



MULTI-SECTORAL NUTRITION STRATEGY
2014–2025
Technical Guidance Brief

GENDER CONSIDERATIONS FOR
ACHIEVING NUTRITION
OUTCOMES THROUGH
AGRICULTURE

BACKGROUND

Reaching the 2025 World Health Assembly nutrition targets and the objectives of the [U.S. Agency for International Development \(USAID\) Multi-Sectoral Nutrition Strategy](#) will require interventions that are both nutrition-specific and nutrition-sensitive – interventions that address malnutrition’s underlying determinants and include nutrition activities or objectives.¹ The agriculture sector can contribute to nutrition by increasing the food production and income of smallholder households. It can support the availability and affordability of a diverse diet while increasing household earnings, which could potentially be used for the purchase of food and non-food goods and services important to family health and nutrition. The first agriculture-related brief in this series highlights the importance of intentionality in obtaining such nutritional outcomes from agriculture (USAID, 2015b).²

Improved access to nutritious, diverse diets and increased expenditure on health and nutrition may be more likely to be achieved and sustained if women are empowered (see *Box 1*). When women are empowered,

Box 1: Women’s Empowerment: Cornerstone of the Agriculture-to-Nutrition Pathways

When women have an empowered role in production and in decisions about income use, vulnerable household members’ access to food, health, and care can be improved (SPRING, 2014b). Some evidence suggests that women’s control over land, cash, other assets, and related decision-making reduces the prevalence of child malnutrition (Rahman, Saima, & Goni, 2015; Allendorf, 2007).

Women’s work in production or marketing may increase their income, raise their influence in decision-making over income use, or improve consumption, depending on socioeconomic and cultural factors (Ruel & Alderman, 2013; Grace, Roesel, Kang’ethe, Bonfoh, & Theis, 2015; van den Bold et al., 2015).

However, income-generating efforts can reduce time spent on childcare and care seeking, although child nutrition may be protected via other adults providing care. Maternal nutrition may also suffer, particularly in key labor-intensive seasons (Kadiyala, Harris, Headey, Yosef, & Gillespie, 2014). Agriculture activities should assess these issues and take measures to promote and protect nutrition.

¹ A multi-sectoral approach is needed because nutrition-specific interventions alone can reduce stunting by only 20 percent (Lancet, 2013). Making the additional 20 percent reduction needed to reach the World Health Assembly target will require nutrition-sensitive interventions; for example, agriculture interventions that can ultimately influence outcomes related to food, health, and care (Ruel & Alderman, 2013).

² The [Improving Nutrition through Agriculture Technical Brief Series](#) provides a detailed introduction to the agriculture-to-nutrition pathways.

agricultural productivity rises, infant mortality declines, and child health improves (Coleman, 2011). Gender equality and female empowerment comprise a guiding principle in the USAID Multi-Sectoral Nutrition Strategy.³ This brief proposes that addressing gender within agriculture can help sustainably achieve both agricultural and nutritional outcomes.

ENHANCING GENDER EQUITY IN AGRICULTURE TO SUPPORT NUTRITION

A first step in working to improve agriculture's impact on nutrition is to assess the context (SPRING, 2014a). This process includes characterizing the underlying factors leading to malnutrition, men's and women's different roles in households, and the nature of men's and women's involvement in agriculture from production through processing to marketing. With this information, a strategy can better address context-specific drivers in order to improve nutrition and agriculture.

Gender norms are an important part of that context. Gender norms can limit opportunities for agricultural households to earn their livelihoods and ultimately access food and caregiving resources. As these norms impact both women and men, gender equity is about more than overcoming disparities; it is also about engaging men as providers and caregivers whose choices are important.

Programs that provide support to agricultural households to improve nutrition should therefore

1. enhance women's roles in agriculture – including contributing to decision-making over what is produced, why, and how – through increased access to assets, inputs, and services
2. facilitate women's access to opportunities to generate income and increase their participation in decisions on the use of household income
3. promote a more equitable division of time and labor needed to ensure better nutrition

These three considerations and corresponding recommendations are detailed below.

