there are serious stigma issues involved, many people with HIV do not yet know that they are infected, and other non-affected households may be equally vulnerable for other reasons. The complex issue of scaling up many pilot programs needs due attention and learning from shared experiences.

#### FOOD AID MANAGEMENT AND DELIVERY

1. Food aid has to avoid disrupting markets, investment, and production, whether it is delivered from overseas or purchased within the region. In order to promote local agricultural development, strengthen regional and local markets, and ensure sustained food security, consideration shall be given to using direct cash contribution for the purchase of food within the recipient country, or region. While local purchases have many benefits they too must be guided by careful assessments of availability, potential price effects, food safety, and comparative costs.
2. Food aid should be culturally acceptable and respect nutritional needs and eating habits, and adhere to food safety standards. Food aid must adhere to food- and bio-safety standards. In view of limited capacities of recipient countries, donors must only deliver food aid, which meets safety standards accepted by the Codex Alimentarius. The capacities of food and bio-safety standard assessment in recipient countries need strengthening so that countries can make informed choices, including on genetically modified organisms.
3. Strengthening the role of civil society organizations and of the private sector (in market and retail business) should be explored to facilitate effectiveness and efficiency of food aid delivery.
4. Food aid may be a suitable instrument under certain conditions such as inefficiency of local markets or administrative structures. Because of high transaction costs, it is often less efficient than cash based interventions. Sustainable impact can only be reached when combined with other developmental interventions.
5. Shared analytical frameworks are needed in a rapidly changing domestic and international context, and increased dialogue is needed for coordinated analyses of food aid, including participatory approaches at local levels.

#### TOWARD REFORMING THE FOOD AID REGIMES AT GLOBAL AND NATIONAL LEVELS

1. Food aid should be clearly separated from commercial trade. The provision of food aid should not be tied directly or indirectly, formally or informally, to commercial exports of agricultural products or other goods and services to recipient countries. The WTO negotiations should lead in this direction.
2. Food aid to LDCs should be provided exclusively in grant form in order not to increase the debt burden of vulnerable countries.
3. Neither the Food Aid Convention nor the WTO Marrakesh Agreement (of the Uruguay Round) have acted as an effective coordination mechanism for global food aid nor as an effective safety net for the poor.
4. The Food Aid Convention has had limited and unsatisfactory impact in reducing fluctuations or setting minimum levels of food aid needs. This raises serious questions about the credibility of the Convention in establishing a safety net and the most appropriate form of international commitments for protecting the food security of developing countries. The Food Aid Convention should arguably be discontinued in its current form after 2005.
5. Consideration should be given to replace the Food Aid Convention by a new type of Food Aid Compact that could be brought for example under the WTO as an element of the WTO Development Round.
6. The reform of food aid regimes at international and at national level should be accompanied by an international Code of Conduct strengthening accountability, effectiveness, fairness, and transparency, and monitored by an appropriate independent body under the auspices of for example the WTO. A participatory process toward developing such Code of Conduct, building on existing components, should be designed.
7. A reformed global food aid governance system must not entail dominance of global organizations in the food aid system, given the complexities of the national food security problem, regional diversity, and comparative advantages of organizational strengths.

*Editor's Note: The following is a response to the article by Judith Richter entitled, "Global public-private 'partnerships': how do we ensure that they are in the public interest?" published in **SCN News #26**. **SCN News** encourages readers to respond to any of its articles in order to continue the debate towards improved international nutrition.*

### **On Partners and Partnership**

**Cecilia A Florencio, University of the Philippines**

There has been a significant change in the cast of characters in the nutrition story with the entry of industry and its quick ascendance to a key role. It is appropriate that the nutrition community pay greater attention to examining public-private "partnerships" for improved nutrition. In weighing the merits and demerits of partnerships, public interest and well-being must be the overarching concern; a concern that diminishes in significance whenever government views the entry of the private sector primarily as "lightening its load" and sees its crucial part in the "partnership" as paving the way for the other party to play an even greater role.

Let us consider these examples. A government research institute heeded the call for micronutrient fortification, and how! It studied fortification of carbonated beverages with iron, zinc, iodine and vitamins A, B3, B6, B12, C and E. The justification was consumption of fortified carbonated beverages, the favorite drinks of children and adults, rich and poor alike, can accelerate elimination of micronutrient deficiencies as well as improve the health of the general population. How's fortified carbonated beverage as the great social equalizer!

In connection with a healthy lifestyle campaign, a health ministry in partnership with a nationally-based Coca-Cola Export Corporation issued educational material containing ten tips. The message "drink enough fluids everyday" was depicted in a picture with a softdrink bottle along with milk, soup and fruit juice—for variety. Further, to promote a healthy lifestyle, a government nutrition scientist, a private nutrition foundation, and a former secretary of health lent their presence in a tri-media advertisement on soy sauce. The line of soy sauce contained isoflavones—and isoflavones prevent cancer. It is naïve to think the layman would not conclude that soy sauce prevents cancer, even if the nutrition authorities in the advertisement were not directly endorsing the product.

Another "partnership" deserving more attention is that between government and international organizations. There is value in sharing experiences, not only on what works, but also what does not because both provide lessons and challenges. An example is the universal vitamin A supplementation programme in my country. After five years of implementation, with the presence of so-called success factors (political leadership, sustainability, local government support, etc), the prevalence of vitamin A deficiency (in terms of serum retinol) in preschool children increased and remains a public health problem, not only nationally, but in all 16 regions of the country and ten highly urbanized cities. Instead of presenting a more complete picture of the supplementation programme to generate a more enlightened discussion, the focus of a presentation by a nutrition scientist on the country's experience during an international conference on vitamin A was on "success" indicators and "success" factors. Is there no merit in collective thinking about the place of vertical and particularistic micronutrient supplementation programmes as a preventive measure in a country where stunting and underweight in young children are very high and widespread, where daily diets are nutritionally inadequate, and where infection remains a major cause of morbidity? There is a place for micronutrient supplementation and food fortification. But, dietary diversification and improvement in dietary quality deserve priority when thinking about preventive strategies to address nutritional concerns.

There is a need to rethink the positive bias of nutrition publications and international get-togethers. It is ironic that even as the nutrition community is still in search of indicators to measure programme performance in nutrition it trumpets the "successful" and whispers the "unsuccessful." In the end, the fundamental questions are: What is public interest and well-being? Whose perspectives are sought and judiciously considered? Who gives the answers? Who reviews the answers?

Thinking about "nutrition thinking" is a worthy partner to incorporating "nutrition thinking" into the development process.

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## LOCAL ADAPTATION OF WHO'S SANITARY INSPECTION FOR DRINKING-WATER QUALITY IN GRANDE MEFOU, CAMEROON

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*Editor's Note: This issue of **SCN News** begins a series of articles on water's role in promoting health and nutrition. Contaminated or unsafe water supplies can compromise nutritional status, especially in vulnerable groups such as children. Proper water and sanitation systems must be promoted in order to reduce the number of diarrhoeal incidences and parasitic infections. In the two articles below, authors discuss methods of determining drinking-water quality and methods of water disinfection. Emphasis is placed not only on the quality of water at the source, but also on the point of use, including water transportation. The next series of articles in **SCN News #28** will discuss SODIS, an effective method of water disinfection.*

Although considered a human right, the provision of adequate drinking water is a major problem in developing countries. Water related diseases cause the death of more than 3m people each year<sup>1</sup>. In Cameroon, water quality is a major health problem; only 54% of the total population has access to drinking-water (39% in rural areas)<sup>2</sup>. The Grande Mefou is a tropical humid region situated in south-eastern Cameroon. Access to water is difficult, with long distances between water holes and habitations and uneven ground. There are few roads and loads are carried by women and small children.

In this study, water quality of covered hand-pump wells of the Grande Mefou was evaluated for the first time using bacteriological analyses (thermo-tolerant coliforms)<sup>3</sup>. The World Health Organization's (WHO) Guidelines for drinking water quality<sup>4</sup> provide an example sanitary inspection form (see check-list 1, page 63) to help collect information regarding specific points of risk to the water supply. These sanitary inspection procedures were compared to bacteriological analyses, resulting in no correlation between the two methods. Since the sanitary inspection form did not seem to represent the situation of the wells in Grande Mefou, new criteria (the modified sanitary score, page 63) have been proposed<sup>3</sup>. Further, the importance of adapting criteria and health education messages to local situations is discussed<sup>5</sup>.

### Methods and results

In March 1996, 37 covered hand-pump wells were subjected to a sanitary inspection in Grande Mefou. These wells were chosen for their proximity to a sanitary structure (eg, dispensary, small hospital) and each served a population of between 100 and 1000 people. The sanitary inspection consisted of an evaluation of the exterior aspects of the wells and their close environment. This allows for identification of wells that are likely to pose an actual or a potential danger to the health of the consumer<sup>4</sup>.

The sanitary inspection form for a tubewell with a hand-pump was taken from WHO's Guidelines for drinking water quality (see check-list 1)<sup>6</sup>. Since none of the examples given in the Guidelines were similar to our local situation, the closest was chosen. The hazard (high, medium, small risk) attributable to the source and supply was quantified by using the contamination risk score proposed by WHO<sup>7</sup>. The sanitary inspection was then compared to bacteriological analyses performed the same day. Thermo-tolerant coliforms bacteria was used as an indicator of faecal contamination of water<sup>8</sup>.

Table 1 WHO's sanitary inspection score and bacteriological analyses show poor correlation.

WHO's sanitary inspection score	Number of wells	Number of CFU/100ml/wells
Small risk (0-2)	14	14.4
Intermediate risk (3-5)	20	3.9
High risk (6-8)	3	9.7

Table 2 A good correlation exists between the modified sanitary inspection score and the bacteriological analyses.

Modified sanitary inspection score	Number of wells	Number of CFU/100ml/wells
Small risk (1-1.5)	2	2
Medium risk (2-2.5)	24	7.2
High risk (3-4)	11	11.9

Bacteriological analyses was conducted in the field using the Millipore® set membrane filtration method for thermo-tolerant coliforms. The degree of contamination is expressed in colony forming unit (CFU) per 100ml, with 10 CFU/100ml considered tolerable for drinking water quality. The bacteriological analyses show that the 37 wells contained a total of 308 thermo-tolerant coliforms. Approximately one third of the wells (37.8%) contained more than 10 CFU/100ml. As shown in Table 1, WHO's inspection score correlated poorly to the biological analyses. The modified sanitary score, however, correlates well with the bacteriological analyses (Table 2). No statistical analysis was done as the correlation is self-evident and the number of wells is small.

