

**Growing healthy children:
Addressing child undernutrition through agriculture
A World Vision discussion paper**



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This discussion paper seeks to make explicit the role that agriculture, in particular, support to smallholder farmers, has in reducing child undernutrition. There is a growing international consensus on the value of direct nutrition interventions in improving poor children's nutritional status. However, much less is understood about how **indirect** interventions -- such as support to agriculture -- can make a contribution to sustained improvements in poor children's nutritional status. This paper seeks to stimulate thinking on concrete ways to improve the nutritional status through agricultural interventions.

We welcome comments or questions. Please contact:

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Key Messages

- The global food and economic crises have highlighted the precarious food security situation of poor people around the world; they have also illustrated the central importance of agriculture to poor peoples' livelihoods.
- Heightened global attention to agriculture has largely focused on improving the *availability* of food through support to increased production of staple crops. Much less attention has been paid to the other key components of food security: *access, utilization* and *stability*¹. These three components have an important impact on the potential of agricultural interventions to contribute to improved nutrition, particularly for vulnerable groups such as women and children.
- In order for agricultural and other food security interventions to contribute to improved nutrition security, improved nutrition outcomes, particularly for children, must be an explicit objective of agricultural policy and programs.
- Women are key actors in children's health and nutrition, as well as the agriculture sector. Food security and other welfare gains such as improved nutrition are strongly linked to the provision of greater economic opportunities and increased decision-making power for women. Improving poor women's access to income-earning opportunities and productive assets is vital, to strengthen the ability of women to meet their household responsibilities for children's health and nutrition.
- Coordinated action at the international, national and community levels is needed to ensure that key actors deliver food and nutrition security for the most vulnerable.

Introduction

The global food and economic crises have highlighted the precarious food security situation of poor people around the world. Close to a billion people—nearly a sixth of the world's population—now suffer from chronic hunger². These are crises with devastating and far-reaching effects. Hunger weakens immune systems and stunts children's physical and cognitive development; over a third of all child deaths in the developing world are related to undernutrition. The majority of the world's poorest

² Recent FAO figures put the number of food insecure people at 925 million, down 98 million from the height of the food/economic crisis.

people are women and children, who live in rural areas and rely on agriculture as their primary source of food and income. Chronic hunger³ and under-nutrition result primarily from poverty—people who are poor often simply cannot afford to grow or buy enough food. Without enough food, adults struggle to work and children struggle to learn, posing severe challenges to sustainable economic and social development.

The global community responded to the food crisis with a two-track approach: immediate, increased support for emergency food assistance, to mitigate the worst effects on vulnerable populations; and a commitment to develop a coordinated, longer-term response. The L'Aquila Food Security Initiative, announced at the 2009 G8 in Italy, cemented the global community's commitment to comprehensively address the underlying causes of hunger and under-nutrition. A key element of this longer-term response was its clear recognition of the need to increase investments in smallholder agriculture, a reflection of the major contribution which agriculture makes to the food security, nutrition and livelihoods of the rural poor.

World Vision welcomes increased attention to agriculture, in particular the focus on smallholder farmers. However, our experience indicates that increased on-farm production of staple crops and increased incomes are not synonymous with improved nutritional outcomes at the household level, particularly for women and children. In fact, this is borne out at the macro level: many of the countries on track to meet the income and poverty target of the Millennium Development Goals (MDG#1) are making little or no progress towards reducing under-nutrition⁴.

Currently, when development programming includes nutritional objectives, nutrition is regarded largely as a health sector issue, to be addressed through short-term, health-related interventions (such as micronutrient supplements, Ready-to-use Therapeutic Foods (RUTFs), such as PlumpyNut) and/or longer-term public health measures such as food fortification through adding a key micronutrient to a commonly-eaten food. The nutrition community has done excellent work over the past few years in demonstrating the cost-effectiveness and high-impact results of increased investments in health-related nutrition interventions; for pennies per person, widespread reductions have been achieved in nutrition-linked diseases, and improvements made in child growth rates. The agriculture community has largely regarded improved nutrition, particularly for women and children, as tangential to their work, an indirect but not a major benefit of increased support for agriculture or broader development efforts. Consequently, there is limited evidence on how agriculture programmers and policy makers can most effectively support improved nutrition outcomes for poor households, particularly women and children.