I. ENHANCE WOMEN'S ACCESS TO AND PARTICIPATION IN DECISION-MAKING ABOUT THE USE OF AGRICULTURAL ASSETS,⁴ INPUTS, AND SERVICES

Farmers, fishers, and agricultural laborers require access to assets and inputs – such as land and water rights, extension and financial services, and inputs such as seeds, fertilizers, feed, and veterinary pharmaceuticals – to produce a greater quantity and a wider variety of foods. *Box 2* describes how, with better access to productive

³ The [Multi-Sectoral Nutrition Strategy](#) uses the term “gender equality,” whereas this brief uses the term “gender equity.” The former aims to expand freedoms and improve overall quality of life so that equality is achieved without sacrificing gains for males or females (USAID, 2012), whereas the latter acknowledges that, in a given area, women or men may begin at a disadvantage. For example, women may need additional support with extension services (if they have had less access) and men may need additional support to select nutritious foods (if they have had less experience doing so).

⁴ The five livelihood assets are natural (land and water), financial (credit and other financial services), physical (infrastructure, tools, and equipment to work the land and bring produce to market), human (labor, health, education, and capacity to work), and social (group membership) (Carney, 1998).

resources, women farmers can produce more. However, a review of experiences in Feed the Future focus countries (USAID, 2015a) indicates that disparity in access to these resources is common.

As one example, men and women may have access to a different quality of good or service, such as extension workers providing men with high-yielding hybrid seeds for use in irrigated fields, while women have access only to inferior seeds for rain-fed household plots (Spring, 1995); in some instances, women may simply not have access to the service at all, as agricultural extension workers are often men and may culturally or preferentially work with men (FAO, 2011).

These decisions are often rationalized, as agents or other market actors may believe that women will not be able to make use of a good or service without access to inputs or assets, such as land, income to purchase tools or inputs, or literacy and numeracy skills. When these disparities are addressed, they can benefit the whole family. For example, a TechnoServe program in Ethiopia asked husbands to have their wives participate in agricultural trainings with them, allowing husbands and wives to both be on sound footing for making better decisions together. In one case study, a participating couple increased its yield by 140 percent (Satterly, 2016).

Legal frameworks and cultural norms need to be addressed to allow women to take a more empowered role in agriculture. This process will require engaging government, advocacy groups, and local communities. When a farmer does not have secure access to sufficient land, she is less likely to invest in improvements to the land, cannot use the land as collateral to access credit and other financial services, and may not be permitted to access services or join farmers' associations (Ali, Deininger, & Goldstein, 2014; Deininger, Ali, & Alemu, 2011; Giovarelli, Wamalwa, & Hannay, 2013). These gender norms on asset holdings or decision-making about the use of those assets diminish women's ability to contribute to their families' livelihoods, health, nutrition, and overall wellbeing.

Box 2: Increasing Women Farmers' Access to Resources Can Reduce World Hunger

Land farmed primarily by women yields, on average, 20 percent–30 percent less than land farmed primarily by men. A review of studies attributed this disparity to differences in access to inputs and asserted that if women had the same access, their yields would be the same. Increasing yields on the land farmed primarily by women could increase agricultural output in developing countries by 2 percent–4 percent and reduce the number of undernourished people by approximately 12 percent–17 percent (FAO, 2011).

As women's and men's access to assets, inputs, and services expand, care should be taken to mitigate exposure to potentially hazardous substances like pesticides, biological agents, and vectors of disease, which all have implications for nutrition (Gajadhar, 2015; Turner, 2013; Grace et al., 2015). Key population groups are especially vulnerable; for example, children can be affected by agrochemicals due to maternal exposure during pregnancy or lactation. Even if women do not work directly with these toxins, men who do may bring home residue on their hands or clothing. Exposure in utero could cause premature birth and fetal growth retardation, both of which could then contribute directly to stunting. Proper management of livestock is also important due to potential exposure to zoonosis – a disease that can be transmitted to humans from animals. For example, anemia is found in the early stages of brucellosis, one such disease (Crosby, Llosa, Miro Quesada, Carrillo, & Gotuzzo, 1984). Additionally, when livestock are kept in or near a family's living space, it increases the likelihood that children will consume feces and subsequently develop environmental enteropathy, which is associated with stunting (Mbuya & Humphrey, 2016).