### Discussion

The bacteriological analyses showed that approximately one third of the wells contained more than 10 CFU/100ml, which is above the tolerable limit for drinking water. The contamination is most likely the result of infiltration of stool into the ground water, in addition to the poor conditions of the wells resulting from years of wear and tear. The lack of latrines, or their construction in places without precise notions of local hydrogeology, most likely contributes to the infiltration of stool into ground water. Adequate sanitation and education are thus deciding factors in water quality.

More alarming is the major discrepancy between the bacteriological analyses and results of the WHO's sanitary inspection criteria. This is probably due to criteria not representing the reality of the local context. Two points seem particularly pertinent to the infiltration of stools into the well areas. First, areas around the wells were not protected by a fence, hence animals (especially goats and chicken) were allowed to wander freely. Second, there is a hatch located on the cement floor of the wells, which accessed the water.

After observation of the situation of the covered hand-pump wells in the Grande Mefou, a modified sanitary inspection score was proposed, which strongly correlates with the bacteriological results obtained. Yet, the new inspection score is not perfectly adaptable because it does not take in account people's behaviours and habits. For example, even if latrines are situated within 10 meters from a hand-pump, people may choose to use fields located much closer and/or above them. The wells may also be used as bathrooms and/or washing areas. Sanitary inspection should therefore not only take into account the static situation of the wells, but also the dynamics of their use. WHO state that the inspection procedures cannot be widely applicable,<sup>4</sup> but it must also be stressed that any procedure has to be locally validated before utilization. It is therefore very important for local health professionals to be very critical when using such procedures.

This is also true for health education messages transmitted to the population. Many educational messages made by international organizations are widely distributed without being properly tested for their interpretation and comprehension by local populations. In 1986, in the north of Cameroon, Robert et al studied people's knowledge of health and their day-to-day health practices to determine the feasibility of establishing a community-centred system for the monitoring and prevention of schistosomiasis<sup>5</sup>. The goal of their anthropological survey was to devise relevant educational messages and practical educational tools. An analysis of an educational message and its impact on the villagers' comprehension was also assessed. The study raised some fundamental issues concerning the intelligibility of such messages. For example, conventional perspective was a mode of representation not understood by all. A person drawn smaller than another was taken to be a child rather than a more distant adult.

The primary difficulty in health education is its transcultural nature. Interventions should not be implemented in developing countries without a clear understanding of social, cultural, geographical and economic contexts.

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### Check-list 1

#### WHO's Sanitary Inspection (Deep and shallow tubewell with handpump)

##### A. General Information

Health Center:..... Village:.....

Date of visit:.....

Is water sample taken: y/n

Thermotolerant coliform grade:.....

B. Specific diagnostic information for assessment	Risk
1. Is there a latrine within 10m of the handpump?	y/n
2. Is the nearest latrine on higher ground than the handpump?	y/n
3. Is there any other source of pollution within 10m of the handpump? (eg, animal excreta, rubbish, surface water)	y/n
4. Is the drainage poor, causing stagnant water within 2m of the handpump?	y/n
5. Is the handpump drainage channel faulty? Is it broken, permitting ponding? y/n	
6. Is there inadequate fencing around the handpump with which would allow animals in?	y/n
7. Is the cement floor less than 1m radius all around the handpump?	y/n
8. Is there any ponding on the cement floor around the handpump?	y/n
9. Are there any cracks on the cement floor around the handpump which could permit water to enter the well?	y/n
10. Is the handpump loose at the point of attachment to the base? (which would permit water to enter the casing)	y/n

Contamination risk score: 9-10/10=very high; 6-8=high; 3-5=intermediate; 0-2=low

Sanitary inspection check-list adapted from WHO *Guideline's for drinking-water quality*, 2nd Edition. Volume 2 Surveillance and control of community supplies. WHO: Geneva, 1997.

### Check-list 2

#### IMSP Modified Sanitary Inspection

1. Is there a latrine within 10m of the handpump? Y=1 point
2. Is there a hatch on the cement floor around the handpump? Y=1 point
3. Is there any pooling on the cement floor around the handpump? Y=1/2 point
4. Are there any cracks on the cement floor around the handpump which could permit water to enter the well? Y=1 point
5. Is the handpump loose at the point of attachment to the base? (which could permit water to enter the casing) y=1/2 point

Contamination risk score: 3-4=high; 2-2.5=intermediate; 0-1.5=low. A score of 2.5 or more implies a bacteriological analysis.

## DRINKING WATER IN THE DISTRICT OF MFOU, CAMEROON: BACTERIOLOGICAL ASSESSMENT AND POSSIBLE INTERVENTIONS AT THE POINT OF USE

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Our dependence on water makes it an ideal vehicle for numerous pathogens. The *World Health Report* recorded 1.7m deaths and a burden of disease of 61.1m DALYs due to infectious diarrhoea alone in 2002<sup>1</sup>. Because of this, important efforts have been invested in increasing the availability of clean water sources in the world's poorest areas. It has, however, been shown that water can become contaminated during storage and handling<sup>2-5</sup>. Since water storage requires many steps, all of which are a risk for contamination, this is not surprising. In such cases, providing a community with a clean source of water only incompletely addresses the problem of water-born disease and the impact of water on faecal-oral transmission.

This is the second part of a two-part study on drinking water quality in the district of Mfou, Cameroon. The first part focused on the quality of water at the source (see Motamed et al, page 61). In this study, conducted in the same area, water storage and handling were observed, along with the bacteriological quality of drinking water at the source and the point of use. Based on observations, various means of water treatment at the point of use are discussed and the advantages and drawbacks of their implementation are assessed.

### **Methods**

Cameroon stretches over 475,440 km<sup>2</sup> from the sub-Saharan region to the tropical forest in Central Africa. Its population of 14.3m inhabitants is made up of almost 200 ethnic groups. The district of Mfou is close to the capital, Yaounde, in the South. The Cameroon National Water Society supplies water to the larger towns, but failures are frequent. Villages get their water from traditional wells and pump wells. A well-boring project funded in part by foreign aid is active in the district of Mfou. Underground water is abundant and close to the surface, with some houses equipped with cisterns.

For this study, water carriers were followed both from pump-wells and traditional wells. In each case, observations were made on how water was handled and stored. Samples were taken for bacteriological analysis at the well or water source, and again at each step that involved handling the water or changing its container. Water from the well had already been analyzed as part of the previous study. A new sample was taken on the day where storage and handling was observed to avoid the risk that variable contamination levels in the well might become a confounding factor.

The project was explained to the appropriate local authorities, water carriers, and, where appropriate, other members of the household. Authorization was obtained from each of them.

To avoid contamination by contact, water was sampled from containers by pouring from the container to the sampling jar. Samples from pump-wells were taken by first pumping enough water out to ensure that the sample came from the well, not from the pipe. The rims of the containers and the outlets of the wells were kept over a flame and then allowed to cool before taking the samples.

Samples were tested for human fecal contamination using membrane-filtration cultures of thermo-tolerant coliforms. Portable Millipore® material was used to cultivate the samples and colony forming units (CFUs) were counted visually. Samples were taken during the dry season in March, and during two rainy seasons in April and September.

### **Results**

Results confirmed an alarming frequency of water contamination at the point of use in the district of Mfou. In the observed area, the availability of clean sources of water did not guarantee that clean water was drunk. These results are similar to others described elsewhere<sup>2-5,7</sup>.

Cultures of samples from traditional wells are shown in Table 1. They showed an important degree of contamination both at the source and at the point of use. Water drawn from pump-wells (Table 2) was found to be free of contamination by thermo-tolerant coliforms in three cases (21%). Under the extended threshold for drinking water of 10 CFU/100ml, 57% of the samples were fit for human consumption. Yet, this remains a low figure. The contamination of water also increased with storage and handling in general, and discrepancies between different cases were great enough to make the risks to individuals unpredictable.

Samples of rain water, which were collected as drinking water in two metal pans, were also analyzed. This water was not transferred or otherwise handled before our visit. Despite this, analysis showed innumerable CFUs in both instances. This is a strikingly example of the risk to water quality during handling and storage.

Representative examples of water storage and handling are listed in Box 1 (page 66). Water handling usually involved a first container that was either dipped into the well or filled from a pump. The water was then carried home, and poured into a different container that served as a reserve. Water was drawn from the household re-

Table 1 Traditional wells

CFU/100ml	At the well: N (%)	At the point of use: N (%)
0-10	2 (22)	1 (11)
11-100	3 (33)	1 (11)
>100	4 (44)	7 (77)
<b>Total</b>	9 (100)	9 (100)

Table 2 Pump wells

CFU/100ml	At the well: N (%)	At the point of use: N (%)
0-10	14 (100)	8 (57)
11-100	—	3 (21)
>100	—	3 (21)
<b>Total</b>	14 (100)	14 (100)

serve with metal or plastic cups, which were dipped into the water and then used for drinking.

### Discussion

These results demonstrate situations where the advantage of having a clean water source is lost during storage and handling. In certain cases, contamination was just as important at the point of use as that of water coming from a contaminated source. This is especially concerning in areas where the incidence of infectious diarrhoea is high, and where storage of water is usual. Based on these observations, the most regular risks of contamination were the following:

- use of an uncleaned container, either for transport or as a household reserve
- use of a household reserve already containing contaminated water
- use of an uncovered household reserve
- use of an uncleaned cup when drawing water from the reserve for use
- dipping one's hand into the water when drawing it for use.

This kind of situation is frequent in tropical climates in resource-poor areas. It is the result of poverty and difficult living conditions in a climate that is very favourable to bacterial growth. It could be remedied by placing a clean water faucet and adequate sanitation for the disposal of excreta in every home, however, this is not likely in the near future. Water quality could potentially be improved by simple measures such as systematically washing all containers, covering them, and avoiding hand contact with the water. In addition, several techniques for water treatment at point of use have been assessed for efficacy. Some of these methods are reviewed below, along with their use. Combining several methods may also increase their impact<sup>8</sup>.

