

# Intersections

MCC theory & practice quarterly

Winter 2017

Volume 5, Issue 1

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## Nutrition: more than just food

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Nutrition and malnutrition are often viewed as technical matters of food consumption. Are we eating the right amount of food? Are we eating the right kinds of food to get the vitamins and minerals our bodies need? This technical view of nutrition, however, misses many of the potential barriers to getting the right amounts of the right kinds of foods. In doing so, it also obscures opportunities to address the cultural and social barriers to improve nutrition. Authors in this issue of *Intersections* explore ways to expand our understanding of nutrition in order to broaden opportunities for improving nutrition practices and outcomes.

Although much nutrition programming still emphasizes trainings on dietary diversity or increased access to food, the idea that strong nutrition programs require a broad approach is not a new one. In the 1990s, UNICEF developed a three-layer framework of factors that affect good nutrition. At the individual level, malnutrition can be caused by immediate factors, such as lack of food or inadequate dietary diversity. At the household and community level, underlying factors like child care practices, income poverty or an unhealthy environment can also lead to malnutrition. At the societal level, social, cultural, economic and political factors contribute to individual and household willingness and ability to practice good nutrition. This framework not only expands the picture of barriers to good nutrition beyond a technical question of calories and vitamins: it also broadens the scope of nutrition interventions. Nutrition programming can work from any of these levels, although, as we see in the articles below, work that addresses barriers to good nutrition at a variety of levels has the most potential to impact nutrition positively.

In this issue, we seek to look at how issues of culture, gender, household power dynamics and a changing environment contribute to malnutrition. Contributors from Nepal, Bangladesh, Burkina Faso and Canada outline contextually appropriate approaches for combatting malnutrition at different levels. While these authors write from diverse contexts, a commonality emerges from their articles, namely, the importance of local knowledge of the social and cultural context and strong community relationships in developing relevant nutrition interventions.

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## Addressing cultural barriers to nutrition in Nepal

In the Nepali context, household access to sufficient food does not ensure that all household members are well-nourished. Cultural beliefs about food consumption can lead to low nutritional status, particularly for highly-sensitive groups such as pregnant and lactating women and young children. Deep-rooted beliefs about food can present barriers that inhibit adoption of new, more nutritious food consumption practices. These barriers are in turn compounded by low levels of formal education in rural areas of Nepal and by strong hierarchies in families in which older, more traditionally-minded family members make decisions about food consumption in the household. This article explores the importance of engaging multiple stakeholders within the household in order to change cultural perspectives on nutrition.

One example of a common cultural practice that affects nutrition in Nepal is the categorization of foods into ‘hot’ or ‘cold’. These categorizations, unrelated to the physical temperature of food, reflect perceptions of how foods will affect the body after consumption. During critical periods such as pregnancy, lactation and illness, it is common practice to avoid eating foods classified as ‘cold’ in order to protect the body in its vulnerable state. For example, pregnant women may be warned to avoid eating certain vitamin-rich fruits and vegetables like papaya or spinach because these foods are considered cold.

Other cultural practices that affect nutrition may affect various household members differently. Baby boys are commonly exclusively breastfed until six months of age, while baby girls are generally offered their first solid food earlier, at five months of age. In some cultural groups, women family members eat meals last, after everyone else in the family has had their fill. Ultimately, these practices can contribute to poorer health status, including anemia and malnutrition for children under three and for women during pregnancy and lactation.

Lack of nutrition knowledge is the main reason for the persistence of traditions that negatively influence nutrition status in the community. In order to address this situation, the Rural Institution for Community Development (RICOD) has been disseminating appropriate nutrition knowledge and skills in rural communities of the southern Lalitpur district. In these trainings RICOD raised awareness about effective nutrition practices aimed not only at mothers of young children and pregnant women but also at those who traditionally hold decision-making power in their households, namely, the women’s in-laws and husbands. In order to ensure that such trainings, which aimed to change traditional practice, were also culturally sensitive, RICOD’s staff focused on providing general nutritional advice, such as counseling pregnant women to consume diets rich in vitamins, rather than targeting and criticizing specific cultural practices, like avoiding green leafy vegetables (a ‘cold’ yet vitamin-rich food) during pregnancy.