In summary, women's access to natural, physical, financial, human, and social capital for production – as well as decision-making rights over the use of these resources – needs to be strengthened, so they can more effectively contribute to food production.

Examples of interventions that might, depending on context, increase access while mitigating potential hazards include –

- offering extension services for crops and animal products that women produce or process, to increase access to nutrient-rich foods
- providing financial services (credit and savings mechanisms) to women as well as men, for improved food production
- promoting safe use and storage of agrochemicals, including pesticides and veterinary pharmaceuticals used in livestock and crop production, so as to reduce children’s and women’s exposure where possible

2. INCREASE WOMEN’S OPPORTUNITIES TO GENERATE INCOME AND TO PARTICIPATE IN DECISION-MAKING ABOUT THE USE OF HOUSEHOLD INCOME

While farmers, fishers, and foresters need access to assets, inputs, and services for agricultural production, they also need assets, inputs, and services to convert their production into income. For instance, access to a seemingly small asset, such as a mobile phone, can have a substantial impact on a woman’s ability to participate in market activities. In places where cultural norms restrict women’s mobility, telecommunication technologies help them actively participate in the market to sell goods, receive payments, and request information and services from banks, non-governmental organizations, governments, and industry associations. Such access enables women to participate in income-generating activities within accepted cultural parameters (Dlott & O’Byan, 2015).

Similarly, when families acquire new physical assets, test new crops, or adopt new practices, they should be supported to ensure that women are not negatively affected. For example, when a crop that has traditionally been managed by women is commercialized, men may sometimes assume control over its production, sale, and resulting income. This does not imply that programs should not invest in these crops, but rather that they should also facilitate women’s benefit from such investment.

In instances where women have the opportunity to earn income through employment in the agricultural sector (as laborers, processors, or traders), they may nevertheless experience limited seasonal access to work, unequal wages, or unsafe working conditions (Markel, Hess, & Loftin, 2015). Moreover, because these opportunities require women to work away from home, they may pose a threat to maternal and child health and nutrition by restricting a mother’s ability to feed and care for herself and her children. To facilitate women taking advantage of these employment opportunities, activities can encourage employers to provide toilets for both women and men, childcare, private areas for breastfeeding, and maternity leave (Herforth, Jones, & Pinststrup-Andersen, 2012).

Women’s ability to earn income is important to nutrition because, among other reasons, research shows that in many places women may be more likely to spend income on food and healthcare for their families, particularly for children (UNICEF, 2011; Smith, Ramakrishnan, Ndiaye, Haddad, & Reynaldo, 2003). However, some studies on cash transfers have found no difference in outcomes between transfers received by fathers and those received by mothers (Yoong, Rabinovich, & Diepeveen, 2012). Additionally, depending on context, women might spend more on their children in the short-term for food, health, and care whereas men might invest in livelihoods, which could raise overall household income, leaving more resources available to cover these expenditures (McKenzie, 2012). Therefore, in addition to supporting women to earn income, nutrition-sensitive agriculture activities should enhance women’s decision-making roles in determining how household income is spent and support men to make positive decisions for nutrition (Ruel & Alderman, 2013; Smith et al., 2003).

Promoting joint decision-making over earning and using income can create positive outcomes. Evidence from rural Bangladesh found that households that work together are more likely to experience sustained poverty escape (LEO Project, 2016). In the TechnoServe example from Ethiopia, the resultant higher incomes generated allowed for greater investments in livelihood, food and care, and long-term human capital, such as education (Satterly, 2016).

In some cases (see Box 3), activities can support families in deciding together how to spend income, reinvest in production, and consider options related to the sale and consumption of foods produced (Manfre et al., 2013). Information and support can empower household members who have influence over food consumption, such as fathers or grandmothers, to pursue the best outcomes for their families' nutrition and wellbeing (Mukuria, Martin, Egondi, Bingham, & Thuita, 2016). In other cases, it may be more practical to support women's autonomy in decision-making – for example, where domestic violence makes joint decision-making challenging or where the husband is frequently absent, and it would be impractical to wait for his return to make a decision.