### DISINFECTION AT THE POINT OF USE

#### Boiling

This technique is recommended by the Koran, and thus has cultural grounding in certain areas. Approximately 1kg of wood is required to boil 1L of water. It is necessary to maintain the water at boiling temperature for five minutes in order to kill or inactivate the pathogens it could contain. This time must be increased by one minute for each 1000m over 1000m above sea level. Loss through evaporation is always present and increases with boiling time. For this reason, the necessary time needed is almost never reached. Yet, recontamination is possible during storage. Extensive use of wood can have a negative impact on ecological and agricultural conditions in certain areas. Risks also include scalding, especially for small children.

#### Chlorination

Chlorination protects water during storage. A reliable source of chlorine solution is necessary, and can be produced locally. Sodium hypochlorite at a concentration of 0.5% is the cheapest and most easily stored. It remains usable for 30 to 60 days and can be produced by various salt electrolysis systems, some of which use solar energy. The necessary quantity for water disinfection varies with the bacterial load and the turbidity of water. Analyses conducted in South and Central America showed that 0.5-1.5mg/L usually achieved disinfection<sup>9</sup>. Length of contact must be at least 30 minutes for chlorination to work. Problems posed by this technique include the necessity of either a large initial investment or of a reliable income to procure the solution, the risk of dosing error, a residual taste that is sometimes difficult to accept, and the risk to children if chlorine solution is stored within their reach.

#### Solar disinfection (SODIS)

This method's principle has been known since 1877, and has reemerged at the end of last century as a promising technique for water disinfection in the tropics<sup>10-13</sup>. It is based on the sterilization effect of UV radiation and heat. In a field study in Kenya using water massively contaminated by *Escherichia coli* (20x10<sup>5</sup> CFU/ml), it was shown to lead to a complete disappearance of viable germs in seven hours<sup>13</sup>. If the water reaches 45°C, a strong synergistic effect between heat and UV radiation is observed<sup>14,15</sup>. The use of solar sterilization has been shown to decrease the morbidity linked to infectious diarrhoea in children<sup>16</sup> and seems effective in inactivating *Vibrio cholerae*<sup>17,18</sup>.

Implementation consists of exposing water to the sun in plastic containers. In order to ensure sufficient penetration of UV radiation, these containers cannot be too wide. To increase the synergistic effect of heat, the side opposite the sun is painted black. The bottles can also be placed horizontally on a dark surface. Recycled 1 1/2L PET bottles (not glass) are appropriate. Time of exposure must be increased if there is no direct sunlight. Maximal effect also requires that the water be clear enough to read or see a small object through the bottle. However,

### Box 1 Water storage and handling

**Example 1 :** The user draws the water from a stone well using a plastic bucket. This well is covered with a metal sheet when not in use. In his home, the user pours the water into a black plastic jerrycan. This container is closed and used as a household reserve.

**Example 2 :** The user draws water from a pump-well into a closed plastic jerrycan. The well is on a small hill and the walk home will be about 15 minutes. Once home, he pours the water into an identical container, which is used as a household reserve.

**Example 3 :** The user draws water from a pump-well using an uncovered plastic bucket. Once home, he covers it and uses it as a household reserve. Water from earlier trips is stored in aluminium pans. Some of them are covered.

**Example 4 :** The spring is enclosed in concrete and covered with branches. Water pours through a plastic pipe to a small pond and the user lets it pour into a plastic bucket, which he then covers and uses at home as a household reserve.

**Example 5 :** Rainwater is collected under the open sky in a metal pan. It is stocked in the same container.

this technique can also function through heat alone if the temperature reaches 55°C<sup>13</sup>. Shaking the bottles periodically to increase the oxygen content of the water could increase its efficacy<sup>19</sup>. Like chlorination, it has the added advantage of allowing the sterilization of water to take place in containers that can be used for storage with no further manipulation.

#### *Hand washing*

Hand washing with soap and water after defecation and before handling food has been shown to reduce the incidence of infectious diarrhoea<sup>20</sup>. Enteric bacteria survive on hands for at least three hours and can be transmitted in many ways during this time<sup>21</sup>. This method has the advantage of targeting food-borne as well as water-borne diarrhoea. It does, however, require that sufficient quantities of water be available for hand washing.

#### *Modification of storage containers*

Human hands and houseflies are known vectors of bacterial contamination<sup>22</sup>. Thus, open containers are inappropriate to conserve the quality of water. Using safer containers is one way to protect water against contamination<sup>23</sup>. An ideal container must effectively protect water, and be easy to use. It must be of an appropriate size so it is not too difficult to carry when full. Recommendations for such a container by the US Center for Disease Control are summarized in Box 2. In addition, the material should be stable for outdoor use. Some plastics are not stable in ultraviolet light and can break after a few months if they are kept in the sun<sup>24</sup>.

The modification of storage containers can be combined with chlorination. The combined use of a closed container and longer contact times (>8 hours) can decrease the amount of chlorine necessary and, with it, the residual taste. Specially manufactured containers can also incorporate a system for dosing the chlorine solution. This combination has been shown to decrease the incidence of infectious diarrhoea by 44% and 50% in Bolivia and Nicaragua, respectively<sup>9,25</sup>.

#### *Shortening the "path of water"*

In one study, the factor with the strongest association to a decreased incidence of diarrhea was a short distance to the closest well<sup>26</sup>. Indeed, a tap in every home was shown to be the only effective way of substantially decreasing the incidence of schistosomiasis, but in resource-poor areas this is not a feasible solution in the short term<sup>27</sup>. However, there could be situations where quality at the source could be usefully traded off for proximity and quantity of the available water. Adaptation and protection of existing water sources is less costly than digging new wells and may be preferable in regions where water is abundant. This would shorten storage time, and increase the quantity of water available to households. Such conditions would make protecting water easier. It would also make it more likely that sufficient clean water be available for basic hygiene and hand washing. Another related aspect is the fact that pump-wells, although they are often presumed to be clean, can be contaminated<sup>6,28</sup>. This can lead to a false sense of security.

#### *Teaching*

Numerous calls for more teaching of health-oriented behaviours regarding drinking water have been made. Targeted teaching was shown to reduce the incidence of diarrhoea in several studies<sup>26,29</sup>. Several barriers, however, can hamper health-oriented teaching. First, health care professionals are rarely trained as teachers and can sometimes be remarkably inapt. Therefore, collaboration with professional teachers with field experience in the targeted area can be an important asset. If teachers are from outside the target community, cultural barriers can also raise problems. This difficulty can be minimized with the help of a "cultural mediator". This person should be sufficiently familiar with groups to be able to effectively assist good communication, sometimes regarding very personal matters.

Additionally, since it is rarely possible to teach an entire population, a target group must be selected. Because of their ready availability in schools, school-age children have been among the targeted populations. Their role as drawers of water and the impact they can have on its handling also make them a logical choice. They have also been shown to become effective teachers when asked to transmit what they have learned to their families<sup>30</sup>.

## Box 2 CDC recommendations for safe containers

- a stable base and handles
- a volume of 10 to 30 liters
- an opening with a diameter of 6 to 7.5 cm, wide enough to allow easy filling, but too narrow to allow immersion of utensils or hands
- a material that resists impact and oxydation, is easy to clean and transparent
- a tap, in a similar material, that closes easily and dispenses approximately one liter in 15 seconds
- a small valve or covered opening to allow air to enter as water is drawn from the tap
- instructions for use on a label affixed permanently in a waterproof form on the container
- a certification, also affixed on the container, either from the health ministry or from another appropriate authority.

Source 9

Women are another group traditionally chosen for health-oriented teaching due to their household responsibilities of cooking and collecting water.

### Conclusion

Our results confirm an important risk of bacterial contamination of drinking water between the source and the point of use in the district of Mfou. As long as sustainable development has not placed a clean water faucet in every home, increasing the safety of water storage and handling is vital. Efforts to purify water at the source, though valuable, are likely to remain of little use if mothers of children with diarrhoea are not given the tools to protect their household reserve from contamination during storage and handling. Techniques for safe water handling and disinfection at the point of use must be available and taught to at risk populations. Whenever possible, this should be tailored to individual situations on the basis of local bacteriological analysis of water and observation of water-handling behaviours. Bacteriological analysis and observation should also be used to assess the impact of interventions. Teaching is an important component of these efforts, however, its difficulties and limitations must be understood. Whenever possible, the help of experienced teachers should be enlisted in public health interventions. Collaboration with members of the targeted population is key to overcoming otherwise potentially overwhelming difficulties.

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# SPEAKERS' CORNER

## POINT

### THE WORLD TRADE ORGANIZATION AND THE HUMAN RIGHT TO ADEQUATE FOOD: PRINCIPLES VS. PRACTICE

George Kent, University of Hawai'i

Some critics say that the trade framework under the World Trade Organization and the human rights framework are inherently incompatible<sup>1</sup>. The concern is especially serious with regard to the human right to adequate food<sup>2</sup>. There can be no doubt that food trade sometimes harms food security. However, on closer examination we see that in principle there are no important incompatibilities between the human right to adequate food and present rules regarding trade within the WTO framework.

#### *The human right to adequate food*

The human right to adequate food is not only a moral right, it is a clear legal right, firmly established in international human rights law, and ratified by most countries<sup>3</sup>.

The articulation of the right to food in modern international human rights law arises in the context of the broader human right to an adequate standard of living. The *Universal Declaration of Human Rights* of 1948 asserts in article 25 (1) that "everyone has the right to a standard of living adequate for the health and well-being of himself and his family, including food . . ."

Article 6 of the *International Covenant on Civil and Political Rights* affirms, "Every human being has the inherent right to life". This clearly implies the right to adequate food and other necessities for sustaining life.

The human right to adequate food was affirmed explicitly in two major binding international agreements. Article 11 of the *International Covenant on Economic, Social and Cultural Rights*, which came into force in 1976 says:

1. The States Parties to the present Covenant recognize the right of everyone to an adequate standard of living for himself and his family, including adequate food, clothing and housing, and to the continuous improvement of living conditions. The States Parties will take appropriate steps to ensure the realization of this right, recognizing to this effect the essential importance of international co-operation based on free consent.
2. The States Parties to the present Covenant, recognizing the fundamental right of everyone to be free from hunger, shall take, individually and through international co-operation, the measures, including specific programmes, which are needed:
  - a. to improve methods of production, conservation and distribution of food by making full use of technical and scientific knowledge, by disseminating knowledge of the principles of nutrition and by developing or reforming agrarian systems in such a way as to achieve the most efficient development and utilization of natural resources;
  - b. taking into account the problems of both food-importing and food-exporting nations, to ensure an equitable distribution of world food supplies in relation to need.