³ Hunger refers to an insufficient intake of calories, while under-nutrition refers to the balance of calories and important macro- and micro-nutrients.

⁴ United States Government , *Feed the Future*, (2010).

Long-term solutions to undernutrition must address its underlying determinants: poverty, inadequate agricultural production, lack of access to quality food, weak policy environments, lack of access to health care, poor sanitation and hygiene, and gender inequality. The evidence suggests that a coordinated and integrated approach is needed to reach our common goal of reduced poverty and hunger over the long term. **Attention to increasing agricultural production and economic growth must be complemented with targeted attention to improving nutrition outcomes—in other words, ensuring agriculture development and broader development efforts are nutrition-sensitive.**

Recommendations for ensuring agriculture development leads to better nutrition outcomes for women and children

...agricultural interventions are most likely to affect nutrition outcomes when they involve diverse and complementary processes and strategies that redirect the focus beyond agriculture for food production and toward broader consideration of livelihoods, women's empowerment and optimal intrahousehold use of resources. Successful projects are those that invest broadly in improving human capital, sustain and increase the livelihood assets of the poor and focus on gender equality⁵.

The amount of food available and its quality are the most direct links between agriculture, food security and health. Investments in improved agricultural livelihoods that support smallholder farmers, particularly women, can make a significant contribution to preventing child under-nutrition. Specifically, agricultural interventions must increase the production of energy and nutrient dense food throughout the year, strengthen smallholder farmer's asset base and address inequities in household allocations of resources.

Appropriate agriculture/livelihoods interventions should:

- **Increase household production and use of nutrient dense foods.** In addition to supporting increased *production* of staple crops, attention should be paid to increasing production and consumption of *nutrient-dense* foods.⁶ Support to agricultural and livelihoods diversification and

⁵ World Bank, *From Agriculture to Nutrition: Pathways, Synergies and Outcomes*, (2007). International Bank for Reconstruction and Development / The World Bank.

⁶ Examples of nutrient-dense foods include animal-based foods (livestock, fish), protein-rich plant foods (legumes), and vitamin and mineral-rich foods (e.g. leafy green vegetables and fruits as well as new biofortified varieties of staple foods.).

local/community-based food fortification (particularly with iron and zinc) are both important strategies to increase the amount of nutrient-dense foods for household consumption, particularly when those strategies seek a high degree of involvement from women.

- **Invest in poor women’s leadership.** Food security and welfare gains (such as reductions in child under-nutrition) are strongly linked to the provision of greater economic and decision-making opportunities for women, whether they live in rural or urban areas. Strengthening women’s access to productive resources such as land, credit, seed, fertilizer, and information, as well as improving market access should be part of support to agricultural development. However, access to opportunities must be accompanied by programs (such as PD/Hearth, Box 1) that recognize and build on poor women’s priorities and knowledge; the purpose here is to support women’s leadership and confidence-building, so that they can translate opportunity into action.

Box 1: Supporting poor women’s leadership: Positive Deviance (PD) Hearth. PD Hearth is a participatory, community-based program designed to sustainably reduce child under-nutrition. The program identifies health-promoting behaviours practiced by caretakers of well-nourished children from poor families and brings communities together to discuss these positive practices, with the objective of transferring such positive practices more widely in the community. The PD/Hearth approach particularly recognizes the expertise of women and strengthens their leadership role in addressing key development challenges in their communities.