As already noted, agriculture activities must design interventions based on a thorough context assessment, including a gender assessment,⁵ to understand household roles and interpersonal dynamics. The Women's Empowerment in Agriculture Index (WEAI), Gender Integration Framework, and WEAI Intervention Guide are tools that can assist implementers in diagnosing which aspects of women's empowerment might be most critical in a context and then design interventions to enhance decision-making (see Box 4). The results may ultimately strengthen nutrition through the women's empowerment pathway. Sample investments to specifically promote women's participation in income-generating activities and decision-making over income include –

- providing men and women with business and household budgeting training, including budgeting for a nutritious diet and healthcare
- establishing a safe working environment that also supports healthy families (including access to washrooms, maternity and sick leave, breastfeeding facilities, and childcare services)

Box 3: Enhancing Intra-Household Relationships for Better Nutrition Outcomes

The USAID/Empowering New Generations to Improve Nutrition and Economic Opportunities (ENGINE) Project in Ethiopia developed tools to help men and women strengthen their intra-household communication and decision-making skills. Before trying new strategies at home with their spouses and other family members, men and women practice them in the safe setting of facilitated group meetings with their peers. The “Relate, Communicate & Decide” role plays, the maternal and child Menu Planning games, and the “Earn & Buy” game all enable men and women to simulate different scenarios that might arise, talk through options, try various strategies, receive peer feedback and support, and ultimately tailor their newly acquired dialogue and decision-making skills to their real-life home environments (Clemmons, 2015).

⁵ USAID's Automated Directives System (ADS) requires USAID Missions and Bureaus to conduct gender analysis and incorporate findings throughout strategies and projects (see “Additional Resources” below). A gender analysis looks at differences in men's and women's roles, power, needs, constraints, and opportunities, and the resulting impacts (USAID, 2012). It examines specific roles and responsibilities for all household and livelihood activities and determines approaches for making time, labor, and income control more equitable (USAID, 2016).

- facilitating equitable access to agriculture and health information, including through communications technology
- ensuring that men and key household influencers are trained about the importance of nutrition-related investments (e.g., healthcare, water and sanitation, and nutritious foods)

3. PROMOTE MORE EQUITABLE DIVISION OF TIME AND LABOR NEEDED TO ENSURE BETTER NUTRITION

Box 4: Women’s Empowerment in Agriculture Index (WEAI)

The WEAI was developed to help Feed the Future measure women’s empowerment in agriculture, including their empowerment relative to men. The WEAI assesses five domains of empowerment:

- decisions regarding agricultural production
- access to productive resources
- control over income
- community leadership
- time allocation

A review of WEAI results across thirteen Feed the Future focus countries between 2011 and 2013 found that limited access to credit and group membership and high workloads were the top constraints to women’s empowerment in agriculture (Malapit et al., 2014). WEAI data can help with diagnosis, identifying where to focus so that women can more effectively contribute to and benefit from agriculture and have the voice and resources to improve nutrition. The [Intervention Guide for the Women’s Empowerment in Agriculture Index](#) can help use that information to plan an approach to address the key domains in that context. The [Gender Integration Framework](#) is a conversation guide to arrive at prioritized actions for gender integration in agricultural programming.

Women often have difficulty finding enough time for both economic and household responsibilities. This results in either feeding/caregiving or economic activities being compromised, each of which negatively impacts nutrition (Johnston, Stevano, Malapit, Hull, and Kadiyala, 2015; Webb, 2013). Limited time to travel to a clinic or prepare meals may prevent families from seeking health services or cause them to switch to less healthful food.

Recognizing each family member’s roles and responsibilities can help move toward greater sharing of productive and household responsibilities, increasing efficiency while providing needed rest time (Johnston et al., 2015; Herforth et al., 2012). Women often carry out more caregiving labor, but interventions can help sensitize men to support their children’s and wives’ food consumption and care needs (see Box 5). Girls and boys juggle caregiving and agricultural responsibilities, including time spent fetching water and wood and caring for younger siblings. As a result, they may forego their education, impacting the nutrition of both themselves and their future wives and children. Brothers who are allies in helping their sisters may grow into men who help their wives (Burke, 2013). When men share the household labor burden, women are better able to provide for their families’ nutrition, and children are protected.