The last paragraph means that countries that have ratified this covenant are obligated to consider the impacts of international trade on food security.

Paragraph 2, on taking measures through international cooperation, should be read with the article 28 of the *Universal Declaration of Human Rights*, which says, "Everyone is entitled to a social and international order in which the rights and freedoms set forth in this Declaration can be fully realized. Article 2 of the *International Covenant on Economic, Social and Cultural Rights* says, in its first paragraph "Each State Party to the present Covenant undertakes to take steps, individually and through international assistance and co-operation, especially economic and technical, to the maximum of its available resources, with a view to achieving progressively the full realization of the rights recognized in the present Covenant by all appropriate means, including particularly the adoption of legislative measures."

In the Convention on the Rights of the Child (which came into force in 1990), two articles address the issue of nutrition. Article 24 says that "States Parties recognize the right of the child to the enjoyment of the highest attainable standard of health . . . (paragraph 1)" and shall take appropriate measures "to combat disease and malnutrition . . . through the provision of adequate nutritious foods, clean drinking water, and health care (paragraph 2c)."



Article 27 says in paragraph 3 that States Parties "shall in case of need provide material assistance and support programmes, particularly with regard to nutrition, clothing, and housing."

In 1999 the UN's Committee on Economic, Social and Cultural Rights released its *General Comment 12* on the human right to adequate food<sup>4</sup>. This statement by the committee constitutes a definitive contribution to international jurisprudence. The first sentence of paragraph 6 presents the core definition:

The right to adequate food is realized when every man, woman and child, alone or in community with others, has physical and economic access at all times to adequate food or means for its procurement.

### **World Trade Organization**

The World Trade Organization takes the leading role at the global level for overseeing the management of international trade. Its primary mandate is trade liberalization, based on the steady reduction of tariffs and other barriers to free trade. The organization has no substantive powers of its own, but rather, it serves to facilitate the implementation of agreements among its member states. The WTO has a comprehensive website, at [www.wto.org](http://www.wto.org). A good way to get an overview of its operations is through its publication, *Understanding the WTO*<sup>5</sup>.

While the WTO has not given much attention to the issue of food security, it is evident that it places its faith in trade liberalization as the means for achieving food security<sup>6,7</sup>. As demonstrated by the breakdown of the WTO ministerial meeting at Cancún, Mexico in September 2003, it is clear that many critics do not agree that trade is in fact a good means for achieving food security<sup>8-11</sup>.

The WTO generally advocates increasing trade, but there is space for maneuver within the WTO framework. It should be noted that:

- 1 The Marrakesh Agreement, establishing the WTO as the final act of the Uruguay Round, made it clear that trade was not to be pursued for its own sake, but as a means for development. In the preamble, the parties recognized that "their relations in the field of trade and economic endeavour should be conducted with a view to raising standards of living, ensuring full employment and a large and steadily growing volume of real income and effective demand, and expanding the production of and trade in goods and services, while allowing for the optimal use of the world's resources in accordance with the objective of sustainable development, seeking both to protect and preserve the environment and to enhance the means for doing so in a manner consistent with their respective needs and concerns at different levels of economic development." The parties recognized the need for "positive efforts designed to ensure that developing countries, and especially the least developed among them, secure a share in the growth in international trade commensurate with the needs of their economic development..."<sup>12</sup>
- 2 The *General Agreement on Tariffs and Trade* (GATT) includes article XX, on "General Exceptions", which says that:  
"Subject to the requirement that such measures are not applied in a manner which would constitute a means of arbitrary or unjustifiable discrimination between countries where the same conditions prevail, or a disguised restriction on international trade, nothing in this Agreement shall be construed to prevent the adoption or enforcement by any contracting party of measures:..."  
(b) necessary to protect human, animal or plant life or health;  
It is evident that food security is necessary to protect human life.
- 3 At WTO's ministerial meeting at Doha in 2001, it was agreed that "special and differential treatment for developing countries shall be an integral part of all elements of the negotiations . . . to enable developing countries to effectively take account of their development needs, including food security and rural development."<sup>13</sup> Work on a *Framework Agreement on Special and Differential Treatment* is underway in WTO.
- 4 Decision-making in WTO is supposed to be by consensus.
- 5 The fundamental principle of national sovereignty remains intact. The WTO is not supposed to be a world government. Membership in WTO is optional. It is possible to withdraw if participation is viewed as harmful.
- 6 The WTO framework is only one of several relevant normative frameworks. There is no reason to assume that its perspectives must prevail over all others.

A study on *Human Rights and Trade* prepared by the Office of the High Commissioner for Human Rights for the WTO Ministerial Conference in Cancún, Mexico in September 2003 explained that, in terms of law:

All WTO Members have undertaken obligations under international human rights law. This means that WTO Members should promote and protect human rights in the processes of negotiating and implementing trade law and policy. For example, of 146 members of the WTO, all have ratified at least one human rights instrument. 113 WTO Members have ratified the *International Covenant on Economic, Social*





and Cultural Rights (ICESCR) and all but one have ratified the *Convention on the Rights of the Child*. Further, those areas of human rights law recognized as customary international law take on universal application, which means that trade rules should be interpreted as consistent with those norms and standards whatever the treaty commitments of States in trade matters<sup>14</sup>.

At the level of principle, WTO rules and human rights standards are wholly compatible. However, principle and political realities are different matters. The excessive and trade-distorting use of agricultural subsidies by the United States, Japan, and the European Union do not result from WTO principles. Pressures of various kinds have been put on developing countries to comply with the wishes of developed countries in the WTO, so the decision making process has not been open and democratic in practice<sup>15</sup>. The point here is that the *principles* on which the WTO was founded do allow national governments to assert control over their food security situations. It is possible to imagine very different kinds of agreements relating to food and agriculture within the WTO framework. The challenge is to find a path that would gain consensus among many countries with widely varying interests.

### **Food sovereignty**

The views of trade advocates and those who are concerned with the human right to adequate food may be reconciled through clear appreciation that the core principle in the relationship between food trade and the human right to adequate food is *food sovereignty*.

National sovereignty has been the fundamental principle of the nation-state system since the Treaty of Westphalia of 1648. Sovereignty means that all nation-states are equal in the eyes of the law; there is no legal authority above nation-states, except with their consent; and outsiders may not interfere in their internal affairs without their consent. In their international relations, states are represented by their national governments. Sovereignty is based on the premise that normally national governments are the best judges of what is good for their people.

An essential component of national sovereignty is food sovereignty. All national governments have permanent responsibility for the nation's food security. Since national governments have a fundamental legal and moral obligation to assure their people's food security, they must have the right to make their own decisions in relation to food security. That responsibility cannot be relinquished through, or overridden by, international agreements of any kind.

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### COUNTERPOINT

#### WTO: NO DEAL IS BETTER THAN A BAD DEAL

**Claudio Schuftan, Ho Chi Minh City**

I do not disagree with the point made by George Kent, ie that food trade very often harms food security. As opposed to him, I am more interested in the political implications of what the world was faced with in Cancun, ie in furthering the right to adequate food rather than the principles and international legal aspects involved in the debate. Point and Counterpoint here complement each other.

Dr Kent's call for a focus on the concept of 'food sovereignty' is valid. But more importantly today is to bridge the big political divide in WTO about achieving across-the-board food security in developing countries.

WTO today has 146 members; more than 100 of them developing countries. Most of the latter are not in a position to defend their interests effectively. Despite official equality, WTO principles ultimately reflect the international power imbalance in its procedures. Its rich members often have an aversion to multilateral rules which must be respected. Instead, rich members pursue their trade policy objectives outside the WTO—in bilateral trade negotiations where they can exert their power more freely. Unacceptably, the WTO ends up preventing developing countries from employing the very economic strategies that served the industrialized countries themselves well in the past. For example, poor countries cannot give preferential treatment to their domestic companies.

Related to our interests at the SCN, national autonomy over food is simply not preserved under the WTO's GATTs rules. Food imports and exports do not ensure an equitable distribution of world food supplies in relation to need. Therefore, on the issue of agricultural agreements, positions still stand irreconcilably apart. WTO's faith in achieving food security through trade is simply not good enough: trade does not achieve food security automatically.

WTO's mandate is trade liberalization, exerted mostly in the interest of industrialized countries. The Marrakesh Agreement stating that trade was to be pursued 'as a means of development' has simply been betrayed. The same is true for GATT's Article XX on avoiding unjustifiable discrimination (read: highly unfair agricultural subsidies in the North should have been the core of the Cancun negotiations), and for the Doha Declaration that called for trade to benefit mainly poor countries' development needs—including their food security. The Cancun outcome is living proof of how these empty pronouncements are ignored.

The WTO should, but does not, promote and protect human rights—the right to adequate food included. Those who control the organization do not interpret its rules in agreement with human rights norms—this is a result of the less than democratic decision-making process it uses.

Cancun was supposed to take stock of Doha agreements, but what was offered were only trace elements of it. There was only a myth of a development round left when preparatory negotiations finished in Mexico. The interest of the developing countries for a development-friendly trade was not put at the top of the agenda; it was ignored, pushed aside, and with it all hopes for enabling actions towards a lasting food security in the LDCs. In all honesty, the Cancun meeting was hitched to the train of anti-terrorist fervor. Indebtedness, commodity prices, technology transfer and other matters relevant to the poor received scant attention and were generally couched in vague terms. This round looked more like a menace to development than a cradle of development opportunities.

What became abundantly clear is that, without fair global trade, especially in food, there can be no development for all; and to be fair, global trade has to be embedded in a comprehensive poverty reduction strategy (note that trade policy has not played a major part in the formulation of PRSPs!).

Developing countries need the opening of markets and the dismantling of distorting barriers. It is scandalous that industrialized countries still impose lower duties on imports from each other than on imports from developing countries. This is an unacceptable injustice denying those countries what they desperately need—a fair chance. Agricultural subsidies in the North need to also be done away with; they are a permanent aggression towards the countries in the South. The North cannot preach free trade and then withhold it from poor countries when it does not suit them. At least a moratorium should be called for on such subsidies while negotiations progress. Where is the 'global responsibility' so often waved as a banner? The industrialized countries simply have other interests.