- Preliminary reports show that malnutrition rehabilitation ranges from 80-85% among participating children;
- Development of community solidarity and leadership (particularly women’s leadership and self-confidence) to address malnutrition;
- Participation of the absolute poorest families within a community (who are often excluded), with an active role for all family members;
- Promoting integrated rural development approaches—including economic development, agriculture and health;
- Impacting policy at local level, mobilizing communities to adopt a more comprehensive approach to development

- **Be designed to smooth consumption in poor households throughout the year.** Seasonality has long been recognized as a major determinant of poverty, food insecurity and poor nutrition in developing countries. This is particularly important for nutritionally vulnerable groups such as children under 5, who have a very small window of time before reductions in quantity and quality of food can cause severe and often irreversible health and cognitive impacts. Integrated approaches to smallholder production systems that focus on reliability and stability of production throughout the year can make a significant contribution to consumption smoothing for poor households. The use of locally-adapted seed and livestock varieties, improved farm management techniques (e.g. conservation farming, improved post-harvest management, including preservation techniques such as solar drying) and small-scale irrigation systems (such as drip irrigation) and on- and off- farm livelihoods diversification are all key to building resilience in smallholder systems—so as to meet food and nutrition needs throughout the year. Labour shortages at key periods in the production cycle (e.g. land preparation and weeding), particularly for households headed by women and children, have significant consequences for smallholder production; this is a critical but often overlooked area.

- **Integrate nutrition outcomes into agriculture project/programming performance measurement systems.** Recent reviews⁷ (Berti *et al.* 2004; World Bank 2007) present compelling evidence that unless improved nutritional status is an explicit objective of agricultural interventions, there is limited evidence improved nutrition will occur. Agriculture interventions that have successfully addressed child under-nutrition included nutritional objectives, implicitly recognizing that there is not a direct line between investments in agricultural production/ growth and improved nutrition. There is an urgent need to develop a robust set of practical agriculture-nutrition indicators and guidelines that will support this important area of work.
- **Address child stunting through building better linkages between complementary feeding requirements and agricultural production.** Adequate complementary feeding⁸ for children 6-24 months of age is critical to the prevention of stunting⁹. Stunting is a well-established child health indicator of chronic malnutrition related to environmental and socio-economic circumstances¹⁰ (WHO 1996), and affects over a third of all children in developing countries. The most sustainable, cost-effective way to improve the complementary feeding of children in poor, rural households is by ensuring that nutritionally-appropriate foods are available and utilized at the household/community level (see Box II). Agricultural interventions can play a particularly important role by including an

Box II: MICAHA: Addressing stunting through improved child feeding. World Vision programs that have resulted in significant decreases in stunting 1) target and monitor stunting; 2) are multi-sectoral (ie. integrate nutrition into health, agriculture, and water/sanitation interventions); and 3) target interventions to mothers and children under five.

The Micronutrient and Health (MICAHA) program initiative, funded by CIDA and World Vision Canada, was implemented in Ethiopia, Ghana, Malawi, Senegal and Tanzania. MICAHA delivered integrated, community-based interventions to improve nutrition combined with national-level advocacy. Key MICAHA interventions focused on: improving household food security; promoting good infant and young child feeding practices; improving micronutrient status; prevention and treatment of diseases; and improving access to clean water, sanitation and hygiene.

Impact on Stunting in MICAHA program areas

- In Tanzania, rates of stunted children decreased from 43% to 28%; underweight children from 42% to 21%
- In Ethiopia, child stunting decreased from 64% to 41%, and
- In Malawi, rates of stunted children decreased from 56 to 40%

⁷ Berti PR, Krusevec J, FitzGerald S (2004), *A review of the effectiveness of agriculture interventions in improving nutrition outcomes*. Public Health Nutrition 7:599-609.

World Bank (2007), *From Agriculture to Nutrition: Pathways, Synergies and Outcomes*. International Bank for Reconstruction and Development / The World Bank.

⁸ Complementary feeding means giving food in addition to breastmilk to children 6-24 months of age.

⁹ Stunting is defined as having a height (or length)-for-age more than 2 SD below the median of the WHO international reference.