Agricultural investments can support both caregiving responsibilities and women's income-generating opportunities. For example, when activities introduce labor- and time-saving technologies, they can encourage men and women to use newly available time for child- and self-care. A Concern Worldwide program in Zambia that promoted conservation agriculture – a practice involving minimum tillage, maintenance of soil cover, and crop rotation – led to an increase in time availability for participating women farmers (Mayer, 2015). The use of herbicides and mulches reduced weeding, which contributed to this time savings. The women involved reported that they were able to use the additional time to breastfeed more, prepare meals for their children, and rest. Activities can also facilitate buy-in from partners/fathers and other family members regarding women's participation and hold trainings at times and in locations that are safe and convenient for women. These inclusive actions help to ensure adequate care and feeding of participants and their children. Overall, agricultural investments must consider how the household shares responsibilities to ensure coverage of all livelihoods and household work.

Additionally, when women farmers work at a high level of physical intensity, both agricultural productivity and birth outcomes can suffer, and women may be unable to meet the physical demands of pregnancy and lactation (Herforth et al., 2012). Seasonality can amplify this when key stages of pregnancy overlap with labor-intensive stages in the agricultural calendar (Kadiyala et al., 2014). Families need to support mothers' additional needs for quality food and/or rest during pregnancy and lactation. Otherwise, women's and children's nutritional status and children's long-term potential will be undermined. Here again, conservation agriculture can be managed to minimize the intensity of labor. Typically, the work necessary to prepare the land for conservation agriculture is spread out over a longer period than is used for conventional land preparation, which must be completed in an intense labor period after the rains begin (Mayer, 2015). Conservation agriculture has the potential, therefore, to minimize intensity of energy demands on pregnant or lactating women and expand opportunities for labor-sharing with men who may be engaged in the production of other crops.

Sample interventions to increase equitable division of time and labor on agriculture activities include –

- investing in technologies (e.g., drum seeders, treadle pumps, drying racks, and lighter tools) to reduce women's workload and offer other benefits, such as improved soil fertility
- increasing men's labor contribution to caregiving and to crop, livestock, and household tasks traditionally carried out by women

Box 5: Joint Responsibility for Care

The Mwanzo Bora Feed the Future Program in Tanzania outlined ideal nutrition “we” behaviors, including parents and grandparents through multichannel interventions that increased social expectations for all family members (especially mothers, fathers, and grandmothers) to unite around the first 1,000 days of maternal and child nutrition. It used terminology familiar to the farming family. For example, “We help ‘sprout’s mama’ [the mother of a baby] have more time to rest, eat, and breastfeed,” and “We discuss and decide together about increasing quantity and diversity of nutritious foods for Mama and our ‘seed’ [the baby in the womb], ‘sprout’ (0–6 month child), ‘bud’ (6–12 month child), and ‘flower’ (12–24 month child).” (Clemmons, 2013)

The [*Focus on Families and Culture: A Guide for Conducting a Participatory Assessment on Maternal and Child Nutrition*](#) is a resource for understanding family roles.

CONCLUSION

Women's labor plays a significant role in agriculture, the dominant livelihood in rural communities in low- and middle-income countries (Palacios-Lopez, Christiaensen, & Kilic, 2015). Activities need to ensure that women have more equitable access to assets, services, and income. When they receive more support at home and have safe places to work, women can participate more fully in economic activities. To ensure these issues are understood and addressed in program design and implementation, gender assessments must examine specific roles and responsibilities across households and communities. These assessments serve to identify opportunities for making time, labor, access to and control over income, and access to assets and markets more safe and equitable among men and women. If men's and women's roles, responsibilities, and workload in the food system and the household are adequately considered in activity design and implementation, agricultural interventions can mitigate risk, support appropriate trade-offs, and have a more positive impact on nutrition.