Trade liberalization is not an end in itself. It should make a contribution to poverty alleviation, by increasing the level of participation of LDCs in international trade. They have the right not to agree to liberalization proposals that are not in their interest. LDCs should not yield to any pressure that may be (and is) applied to them; they should find strong negotiation positions that benefit their future development; then, they should be empowered to actually defend such positions.



The stumbling block in Cancun was the political unwillingness of countries from the North to abide by what Doha had proposed. Industrialized countries were simply not willing to commit themselves to liberalization 'with a poor man's face'. As a result, market access will remain asymmetrical for the time-being, especially in agriculture. At the same time that temporary migration of labor (a potential source of foreign remittances) will remain prohibited.

This time, developing countries decided to negotiate from a position of greater power. They decided not to participate as passive onlookers any longer and were united. The weakness of developing countries at the negotiating table may now be over.

After Cancun, it is hoped the developing countries are, at least, being taken seriously. However, doing away with the WTO rules would not make things better for developing countries. International trade would then be governed even more by bilateral agreements exacerbating the imbalance of power. A drastic reform of the WTO is the best option. The WTO needs to advance beyond the phase of mandate interpretation and progress needs to be made visible and, more than anything, tangible for the poor.

#### **Reference:**

Significant portions taken from D+C (Development and Cooperation), Focus: "Cancun - The so-called development round", Vol 30, No. 8/9, August/September 2003, Inwent, Bonn.

**Contact:** *Claudio Schuftan, aviva@netnam.vn*

## **SHARPENING THE POINT**

**George Kent**

I am always pleased when my good friend, Claudio, agrees with me, but I look for little points of difference because we learn so much in exploring them.

Claudio says that the food sovereignty idea is not helpful now, but at the same time he says that developing countries are not in a position to defend their interests effectively. Why? Brazil, China, and India, in walking out at Cancun, demonstrated that by asserting themselves they can indeed defend their interests.

Why can't poor countries, as distinguished from the rich countries, give preferential treatment to their domestic companies? Is there something in WTO principles that discriminates in this way?

Claudio says that national autonomy over food is not preserved under WTO rules. And he says that food trade does not ensure an equitable distribution of world food supplies in relation to need. Yes, but is the problem in the present rules, or in the fact that many countries have not asserted their food sovereignty?

Claudio seems to be more concerned with what the rules fail to do than with any obstacles they now present. I agree that the WTO does not actively promote realization of the human right to adequate food, but there is nothing in its rules to prevent it from happening. Political work needs to be done to make the world's food trade comply with the human right to adequate food. That work can coexist with current WTO rules and principles.

There is a need now for a radical rethink of the principles that ought to govern world food trade, and the human right to adequate food. A new global conversation must recognize that while trade liberalization may sometimes contribute to food security, often it does not. If the new principles, based on human rights, are clearly articulated, trade liberalization and the WTO can be given their proper role. Those who support food sovereignty and the human right to adequate food need to stand up, both inside and outside the WTO.

**Contact:** *George Kent, kent@hawaii.edu*

**EDITOR'S NOTE:** *GEORGE KENT'S BOOK, THE HUMAN RIGHT TO ADEQUATE FOOD, WILL BE PUBLISHED IN 2004 BY GEORGETOWN UNIVERSITY PRESS.*

# STOP PRESS!

## **GATES FOUNDATION ANNOUNCES \$25M GRANT TO SUPPORT INNOVATIVE NUTRITION PROGRAM FOR POOR COUNTRIES**

The Bill & Melinda Gates Foundation announced a US\$25m grant to the International Food Policy Research Institute (IFPRI) to combat malnutrition by improving the nutritional quality of staple foods in developing countries. The grant will support HarvestPlus, a global research initiative to breed and disseminate crops for better nutrition, which is being spearheaded by the International Center for Tropical Agricultural Research and IFPRI. Using an innovative approach called biofortification, agricultural and nutrition scientists will work together to breed crops that provide higher levels of micronutrients such as iron, zinc, and vitamin A. The first crops to be developed by the HarvestPlus initiative include those most widely consumed in the developing world, such as rice, wheat, maize, beans, cassava, and sweet potato. Biofortification represents an important new avenue for agricultural research. Traditionally, crop breeding has often centred on increasing yields or enhancing environmental sustainability. With the funding, HarvestPlus will be able to substantially accelerate the development of crop varieties under its alliance of international and national agricultural research institutes, university nutrition and food crop programmes, the private sector, and non-governmental organizations in the developing and developed world. The grant from the Gates Foundation provides one-half of the total US\$50m that will be needed for HarvestPlus over an initial four-year period. It is hoped that grants from the World Bank, USAID and Denmark will account for approximately 40% of the required funding, and the remaining 10% is currently being sought from a number of potential donors. Bill & Melinda Gates Foundation, [www.gatesfoundation.org](http://www.gatesfoundation.org), HarvestPlus, [www.harvestplus.org](http://www.harvestplus.org). Press release, 14 October 2003.

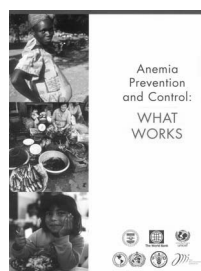
## **WORLD HEALTH ORGANIZATION AND UNAIDS UNVEIL PLAN TO GET 3M AIDS PATIENTS ON TREATMENT BY 2005**

WHO and UNAIDS released the details of a plan to reach the 3 by 5 target of providing antiretroviral treatment to 3m people living with AIDS in developing countries and those in transition by the end of 2005. The 3 by 5 initiative complements the commitments of donor countries, the pathfinding work of NGOs and faith-based groups, the efforts of pharmaceutical companies to reduce the prices of AIDS treatment, the contribution of international foundations, the initiative and hard work of many national and international agencies, and the courageous contributions of nations increasing their people's access to AIDS treatment. The strategy is a key element in a combined programme of accelerating HIV/AIDS prevention and treatment. To reach the 3 by 5 target, WHO and UNAIDS will focus on five critical areas: 1) simplified, standardized tools to deliver antiretroviral therapy; 2) a new service to ensure an effective, reliable supply of medicines and diagnostics; 3) rapid identification, dissemination and application of new knowledge and successful strategies; 4) urgent, sustained support for countries; and 5) global leadership, strong partnership and advocacy. More information is available at [www.who.int](http://www.who.int). Press release, 1 December 2003.

## **MANY COUNTRIES NOT ON TARGET TO REACH HEALTH-RELATED MILLENNIUM DEVELOPMENT GOALS (MDGs)**

The World Health Organization and the World Bank warned that many developing countries will not be able to reach health-related MDGs unless clear actions are taken, starting now and with a concerted effort over the next 12 years. More worryingly still, the organizations noted that the health Goals are particularly difficult to meet and that progress towards them is slower than towards some other MDGs. The World Bank estimates that progress against child mortality has so far been so slow that no Sub-Saharan country in Africa is on target to reach that MDG. Lack of progress towards the health MDGs is likely to affect progress towards other MDGs, such as those concerned with education. Furthermore, access to clean water and education for mothers are both key determinants of infant and child mortality rates. Coming together in a high-level meeting in Geneva, 8-9 January, representatives from concerned countries, development agencies and UN organizations assessed progress so far towards meeting the health MDGs, and mapped out what needed to be done if the world stood a realistic chance of reaching those goals. Press release, 8 January 2004 [www.who.int](http://www.who.int)

# PUBLICATIONS



**ANEMIA PREVENTION AND CONTROL: WHAT WORKS**  
Population, Health and Nutrition  
Information Project, 2003  
Part I 75 pp, Part II 93 pp

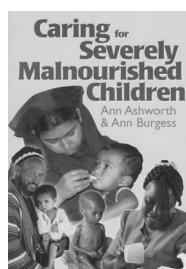
This interagency (USAID, World Bank, UNICEF, PAHO, WHO, FAO, and MI) anaemia document comes in two parts. Part I is a guide for programme and project managers in addressing anaemia prevention and control. Part II is a compilation of anaemia-related data, survey instruments, programme materials, and references that managers can use to design and monitor programmes. The document has been a collaborative effort of donor agencies coordinated by the Interagency Anemia Steering Group. A CD-ROM is also available. [skahn@usaid.gov](mailto:skahn@usaid.gov)

**ANTHROPOMETRIC INDICATORS MEASUREMENT GUIDE**  
Bruce Cogill, FANTA, 2003, 92 pp

This guide is part of FANTA's series of indicator guides used to support the monitoring and evaluation systems for use in Title II programmes. The focus of this guide is on the consistent collection and reporting of nutritional anthropometry indicators and annual monitoring indicators. This is a very comprehensive review of indicators, data collection methods and data analysis. Sample forms are also provided for standardization, measurement techniques observation and tracking measurer's progress. [www.fantaproject.org](http://www.fantaproject.org)

**BUILDING ON QUICKSAND: THE GLOBAL COMPACT, DEMOCRATIC GOVERNANCE AND NESTLÉ**  
Judith Ritcher, IBFAN/GIFA, CETIM and Berne Declaration, 2003, 56 pp

More than four years have passed since the UN Secretary General announced the Global Compact, a high level interaction between the UN and the business community. This book does not aim to summarize the concerns about the benefits and risks of this interaction, but instead focuses on two main lines of questioning: 1) what is the value of the Global Compact in terms of changing corporate practices? and 2) what is the relationship between the Global Compact and global democratic governance? Both these questions are addressed at a theoretical level as well as by a case study of the transnational, Nestlé. [www.cetim.ch](http://www.cetim.ch)



**CARING FOR SEVERELY MALNOURISHED CHILDREN**  
Ann Ashworth and Ann Burgess, Macmillan Publishers, 2003, 82 pp

This manual is part of the Teaching-Aids at Low Cost (TALC). This is an illustrated manual for nurses and other paediatric health workers, and their trainers and supervisors. Based on guidelines developed by WHO and on training modules for nurses in Africa, the manual was prepared by the London School of Hygiene and Tropical Medicine and the University of Western Cape, South Africa. The book is written in a simple and easy-to-read style. It takes into account the lack of resources in many hospitals and health centres in the developing world. Further it places emphasis on support for mothers and carers of hospitalized

children. Most importantly, the manual also recognizes HIV/AIDS as a common cause of malnutrition. A CD-ROM containing the book, the training modules, a set of TALC slides and links to relevant websites is also available from TALC. The manual is available from Macmillan country offices [www.macmillan-africa.com/Contacts](http://www.macmillan-africa.com/Contacts) or [a.colemorgan@macmillan.com](mailto:a.colemorgan@macmillan.com)