Trainings generally targeted women with young children by teaching an in-depth nutrition curriculum in mothers’ groups and then reviewing and doing refresher trainings on that curriculum. Mothers-in-law were also often part of these groups, so these workshops included more powerful players in household decision-making. Additionally, RICOD organized

workshops for men in the targeted households, because decisions in Nepal about buying food and about agricultural plans are traditionally made by male heads-of-household, including fathers-in-law and husbands of women with young children. Therefore, men’s understanding was crucial for households to start acting on new nutrition knowledge. RICOD also promoted learning and sharing opportunities between women and men on the importance of nutrition for women and children during vital periods. These meetings aimed to lower cultural barriers to acting on good nutrition knowledge.

More recently, RICOD organized nutrition awareness trainings for school-aged adolescents (men and women) to provide knowledge to younger generations. Not only are the nutrition facts important for these adolescents to know as future parents, these young men and women also tend to be well-placed to disseminate the information to their parents and neighbors.

In addition to teaching new information, RICOD recognized the importance of peer education in changing traditional practice. To promote learning and sharing opportunities among women, RICOD worked with existing mothers’ groups linked to local health posts to strengthen their functioning. Through these meetings, participants exchanged ideas and shared knowledge about nutrition and health. Participants then also shared the new knowledge they gained from the groups with their neighbors and relatives. RICOD also promoted kitchen gardening and empowered women by providing access to capital via revolving loans administered by these women’s groups. Kitchen gardens increased women’s access to homegrown vegetables while revolving loans stimulated small enterprises that in turn generated additional income for households to buy nutritious food.

Besides promoting peer education through women’s groups, RICOD provided in-depth training to volunteer peer educators on good nutrition practices. Peer educators are youth residing in the local community who regularly visit targeted households to encourage them to practice good eating habits. Additionally, some peer educators attend the monthly mothers’ group meetings, where they lead discussions on nutrition-related topics.

RICOD’s work has led to important learnings for future nutrition programs. In particular, understanding traditional beliefs and eating habits is essential for knowing how to promote improved nutrition practices. Broad dissemination of nutrition information should take place in order to teach many people within a community. RICOD also found that working with more than just one household member was a key to healthy changes in traditional practices. By training both men and women and both younger and older generations on the importance of nutrition and good nutrition practice, RICOD was more effective in creating change within households. Not all of this change came easily. Changing older generations’ traditional beliefs was a challenge, since it takes a long time to change traditional practice and behavior. Even now, not everyone has changed their traditional practices. RICOD’s work and encouraging results demonstrate, though, that exposure to better eating habits and continuous follow-up can lead to changed knowledge, skills and practice.

Additionally, peer education and coordination by non-governmental organizations like RICOD with other health providers, like Nepal’s Female Community Health Volunteers, are important so that people

“Understanding traditional beliefs and eating habits is essential for knowing how to promote improved nutrition practices.”

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regularly hear the same message about good nutrition practice from multiple sources. Mobilization of local community members to disseminate nutrition knowledge can help lower cultural barriers through peer education and regular follow up. That regularity is key to changing long-held practices. Changing tradition is a slow process, but new knowledge and understanding can over time lead to positive changes in nutritional practice and health.

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## Mother's education as a predictor of child malnutrition in Nepal

Many people assume that household food insecurity is the main driving force behind childhood malnutrition and stunting. Simply put, the common assumption is that children are underweight because their families lack access to sufficient amounts of healthy food. However, a research study conducted by the Brethren in Community Welfare Society (BICWS) in the southern plains region of Nepal on the socioeconomic and cultural barriers to good nutrition found a more complicated picture. The study's findings imply that while improving household food security may be necessary, it alone is insufficient to improve the nutritional status of children. The results suggest that malnutrition and stunting in this context are the result of interconnecting socioeconomic, educational and health-care factors. This study, alongside other research, suggests that an integrated strategy that improves the overall socioeconomic well-being of families, maternal education and knowledge of infant and young child feeding practices will be more effective and sustainable in improving the nutrition of children living in poverty.

BICWS operates as the service arm of the Brethren in Christ church conference in Nepal, based in the southeastern city of Biratnagar. Since many families in BICWS' working area are rural landless households facing malnutrition, BICWS and MCC worked together to develop a food security project funded by MCC's account at the Foods Resource Bank that included supplementary food for malnourished children as one of the project components, coupled with kitchen gardening and support for commercial vegetable and fish production.