This technical brief will be periodically updated. Comments from readers are welcome, especially comments to help clarify the information provided or where additional information may be useful. (Last updated July 2017.)

ADDITIONAL RESOURCES

Henderson, J. (2016). Introductory workshop on integrating gender and nutrition within agricultural extension services: facilitator's guide. Version 2. [PDF Document]. United States Agency for International Development (USAID) and US Government Feed the Future Integrating Gender and Nutrition within Extension and Advisory Services (INGENAES) Project. Available at [https://agrilinks.org/sites/default/files/resource/files/ING%20Training%20\(2016\)%20Gender%20and%20Nutrition%20Facilitator's%20Guide%20\(Henderson\).pdf](https://agrilinks.org/sites/default/files/resource/files/ING%20Training%20(2016)%20Gender%20and%20Nutrition%20Facilitator's%20Guide%20(Henderson).pdf)

LEO Project. (2016). [Cultivating women's empowerment: stories from Feed the Future 2011–2015](#). Washington, D.C.: USAID Leveraging Economic Opportunities (LEO) Project.

USAID. (2010). [Tips for integrating gender into USAID agriculture sector solicitations](#). Washington, D.C.: USAID.

USAID ADS. (2010). [Guide to gender integration and analysis: additional help for ADS chapters 201 and 203](#). The Automated Directives System (ADS). Washington, D.C.: USAID.

USAID ADS. 2013. "[ADS Chapter 205: Integrating Gender Equality and Female Empowerment in USAID's Program Cycle](#)." The Automated Directives System (ADS). Washington, D.C.: USAID.

REFERENCES

Ali, D. A., Deininger, K., & Goldstein, M. (2014). Environmental and gender impacts of land tenure regularization in Africa: pilot evidence from Rwanda." *Journal of Development Economics* 110: 262–75. doi:10.1016/j.jdeveco.2013.12.009.

Allendorf, K. (2007). Do women's land rights promote empowerment and child health in Nepal? *World Development* 35 (11): 1975–88. doi:10.1016/j.worlddev.2006.12.005.

Burke, E. (2013, May 13). Boys in save the children pilot program alter their views of girls in rural Egypt, demonstrate support for breaking social barriers. Save the Children. Retrieved from <http://www.savethechildren.org/site/apps/nlnet/content2.aspx?c=8rKLIXMGlpI4E&b=8486803&ct=13130175>