**DON'T WORRY: IT'S SAFE TO EAT**  
Andrew Rowell, Earthscan, 2003, 268 pp

This book exposes the hidden links between scientists, corporations, and the government that have shaped policy on three potent issues: genetic engineering, BSE and Foot and Mouth disease. The book exposes the myth of the GM revolution and asks searching questions about the safety of GM food. The author also highlights how critical scientists have been continually silenced and effectively marginalized, not only on GM food, but on BSE and Foot and Mouth disease as well. [www.earthscan.co.uk](http://www.earthscan.co.uk)

**FOOD AND NUTRITION IMPLICATIONS OF ANTIRETROVIRAL THERAPY (ARV) IN RESOURCE LIMITED SETTINGS, TECHNICAL NOTE NO. 7**  
FANTA, 2003, 19 pp

This technical note examines the relationship between nutrition and ARV efficacy, especially in regions with high incidence of food insecurity. The study describes the effects of specific food-drug combinations in HIV and AIDS treatment and presents a guide for ARV programme design and management. Certain foods affect ARV absorption, metabolism, distribution,

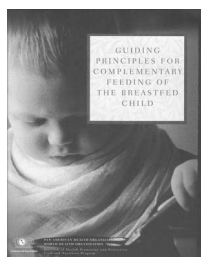
or excretion; while certain ARV impede food absorption. More importantly drug side effects such as nausea, taste changes, and loss of appetite may reduce food consumption, and diarrhoea and vomiting may increase nutrient losses. Technical Notes are available for download from the FANTA website, [www.fantaproject.org/focus/hiv\\_aids.shtml](http://www.fantaproject.org/focus/hiv_aids.shtml). Hardcopies can also be requested from [fanta@aed.org](mailto:fanta@aed.org).

#### FOOD POLICY OLD AND NEW

Simon Maxwell and Rachel Slater, editors, Development Policy Review 21(5-6), 2003, 205 pp

The character of the food system and the nature of food policy are both changing, as urbanization, technical change and the industrialization of the food system transform the way food is produced, marketed and consumed in developing countries. This special issue of the journal takes a critical look at what is commonly thought of as 'old food policy' and puts forward the idea of a 'new food policy', which incorporates current issues infiltrating the world food system. Whereas, the 'old food policy' focused on national food security planning issues, the 'new food policy' must address concern for the commercialization and industrialization of food systems, a stronger focus on the institutional actors in food trade, and environmental consequences of new technologies and food safety.

[r.slater@odi.org.uk](mailto:r.slater@odi.org.uk)



#### GUIDING PRINCIPLES FOR COMPLEMENTARY FEEDING OF THE BREASTFED CHILD PAHO/WHO, 2003, 37 pp

The guidelines put forth in this publication were developed from discussions at several technical consultations and documents on complementary feeding. Each of the ten guidelines is followed by its scientific rationale. Guidelines cover duration of exclusive breastfeeding and introduction of

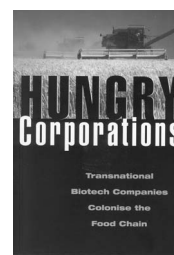
complementary foods, maintenance of breastfeeding, responsive feeding, food safety, amount and frequency of complementary foods, food consistency and nutrient content, use of vitamin-mineral supplements, and feeding during and after illness. The target group for these guidelines is breastfed children during the first two years of life. This document does not cover specific recommendations for non-breastfed children, although many of the guidelines are also appropriate for such children. Available in English, Spanish and French from [www.paho.org](http://www.paho.org)

#### HELEN KELLER INTERNATIONAL-AFRICA: NUTRITION DEVELOPMENT SERIES

Helen Keller International-Africa, 2003

The HKI-Africa Nutrition in Development Series aims to share HKI's preliminary material and programme results in Africa. The first issue of the series analyzes the current prevalence of children at risk of vitamin A deficiency in Sub-Saharan Africa and the potential child survival benefits of effective VAD-control policies and programmes in this region. The second issue of the series, "Acceptability of multiple micronutrient supplements by pregnant and lactating women in Mali" reports on pregnant women's acceptability of and adherence to a daily multiple micronutrient supplementation scheme in Mali. The third issue of the series, "Delivery of nutrition services in health systems in Sub-Saharan Africa: Opportunities in Burkina Faso, Mozambique and Niger" reports on health providers' knowledge and practice with regard to essential nutrition services for women and children in those three countries.

[z.sifri@hki.org](mailto:z.sifri@hki.org)



#### HUNGRY CORPORATIONS: TRANSNATIONAL BIOTECH COMPANIES COLONISE THE FOOD CHAIN

Helena Paul and Ricarda Steinbrecher  
Zed Books, 2003, 242 pp

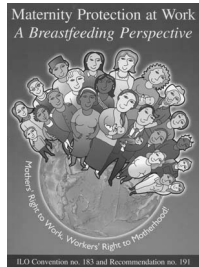
This book demonstrates that a handful of companies have gained an alarming level of control over the food chain through the industrialization of agriculture, the forces of globalization, and the vertical and horizontal integration of business. After looking at how biotechnology was introduced in the name of solving the hunger problem, the book surveys the green revolution and then explores the growth of the corporation, its acquisition of rights and its gradual shedding of liability for and limitations on its activities. The book ends with a look at the activities of transnational corporations directed at developing countries, and how the small farmers and regions that escaped the impacts of the green revolution are a particular target.

#### IMPROVING NUTRITION PROGRAMS: AN ASSESSMENT TOOL FOR ACTION FAO, 2003, 70 pp

This first edition of the Assessment Tool (AT) is designed to contribute to strengthening community-based food and nutrition programmes. It represents a milestone in the continuous involvement and experience of FAO in assisting Member Countries in developing community-based food and nutrition programmes. The ultimate objective of the AT is to help the users launch and develop a process to strengthen their country's ability to address the causes of malnutrition. The methodology for the AT was developed based on the lessons learned from nine existing programmes which were reviewed and analyzed as in-depth case studies. This formed the basis of the companion volume to this AT. It is hoped that the use of the AT will be able to stimulate the devel-

opment of a mindset to continuously seek to improve the effectiveness of support for community-based activities that reduce hunger and malnutrition and alleviate poverty.

[www.fao.org](http://www.fao.org)



**MATERNITY PROTECTION AT WORK: A BREASTFEEDING PERSPECTIVE**  
ILO, 2003

This maternity protection coalition action kit presents a 'breastfeeding perspective' to the issue of maternity protection, including length of leave, timing of leave, financial and health benefits, all of which have direct incidence on the feeding practices of infants whose mothers work outside the home. This is quite a comprehensive kit filled with colourful pull-outs, brochures, stickers and international conventions on the protection of maternal leave and benefits. It is meant to be adapted to specific maternal protection campaigns for improved maternity benefits and workplace conditions so that women are able to continue breastfeeding and working in the best conditions possible.

[Secr@maba.po.my](mailto:Secr@maba.po.my)

**MODERN ASPECTS OF NUTRITION  
PRESENT KNOWLEDGE AND  
FUTURE PERSPECTIVES**

I Elmadfa, E Anklam, JS Konig,  
editors  
Karger, 2003, 434 pp

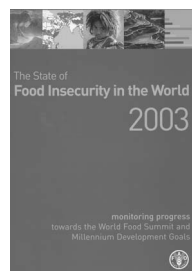
This book contains the published proceedings of the 17<sup>th</sup> International Congress of Nutrition, held in Vienna, Austria August 2001. The book covers nearly all aspects of modern nutrition, namely major and minor nutrients and their biological relevance, recommendations, guidelines and policy on nutrition, nutrition in health and disease, nutrition of specific population groups, advances and trends in nutrition research, advances in food production, food processing, food security and safety. One major topic of the congress was the focus on

'Africa: nutritional problems of regions-the future of a continent.'

[www.karger.com](http://www.karger.com)

**PROPAN: PROCESS FOR THE  
PROMOTION OF CHILD FEEDING**  
PAHO, 2003, pp

**ProPAN** is a manual aimed at Ministries of Health, NGOs, and international organizations interested in improving infant and young child feeding practices. It describes a step-by-step process to identify nutritional and dietary problems, determine why these problems occur, and design and evaluate an intervention plan based on the problems identified. It also contains software in an EPI-INFO format for the data analysis. ProPAN consists of four modules: Module I, quantitative and qualitative questionnaires and instruction guidelines; Module II, tests the acceptability and feasibility of the potential practices and of foods and preparations identified in Module I through household behaviour and recipe trials; Module III, guidelines for the design of the intervention plan based on options selected in Module II; and Module IV, the development of the monitoring and evaluation plan. Available in English and Spanish at [www.paho.org](http://www.paho.org)



**THE STATE OF FOOD INSECURITY  
IN THE WORLD 2003**  
FAO, 2003, 36 pp

FAO's latest estimates of hunger around the world offer striking evidence that progress towards the World Food Summit (WFS) goal is possible. They also show conclusively that without redoubled national and global commitment the goal of reducing the number of hungry people by half by the year 2015 will not be reached. The 5<sup>th</sup> edition of the SOFI details recent trends in developing countries and countries in transition. It also offers an analysis of factors that have contributed to progress and setbacks in efforts to reach the WFS

goal. The report also highlights encouraging signs that many countries have recognized the persistence of hunger not as grounds for despair but as an urgent call to action.