Despite the short-term effectiveness of the supplementary food seen in many of the project participants, some malnourished children showed inadequate growth over the year of nutrition support, necessitating their re-enrollment for another year. BICWS conducted a research project in 2015 aimed at discovering the socioeconomic and cultural barriers and risk factors to healthy childhood development and recovery. The study involved in-depth interviews with participant households whose children did not recover from malnutrition and with participant households whose children recovered quickly.

The results of the study suggest that the initial hypothesis of food insecurity as the main driving force behind childhood malnutrition holds true, though only for the most extreme cases of households experiencing poverty and debt. It stands to reason that significant debt and related financial insecurity are major risk factors for childhood malnutrition. Families burdened by large debt payments have little or no financial

security during periods of stressors, such as strikes, illnesses or disasters. In 2015 Nepal underwent a number of concurrent stressors, including a devastating earthquake, nationwide political unrest, strikes and an economic blockade from India. Health was one of the first things to deteriorate. Instead of a significant drop in caloric intake, affected families chose instead to drop many types of nutritious foods while keeping the amount of food consumed the same. Lack of dietary diversity contributes to malnutrition. While 80% of interviewed families stated that they normally had enough money for food, only 36% of families consumed the minimum daily nutrition requirements, showing a large gap between perceived food sufficiency and actual nutrient sufficiency.

For the non-extreme cases of malnutrition, however, the study discovered that the low level of mother's educational attainment was connected with the incidence of malnutrition in children. That is, in families where the mother was more educated, children exhibited fast recovery. Other research projects in Nepal support this finding. This result suggests that women's low educational attainment is linked to community malnutrition and that encouraging education is a strong potential long-term solution.

Nutrition-specific knowledge is also important. The study found that even some educated women lacked knowledge about health care, nutrition and sanitation. Lack of knowledge limited their application of good nutrition practice. However, BICWS found that educated women were more likely to take ownership of supplemental food received and to practice new nutrition skills than women with lower educational levels, despite the fact that both educated and uneducated women demonstrated low levels of nutritional knowledge before the project started. It makes sense that women's education is likely to have an impact on family nutritional status, given the fact that in this community women normally serve as the center of the nuclear family and generally decide on and prepare daily meals. In response to these findings, BICWS has implemented a new strategy aimed at reaching three thousand households with nutritional education, equipping families (in particular women) with the knowledge of what nutritional strategies contribute to healthy development and overall well-being.

The BICWS research suggests that women's education can be a cushion against stressors that lead to poverty and malnutrition. Women's education and empowerment must be emphasized, especially as women in rural Nepal are often marginalized, with limited access to education and authority. Any long-term plan for community improvement should consider increasing women's access to education as a key strategy. At the very minimum, this study suggests that nutritional education should be emphasized in any population suffering from malnutrition.

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## A holistic approach to sustainable nutrition

The term *monga* describes seasonal food insecurity that affects vulnerable landless labourers in northern Bangladesh as a result of decreased employment opportunities for the rural poor between rice planting and

“Women's education can be a cushion against stressors that lead to poverty and malnutrition.”

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harvesting seasons. The *monga* season also negatively affects household nutrition. During this time, households generally reduce food consumption to one meal or less per day, with a corresponding decline in diet quality. People consume insufficient quantities of milk, eggs and vegetables. Most households report using credit to purchase food. Poor and extremely poor households report that they experience eight to ten months of food insecurity annually. In this article we examine learnings from a ten-year MCC initiative in northern Bangladesh to improve household food security and nutrition through regular seasonal food transfers, livestock promotion, connections to markets and nutrition education.

In 2006, MCC Bangladesh determined that most residents in its working area in Nilphamari District, Dimla Upazila in northern Bangladesh were highly affected by the *monga* season. Without work opportunities, household income decreased at a time of decreased food availability and increased food prices. Affected households coped by borrowing money, selling their labour in advance at a devalued rate, taking out loans with high interest rates and sending household members to urban areas in search of work. Limited non-farm livelihood options, coupled with cropping cycles, landlessness and a remote geographic location contributed to the ongoing food insecurity problem of the *monga* season in this part of Bangladesh.

A holistic approach to promote sustainable alternative livelihood options was required to combat such a deeply rooted and persistent problem. To address this situation, MCC Bangladesh, with funding from MCC's account at the Canadian Foodgrains Bank (CFGF), implemented the Monga Mitigation Project from 2006 to 2016, working with 2,500 households. The project focused on increasing households' livestock assets and improving participants' knowledge and practice of livestock management. MCC chose this approach because participant households had little or no agricultural land, but did possess some experience with livestock management. The first phase of the project experimented with a variety of asset transfers, from chickens and goats to different cow breeds. Through action research, we found that hybrid dairy cows were the most appropriate asset for promotion, given the good market for milk in Bangladesh. The project also worked to educate participants about caring for these livestock and to establish complementary services through the training of veterinary service providers. While these services were free at first, over the course of the project participants gradually took on the costs of these services themselves. MCC also encouraged participants to access government services and to form good relationships with other private service providers like para-vets and fodder stores.