- Carney, D. (1998). Sustainable rural livelihoods: what contribution can we make?" Paper presented at Natural Resources Advisers' Conference, July. London: Department for International Development.
- Clemmons, L. (2013, May). The Siku 1000 kit for parents and CHWS and the Happy Family Diet Diversity Kit for farmers and agricultural extension officers [Powerpoint slides]. Presented at the Multi-Media Nutrition Social and Behavior Change Communication, Tanzania. USAID/Mwanzo Bora Nutrition Program. Retrieved from <https://www.slideshare.net/LydiaClemmonsMPHPhD/presentation-tanzania-nutrition-sbcc-kits-the-manoff-group-tfnc-and-counsenuth-mwanzo-bora-nutrition-program-final-for-posting>
- Clemmons, L. (2015, Sept. 22). Understanding and facilitating gender transformation for improved health, nutrition and education outcomes: highlights of SBCC research and design approaches focusing on gender identities, roles and relationships in families and peer groups [PDF document]. Presented at the HC3 Innovation Webinar on Gender Transformative Approaches. Retrieved from <http://healthcommcapacity.org/wp-content/uploads/2015/09/LydiaClemmonspresentation.pdf>
- Coleman, I. (2011). Women and the global economy. *Yale Journal of International Affairs* 6 (1): 25–31.
- Crosby, E., Llosa, L., Miro Quesada, M., Carrillo, C., & Gotuzzo, E. (1984). Hematologic changes in brucellosis. *Journal of Infectious Diseases* 150 (3): 419–24.
- Deininger, K., Ali, D. A., & Alemu, T. (2011). Impacts of land certification on tenure security, investment, and land market participation: evidence from Ethiopia. *Land Economics* 87 (2): 312–34. doi:10.3368/le.87.2.312.
- Dlott, C., & O'Bryan, J. (2015, June). Sylvia ventures traces growth of mobile money in Northern Ghana. *USAID FrontLines: Science, Innovation and Partnerships*. Retrieved from <https://www.usaid.gov/news-information/frontlines/science-technology-innovation-and-partnerships/sylvia-ventures-traces>
- Food and Agricultural Organization (FAO). (2011). Women in agriculture: closing the gender gap for development. The State of Food and Agriculture 2010–2011. Rome: FAO.
- Gajadhar, A. (2015). *Foodborne Parasites in the Food Supply Web Occurrence and Control*. Cambridge, U.K.: Woodhead Publishing.
- Giovarelli, R., Wamalwa, B., & Hannay, L. (2013). Land tenure, property rights, and gender: challenges and approaches for strengthening women's land tenure and property rights. USAID Issue Brief. Washington, D.C.: USAID. Retrieved from <https://www.land-links.org/issue-brief/land-tenure-property-rights-and-gender/>
- Grace, D., Roesel, K., Kang'ethe, E., Bonfoh, B., & Theis, S. (2015). Gender roles and food safety in 20 informal livestock and fish value chains. IFPRI Discussion Paper 01489. Washington, D.C.: International Food Policy Research Institute (IFPRI) and CGIAR Research Program on Agriculture for Nutrition and Health.
- Herforth, A., Jones, A., & Pinstrip-Andersen, P. (2012). Prioritizing nutrition in agriculture and rural development: guiding principles for operational investments. HNP Discussion Paper. Washington, D.C.: International Bank for Reconstruction and Development/World Bank.
- Johnston, D., Stevano, S., Malapit, H., Hull, E., & Kadiyala, S. (2015). Agriculture, gendered time use, and nutritional outcomes. A Systematic Review IFPRI Discussion Paper 01456. Washington, D.C.: International Food Policy Research Institute (IFPRI) and CGIAR Research Program on Agriculture for Nutrition and Health.
- Kadiyala, S., Harris, J., Headey, D., Yosef, S., & Gillespie, S. (2014). Agriculture and nutrition in India: mapping evidence to pathways: agriculture-nutrition pathways in India. *Annals of the New York Academy of Sciences* 1331 (1): 43–56. doi:10.1111/nyas.12477.
- Lancet. (2013). Executive summary. The Lancet Maternal and Child Nutrition Series. *The Lancet Global Health* 382 (9890).