[www.fao.org](http://www.fao.org)



**STATE OF THE WORLD'S  
CHILDREN 2004**  
UNICEF, 2003, 148 pp

This year's Report presents girls' education as one of the most crucial issues facing the international development community. The Report is a call to action on behalf of the 121m children out of school around the world today, 65m of whom are girls. It details the toll that their exclusion from school takes on the girls themselves, and also on their families, communities and countries. Two of the Millennium Development Goals are considered critical to achieving all others: universal education and gender equality and empowering women. As a step towards universal education, gender parity in primary and secondary education is scheduled to be met by 2005, 10 years before the others. The Report calls for a human rights-based, multisectoral approach to development that will ensure girls an education, meet the commitments of the international community to education for all children, maximize benefits for families and nations alike and help achieve many other of the world's major development goals. Available in English, Spanish and French at [www.unicef.org](http://www.unicef.org)

## STATE OF WORLD POPULATION 2003: INVESTING IN ADOLESCENTS' HEALTH AND RIGHTS

United Nations Population Fund,  
2003

Nearly half of all people are under the age of 25. About 20% are adolescents between the ages of 10 and 19. Eighty-seven percent of these adolescents live in developing countries. This Report examines the risk these young people face today and stresses that investing in young people can yield generous returns and a window of opportunity. The Report concentrates on the risks of marginalization, the additional risks for young women, HIV/AIDS in young people, promoting healthier behaviour, adolescent reproductive health services and giving priority to adolescents. Adolescents must be empowered to make responsible and healthy choices and be provided with information and services. Governments need to do more in order to meet their international development goals and commitments to young people. Available in English, French, Spanish, Russian and Arabic at [www.unfpa.org](http://www.unfpa.org)

## UNHOLY TRINITY: THE IMF, WORLD BANK AND WTO

Richard Peet, Zed Books,  
2003, 250 pp

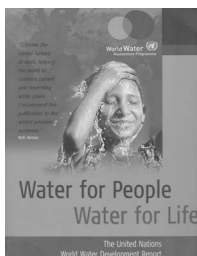
This book opens with a cogent account of the history and fundamental ideas of the economic ideology of neoliberalism. The book shows how this agenda captured the world's leading financial institutions, particularly from the 80s onwards. It describes each the members of the 'unholy trinity' and makes clear how neoliberalism and the interests behind it have hijacked the IMF, World Bank, and WTO in relation to their global financial, development and trade management roles. The book concludes with a review of the various ideas now being put forth that might guide a different form of globalization.  
[www.zedbooks.co.uk](http://www.zedbooks.co.uk)

## USING EPI-INFO 6.04: DATA PROC- ESSING AND ANALYSIS OF NUTRITION SURVEYS

Save the Children, 2003, 230 pp

This training manual has been produced to help analyse and use nutrition survey information with Epi-Info software. Developed by the Centre for Disease Control and Prevention, Epi-Info is free software designed to enable health workers, nutritionists, NGO field staff, epidemiologist and others to process and analyze information from epidemiological surveys easily, quickly and accurately in the field.

[www.savethechildren.org.uk](http://www.savethechildren.org.uk)



## WATER FOR PEOPLE, WATER FOR LIFE THE UNITED NATIONS WORLD WATER DEVELOPMENT REPORT

2003, 576 pp

This report offers a comprehensive assessment to date of the state of the world's freshwater resources, based on the collective input of 23 UN agencies and convention secretariats. The global picture is complemented by the presentation of seven pilot case studies of river basins representing different social, economic and environmental settings. The report boasts numerous full-colour maps, country tables, references and coverage of a broad range of themes and real-world examples.

[www.unesco.org/water/wmap](http://www.unesco.org/water/wmap)



## WOMEN AND PLANTS: GENDER RELATIONS IN BIODIVERSITY MANAGEMENT AND CONSERVATION

Patricia L Howard, editor, Zed Books,  
2003, 298 pp

This is a collection of largely unpublished, in-depth case studies drawn from Latin America, Asia, Africa, Europe and North Africa. It aims to increase the understanding of the importance of women and gender relations in plant biodiversity management and conservation. It intends to provide a state-of-the-art overview of the concepts, relationships and contexts that help to explain the relatively hidden gender dimensions of people-plant relations. [www.zedbooks.co.uk](http://www.zedbooks.co.uk)

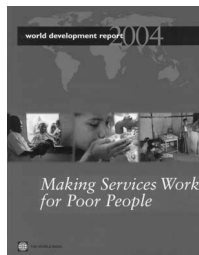
## WORLD AGRICULTURE: TOWARDS 2015/2030 AN FAO PERSPECTIVE

Jelle Bruinsma, editor, FAO and  
Earthscan  
2003, 432 pp

This book is a comprehensive and authoritative assessment of the global predictions for agriculture and food supply from the Food and Agriculture Organization. It examines all forms of agriculture and aquaculture and the economic, technological and environmental factors affecting them. The book asserts that agriculture is crucial to development, especially where it employs a majority of the population, and the need for mobilizing additional resources. Also discussed is the likelihood of meeting the target of halving the number of undernourished people by 2015, through improving development and relieving food security problems.

[www.earthscan.co.uk](http://www.earthscan.co.uk) or [www.fao.org](http://www.fao.org)



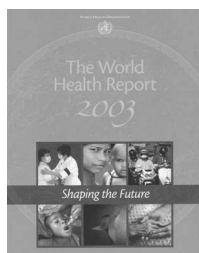


**WORLD DEVELOPMENT REPORT  
2004: MAKING SERVICES WORK  
FOR POOR PEOPLE**

World Bank, 2003, 271 pp

This year's Report says that too often key services fail poor people—in access, in quantity and in quality. The Report provides examples of where services do work, showing how governments and citizens can do better. It documents three ways in which services can be improved: 1) by increasing poor clients' choice and participation in service delivery, so they can monitor and discipline providers; 2) by raising poor citizens' voice, through the ballot box and making information widely available; and 3) by rewarding the effective and penalizing the ineffective delivery of services to poor people. Further, the type of service delivery mechanism (public v. private) needs to be tailored to characteristics of the service and circumstances of the country.

[www.worldbank.org](http://www.worldbank.org)

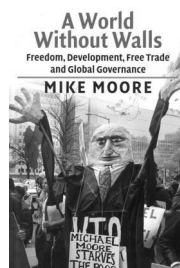


**WORLD HEALTH REPORT 2003:  
SHAPING THE FUTURE**

World Health Organization,  
2003, 193 pp

The key message of the WHR 2003 is that real progress in health depends vitally on stronger health systems based on primary health care. Chapter One assesses the global health situation. The Report finds that average life expectancy at birth has increased globally by almost 20 years. While of the 10.5m deaths among children under-five, more than 98% were in developing countries. Chapter Two

traces the origins of the Millennium Development Goals and charts the progress so far towards achieving them. Chapter Three reviews major trends in the HIV epidemic and discusses the 3 by 5 target of providing 3m people in developing countries with combination antiretroviral therapy by the end of 2005. Chapter Four discusses the Global Polio Eradication Initiative, one of the largest public health efforts in history, and its success in reducing the number of endemic countries from 125 to seven. Still many challenges remain in order to eradicate this crippling disease. Chapter Five examines how SARS rapidly became a major international health problem with implications for health, economy and trade. Yet its rapid containment was an important success story for public health. Chapter Six describes the impact the non-communicable diseases is having on developing countries. Lastly, Chapter Seven emphasizes that health systems must be strengthened to meet the formidable challenges described in previous chapters. The Report is available in English, French, Spanish, Russian, Chinese, and Arabic at [www.who.int](http://www.who.int)



**A WORLD WITHOUT WALLS:  
FREEDOM, DEVELOPMENT, FREE  
TRADE AND GLOBAL GOVERNANCE**

Mike Moore, Cambridge Press,  
2003, 292 pp

Former Director-General of the World Trade Organization, Mike Moore, reflects on his time at the organization in this book. The book also examines global integration, the emerging global civil society and the challenges of global and corporate governance. Moore rebuts the attacks against the WTO and argues that the WTO's promise of rules-based free trade offers the best hope for lifting millions out of poverty.

[www.cambridge.org](http://www.cambridge.org)

**OTHER PUBLICATIONS**

**RECEIVED BY THE SCN**

**SECRETARIAT OVER THE PAST  
SIX MONTHS**

*Breastfeeding and Complementary Feeding Practices in Indonesia: Annual Report 2002.* Helen Keller Worldwide: Indonesia, 2002.

*Complementary Feeding: Report of the Global Consultation. Summary of guiding principles.* WHO: Geneva, 2002.

*Food Safety in Food Security and Food Trade.* Laurian J Unnevehr, ed. IFPRI, Washington, DC, 2003.

*The Micronutrient Initiative Annual Report, 2002-2003.* MI: Ottawa, 2003.

*Monica: Monograph and Multimedia Sourcebook. World's largest study of heart disease, stroke, risk factors, and population trends, 1972-2002.* Hugh Tunstall-Pedeio, ed. WHO: Geneva, 2003.

*MS Swaminathan Research Foundation 2002-2003 Annual Report.* MS Swaminathan Research Foundation: Chennai, 2003.

*Promoviendo el Crecimiento de los Niños: Qué es Eficaz?* Manoff Group, 2003.

*Resource Centre Manual, 2nd edition.* Healthlink, 2003.

*Right to Food Journal.* FIAN July 2003, 1.

*Sexual and Gender-Based Violence against Refugees, Returnees, and Internally Displaced Persons.* UNHCR: Geneva, 2003.

*Terre des Hommes Annual Report 2002.* Terre des Hommes, 2003.

*UNICEF Annual Report 2002.* UNICEF: New York, 2003.

*Unravelling Malnutrition: Challenges of a psychosocial approach.* Barbara Weyermann, Terre des Hommes and Sagun: Kathmandu, 2003.

*World Population Prospects: The 2002 Revision Volumes I and II.* United Nations: New York, 2003.

*...continued from page 2*

negotiate improved humanitarian access to the population. Of course commitments were made, but they were not always respected. Therefore, we had to continue negotiations, which provided us an opportunity to focus on humanitarian issues rather than just broad political ones. I worked closely with the humanitarian community, the NGOs and the UN agencies which were based in Kinshasa, and those who had the courage to work in more dangerous areas of the country. In the East of the DRC there is a very serious humanitarian crisis where an estimated 2.4m to 3m people are displaced and at least 3m to 4m people have lost their lives—again not because of being shot, but because of deprivation and lack of medical resources, food, and clean water. These things are the real killers, it's not just the bullets. In my report to the Security Council last July, I stated that peace-keeping missions are approved primarily in response to humanitarian and human rights violations. But unfortunately, once these operations are carried out the general tendency is to put the humanitarian and human rights issues in the background and to focus primarily on military problems.