¹⁰ WHO. *Catalogue of Health Indicators: a selection of important health indicators recommended by WHO Programmes (1996)*. Geneva

emphasis on the complementary feeding requirements of young children; indeed, agriculture remains an optimal sector of focus for ensuring that nutritionally-appropriate complementary foods are available and contextually/culturally-appropriate.

- **Integrate nutrition education.** A review by Berti et al. (2004)¹¹ found that improving the availability of nutrient-dense foods is only part of the solution to under-nutrition; agricultural interventions that made a measurable contribution to improved nutrition also contained a nutrition education component and other behavior-change strategies directed at women, both mothers and other influential women in households and communities, such as grandmothers,. These behavior change strategies should encourage women to: a) recognize the value of producing and/or purchasing a variety of foods; and b) teach them how to store and prepare those foods to preserve nutrient content. More recent work¹² points to the importance of involving fathers in these discussions to ensure that improved nutrition for children are household and community priorities.
- **Contribute to coordinated country-led action on child under-nutrition.** Concerted multi-sectoral planning and action at the country level, led by national governments, is widely recognized as critical vital to sustainably reducing undernutrition¹³. Three steps common to countries who have made substantial inroads in addressing child undernutrition are¹⁴: 1) government stock-taking of the national nutrition situation and existing responses; 2) development of national plans of action for scaling up nutrition; and, 3) rapid implementation of plans through both internal and external funding. As an example of a global initiative designed to support national-level action on child under-nutrition, REACH is an international partnership to end child hunger and under-nutrition (see Box III). The agriculture sector's contribution to national food security objectives in most developing countries makes it a key player in the achievement of national nutrition objectives. Investments in building the interest and capacity of national agricultural systems to integrate nutrition outcomes in their planning and policy processes would make a significant contribution to sustainable improvements in child nutrition over the long term.

Box III: REACH: supporting national cross-sectoral action on child under-nutrition.

REACH was established by WFP, UNICEF, FAO, WHO and partners (such as World Vision) to support governments in scaling up focused country action on child under-nutrition. REACH promotes the scaling up of interventions proven to reduce child under-nutrition, focusing on five priority areas related to food security, health and care:

- 1) increasing and improving breastfeeding and complementary feeding;
- 2) improving household food security;
- 3) micronutrient intake;
- 4) treatment of severe acute malnutrition; and
- 5) diarrhea and parasite control.

REACH mobilizes action in four areas: country action planning and coordination; knowledge sharing, communications and

¹¹ Berti, Peter R., Krusevec, Julia and Sian FitzGerald, 'A review of the effectiveness of agriculture interventions in improving nutrition outcomes', *Public Health Nutrition*, 7/5 (2004), 599–609.

¹² IRIN. "Feeding the children 'not women's work,'" (June 9, 2010), www.irinnews.org/Report.aspx?ReportID=89398.

¹³ Scaling Up Nutrition (SUN) Framework 2010

¹⁴ SUN Roadmap 2010

- **Build household resilience to shocks.** Vulnerability and risk are pervasive features in the lives of poor rural households and the critical role of household assets in coping with shocks is well-known. For example, poor households – especially female farmers – often choose to maintain low-yield food farming strategies because they offer the least risk to things of greatest importance to them, like food security. Planning for agricultural interventions must be based on an analysis of key household priorities and assets and the risks associated with diversifying away from those priorities.

Conclusion

The global food and economic crises refocused the world's attention on the almost one billion people who do not have enough nutritious food for a healthy life. The majority of food insecure people are women and children, live in rural areas, and rely on agriculture as their primary source of food, nutrition and income. Investments in improved agricultural livelihoods that support smallholder farmers, particularly women, can make a significant contribution to preventing child undernutrition. Coordinated multi-sectoral action at the country level must support poor rural households and communities to increase the production and utilization of energy and nutrient dense food throughout the year, strengthen their asset base and address inequities in household allocations of resources.