- LEO Project. (2016). Ensuring escapes from poverty are sustained in rural Bangladesh. *LEO Report* no. 32. Washington, D.C.: USAID Leveraging Economic Opportunities (LEO) Project.
- Malapit, H. J., Sproule, K., Kovarik, C., Meinzen-Dick, R., Quisumbing, A., Ramzan, F., Hogue, E., & Alkire, S. (2014). Measuring progress toward empowerment: women's empowerment in agriculture index. *Baseline Report*. Washington, D.C.: International Food Policy Research Institute (IFPRI).
- Manfre, C., Rubin, D., Allen, A., Summerfield, G., Colverson, K., Akeredolu, M., & MEAS Project. (2013). Reducing the gender gap in agricultural extension and advisory services: how to find the best fit for men and women farmers. *MEAS Discussion Paper 2*. Urbana, I.L.: MEAS Project/USAID. Retrieved from <http://www.culturalpractice.com/wp-content/uploads/2013/04/3-2012-39.pdf>.
- Markel, E., Hess, R., & Loftin, H. (2015). Making the business case: women's economic empowerment in market systems development. *LEO Report* no. 11. Washington, D.C.: USAID Leveraging Economic Opportunities (LEO) Project.
- Mayer, A. (2015). Potential for nutrition-sensitive conservation agriculture in Zambia: final report of a study on the potential of conservation agriculture to improve nutrition. Dublin: Concern Worldwide.
- Mbuya, M. N. N., & Humphrey, J. H. (2016). Preventing environmental enteric dysfunction through improved water, sanitation and hygiene: an opportunity for stunting reduction in developing countries: the impoverished gut and stunting reduction. *Maternal & Child Nutrition* 12: 106–20. doi:10.1111/mcn.12220.
- McKenzie, D. (2012, June 12). Dads and development. World Bank. Retrieved from <http://blogs.worldbank.org/impactevaluations/dads-and-development>
- Mukuria, A. G., Martin, S.L., Egondi, T., Bingham, A., and Thuita, F.M. (2016). Role of social support in improving infant feeding practices in Western Kenya: a quasi-experimental study. *Global Health: Science and Practice* 4 (1): 55–72. doi:10.9745/GHSP-D-15-00197.
- Palacios-Lopez, A., Christiaensen, L., and Kilic, T. (2015). How much of the labor in African agriculture is provided by women?" Policy Research Working Paper. Washington, D.C.: World Bank Group.
- Rahman, M. M., Saima, U., & Goni, M. A. (2015). Impact of maternal household decision-making autonomy on child nutritional status in Bangladesh. *Asia-Pacific Journal of Public Health* 27 (5): 509–20. doi:10.1177/1010539514568710.
- Ruel, M. T., & Alderman, H. (2013). Nutrition-sensitive interventions and programmes: how can they help to accelerate progress in improving maternal and child nutrition? *The Lancet* 382 (9891): 536–51. doi:10.1016/S0140-6736(13)60843-0.
- Satterly, A. (2016). The simple intervention that increases women's empowerment: when husbands and wives participate in farmer training programs together, the whole household benefits. TechnoServe. Retrieved from <http://www.technoserve.org/blog/the-simple-intervention-that-increases-womens-empowerment>.
- Smith, L. C., Ramakrishnan, U., Ndiaye, A., Haddad, L., & Reynaldo, M. (2003). The importance of women's status for child nutrition in developing countries. *IFPRI Research Report 131*. Washington, D.C.: International Food Policy Research Institute (IFPRI).
- Strengthening Partnerships, Results, and Innovations in Nutrition Globally (SPRING). (2014a). Linking agriculture and nutrition: a guide to context assessment tools. Arlington, V.A.: USAID/ SPRING Project.
- SPRING. (2014b). Understanding the women's empowerment pathway. Arlington, V.A.: USAID/ SPRING Project.

- Spring, A. (1995). *Agricultural development and gender issues in Malawi*. Lanham, M.D.: University Press of America.
- Turner, P. C.. (2013). The molecular epidemiology of chronic aflatoxin driven impaired child growth.” *Scientifica* 2013: 152879. doi:10.1155/2013/152879.
- United Nations Children’s Fund (UNICEF). (2011). “Gender Influences on Child Survival, Health and Nutrition: A Narrative Review.” New York: UNICEF.
- United States Agency for International Development (USAID). (2012). [Gender equality and female empowerment policy: USAID policy](#). Washington, D.C.: USAID.
- USAID. (2015a). [Feed the Future learning agenda literature review: improved gender integration and women’s empowerment](#). Washington, D.C.: USAID and Feed the Future.
- USAID. (2015b). [Nutrition-sensitive agriculture: nutrient-rich value chain](#). Multi-Sectoral Nutrition Strategy 2014-2025 Technical Guidance Brief. Washington, D.C.: USAID
- USAID.(2016). [Nutrition-sensitive agriculture: applying the income pathway](#). Multi-Sectoral Nutrition Strategy 2014-2025 Technical Guidance Brief. Washington, D.C.: USAID.
- van den Bold, M., Dillon, A., Olney, D., Ouedraogo, M., Pedehombga, A., & Quisumbing, A.(2015). Can integrated agriculture-nutrition programmes change gender norms on land and asset ownership? Evidence from Burkina Faso. *Journal of Development Studies* 51 (9): 1155–74. doi:10.1080/00220388.2015.1036036.
- Webb, P. (2013). *Impact pathways from agricultural research to improved nutrition and health*. Geneva: FAO and WHO.
- Yoong, J., Rabinovich, L., &Diepeveen, S. (2012). The impact of economic resource transfers to women versus men: a systematic review. *Technical Report*. London: EPPI-Centre, Social Science Research Unit, Institute of Education, University of London.