***Your friend and former WFP colleague, Ms Catherine Bertini, received the 2003 World Food Prize. What did you say to Ms Bertini upon hearing the news?***

If I can put it in one word, it is “Bravo.” It was really well deserved. Anyone who knows Catherine Bertini, knows she engages herself completely in what she believes. She transformed WFP from just a resource and delivery agency to a far more humanitarian one. The focus became the people the agency serves, especially women. Women are responsible for feeding the family, therefore, food should be made directly available to them. This was a major change in delivering assistance, along with giving women decision-making and priority setting ability. A commitment to girls’ education was also taken towards the end of her final year at WFP. Ms Bertini believes girls’ education is an engine for change: with one programme you can address issues such as nutrition, family planning and the environment. In fact, Ms Bertini dedicated her award to girls’ education and women’s literacy.

***In an 1995 interview with Dr Horwitz, SCN Chair 1986-1995, his advice to all of us was to, “Keep the faith that you are committed to a most noble cause....” What advice do you have for us?***

I believe Dr Horwitz’s advice is still valid, nutrition is a noble cause and people should not despair if results are not immediately seen. But I would add that we need to move a step forward, to really solidify the direction that the SCN is taking, that of influencing policy. There is a saying which goes, “he who knows but cannot let others know what he knows is of the same level as he who does not know.” The SCN must find ways to inform member states of the vast amounts of information on what works in nutrition. Secondly, I would say to continue strengthening the capacity building efforts because if good policies are adopted at national levels, they then need to be translated into practical actions in the community.

# BULLETIN BOARD

## Conferences

**Nutrition and Health: State of the Science and Clinical Application** 11-14 March 2004 Tucson, Arizona, USA. This conference will bring together leaders in scientific research in nutrition and clinicians skilled in nutritional medicine, among others involved in food production and distribution, to discuss the social and political aspects of nutrition and health. Visit [www.ocme.arizona.edu/scripts/calendar.asp](http://www.ocme.arizona.edu/scripts/calendar.asp) for more information.

**31<sup>st</sup> Session of the SCN** 22-26 March 2004 United Nations Headquarters, New York. Symposium to be held on Nutrition and the Millennium Development Goals, along with week-long working group meetings. 8th Dr. Abraham Horwitz Lecture to be presented. Visit [www.unsystem.org/scn/](http://www.unsystem.org/scn/) for registration details.

**18<sup>th</sup> World Conference on Health Promotion and Health Education** 26-30 April 2004 Melbourne, Australia. The conference will cover the entire range of health promotion and health education issues. [www.Health2004.com.au](http://www.Health2004.com.au)

**Assuring Food and Nutrition Security in Africa by 2020** 1-3 April 2004 Kampala, Uganda. This conference will take stock of Africa's food and nutrition security situation, assess why Africa has made so little progress and review the driving forces influencing the continent's prospects. For more information, visit [www.ifpri.org/2020africaconference](http://www.ifpri.org/2020africaconference)

**Traditional Mediterranean Diets: Past, Present and Future** 21-23 April 2004 Athens, Greece. The aim of the Conference is to examine the origin, evolution, benefits and the state of research on Mediterranean diets, as well as the potential and problems associated with their survival. For electronic pre-registration, visit <http://beliotopos.conference.gr/mediet2004>

**XV International AIDS Conference, "Access for All"** 11-16 July 2004 Bangkok, Thailand. The Bangkok Conference will build on the momentum of the 2000 AIDS Conference in Durban, South Africa. Visit [www.aids2004.org](http://www.aids2004.org) for more information.

**SAVE THE DATE! 18<sup>th</sup> International Congress of Nutrition of the IUNS, "Nutrition Safari for Innovative Solutions"** 19-23 September 2005 Durban, South Africa. Visit [www.puk.ac.za/iuns](http://www.puk.ac.za/iuns) for more information.

**XXII IVACG Meeting "Vitamin A and the Common Agenda for Micronutrient"** 15-19 November 2004 Peru. For information on abstract topics and online submission form visit <http://ivacg.ilsa.org>

**2004 INACG Symposium** The International Nutritional Anemia Consultative Group will hold its next symposium immediately following the XXII IVACG meeting. Abstract topics and online submission form for the symposium are available at <http://inacg.ilsa.org>

Abstracts for the IVACG and INACG meetings must be submitted by 29 February 2004.

**5<sup>th</sup> European Conference on Health Economics** 8-11 September 2004 London, UK. Hosted by the London School of Economics Health and Social Care. Details on conference registration and submission of abstracts can be found at [www.lse.ac.uk/collections/LSEHealthAndSocialCare/](http://www.lse.ac.uk/collections/LSEHealthAndSocialCare/)

## New Resources

The Kazakhstan Academy of Nutrition in Almaty, Kazakhstan plays a regional support role for a six country project to increase the production and use of fortified salt and introduce fortified wheat flour in Central Asia. A new website ([www.cark-nutrition.kz](http://www.cark-nutrition.kz)) dealing with salt and flour fortification in several countries in central Asia has been developed to allow the project's participating countries to better share lessons learned.



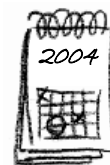
The Food and Agriculture Organization has launched Access to Global Online Research in Agriculture (AGORA), an online clearinghouse of approximately 400 journals in the fields of agriculture, biology, and related environmental and social sciences.

FAO plans to increase the quality and effectiveness of agricultural education and research by providing wider access to published information. For more information, visit [www.fao.org](http://www.fao.org)

An updated list of organizations producing or distributing low cost print materials related to nutrition is now on the Nutrition Society's website [www.nutrition-society.org/education](http://www.nutrition-society.org/education) under Nutrition Training Materials.

The International Atomic Energy Agency has published a new brochure on nutrition, available at [www.iaea.org/worldatom/Press/focus/nutrition/index.shtml](http://www.iaea.org/worldatom/Press/focus/nutrition/index.shtml)

2002 global statistics on asylum-seekers, refugees and others of concern to UNHCR are now available from the UNHCR website, [www.unhcr.ch](http://www.unhcr.ch), Statistics. The data provide a comprehensive statistical overview of population categories. All files are downloadable in Excel.



Would you like to post a notice on this board?

The next issue of *SCN News* will be published in July 2004.

Please send your contributions to [scn@who.int](mailto:scn@who.int)



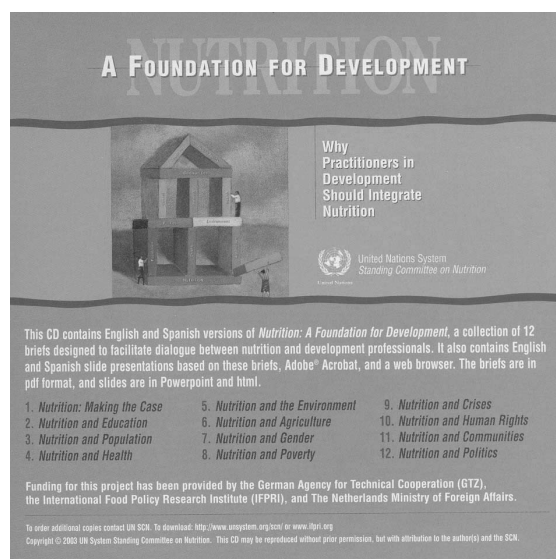
# UNITED NATIONS SYSTEM

## Standing Committee on Nutrition

# Publications

The following SCN publications are available from our website:  
[www.unsystem.org/scn](http://www.unsystem.org/scn)

- Reports on the World Nutrition Situation
- Nutrition Policy Discussion Papers
- SCN News
- Refugee Nutrition Information System
- Country Case Studies (Brazil, Egypt, India, Indonesia, Tanzania, Thailand, and Zimbabwe)
- Nutrition: A Foundation for Development (English and Spanish versions)
- Final Report to the SCN by the Commission on the Nutrition Challenges of the 21st Century—Ending Malnutrition by 2020: an Agenda for Change in the Millennium



Now available! **A Foundation for Development** CD-ROM. All 12 briefs included in English and Spanish. Contact the SCN Secretariat for a copy,  
[scn@who.int](mailto:scn@who.int)



# UNITED NATIONS SYSTEM STANDING COMMITTEE ON NUTRITION

The Administrative Committee on Coordination (ACC), which was comprised of the heads of the UN Agencies, recommended the establishment of the Sub-Committee on Nutrition in 1976, following the World Food Conference and with particular reference to Resolution V on food and nutrition. This was approved by the Economic and Social Council of the UN (ECOSOC) by resolution in July 1977. Following the reform of the ACC in 2001, the ACC/SCN was renamed the United Nations System Standing Committee on Nutrition or simply “the SCN”. The SCN reports to the Chief Executives Board of the UN, the successor of the ACC. The UN members of the SCN are ECA, FAO, IAEA, IFAD, ILO, UN, UNAIDS, UNDP, UNEP, UNESCO, UNFPA, UNHCHR, UNHCR, UNICEF, UNRISD, UNU, WFP, WHO and the World Bank. IFPRI and the ADB are also members. From the outset, representatives of bilateral donor agencies have participated actively in SCN activities as do nongovernmental organizations. The SCN Secretariat is hosted by WHO in Geneva.

The **mandate of the SCN** is to serve as the UN focal point for promoting harmonized nutrition policies and strategies throughout the UN system, and to strengthen collaboration with other partners for accelerated and more effective action against malnutrition. The **aim of the SCN** is to raise awareness of and concern for nutrition problems at global, regional and national levels; to refine the direction, increase the scale and strengthen the coherence and impact of actions against malnutrition worldwide; and to promote cooperation among UN agencies and partner organizations. The SCN’s annual meetings have representation from UN Agencies, donor agencies and NGOs; these meetings begin with symposia on subjects of current importance for policy. The SCN brings such matters to the attention of the UN Secretary General and convenes working groups on specialized areas of nutrition. Initiatives are taken to promote coordinated activities—interagency programmes, meetings, publications—aimed at reducing malnutrition, reflecting the shared views of the agencies concerned. Regular reports on the world nutrition situation are issued. *Nutrition Policy Papers* are produced to summarize current knowledge on selected topics. *SCN News* is published twice a year, and the *RNIS* is published quarterly. As decided by the SCN, initiatives are taken to promote coordinated activities—inter-agency programmes, meetings, publications aimed at reducing malnutrition, primarily in developing countries.

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