Scarcity of fodder and high prices of cattle feed made it difficult for poor families to bear the feeding expenses of rearing cattle. At the beginning of the project, the project only supported its targeted participants leasing land for fodder cultivation, including Napier grass. However, when most of the land owners did not renew the land leases, MCC shifted focus to supporting other community members involved in selling and marketing fodder grass in order to increase the availability of fodder for participants' cows. By the end of the project, the area of fodder land had expanded through newly created businesses in the project area and participants reported easier access to fodder for their livestock.

The *monga* project also focused on increasing the long-term sustainability and productivity of assets by developing value chain linkages. The severe

milk shortage in Bangladesh, coupled with high levels of unmet demand from both consumers and dairy processors, made dairy cows a highly appropriate asset for promotion. Therefore, in its second phase, the *monga* project worked to develop linkages with milk chillers so that the participants could sell their milk upmarket and increase their income. Although this proved challenging to implement, ultimately it increased income among participants. Connections with milk chillers meant that milk could be sold in the city for a higher price rather than just in the local community.

Besides long-term support aimed at increasing household income, the project also addressed immediate nutritional needs during the *monga* season. For instance, MCC provided lentils during the *monga* period to meet basic protein nutritional requirements and distributed fruit saplings and vegetable seeds for planting, the produce of which could be harvested during the *monga* season. Participant households received training in improved nutrition practices, including complementary feeding, exclusive breastfeeding and improved dietary diversification.

The project did encounter problems due to high poverty and illiteracy rates among participants. Given the acute seasonal food insecurity faced by participants, there was temptation to liquidate assets, and providing technical knowledge was difficult at times. To overcome these issues, MCC staff continuously encouraged participants to consider the ultimate goal of increasing their assets over the long-term. MCC also gave high priority to incorporating participants' perspectives of community needs when designing and implementing the project. For example, MCC scheduled trainings, especially targeted at women, outside of planting and harvesting periods when participants could join. MCC staff reported back to participants on the project's progress, with project activities modified based on participant feedback. So, for example, after one feedback loop MCC increased the quality of mustard oil cake distributed for livestock feed.

After ten years of MCC implementing this project, participants who used to be *monga*-affected now have assets that increase their self-confidence, income and food security, leading to improved household nutrition. Income from livestock production has improved participants' daily life and economic status: the project end survey showed an average 300% increase in income over the income levels recorded in the baseline survey. Income sources include selling vegetables, livestock and livestock products like milk and dried dung for fuel. Improved income has had positive effects, including on participant households' access to education, medical treatment and even land for agriculture and housing.

More secure livelihoods and earning opportunities have also improved households' stable access to food, ultimately improving nutrition. The project's final survey found zero months of food insecurity, compared with eight to ten months of food insecurity before the project started. Additionally, participants reported notable improvements in eating more food (meals and calories) of better quality, including higher consumption rates of a protein-rich diet. The integrated approach of diversifying livelihoods to increase income, increasing homestead production and providing nutrition training and continual motivation has had a positive impact on household nutrition.

Additionally, the project targeted women as direct participants in trainings and as legal livestock asset holders. Women were targeted because they

“ More secure livelihoods and earning opportunities have improved households' stable access to food, ultimately improving nutrition.”



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are highly invested in care for their families, so they were considered more likely to use project inputs for the long-term good of the household. This targeting improved women's power in household decision-making and increased their control over resources.

The project always considered the sustainability of community development by working to improve participant capacity to rear livestock without project support. MCC trained participants to cope with challenges as they arose, gradually withdrew project support and linked participants with alternate sources of most essential project services: these strategies prepared project participants to continue rearing livestock when project services ended. The project also worked to set up strong bonds within the community by implementing events designed to help community members support each other.

Providing encouragement to participants, appropriate selection of participants and holistic nurturing of assets and services to increase sustainable income were key to overcoming the persistence of the *monga* season. Long-term planning and holistic intervention are necessary to bring about sustainable changes in any sector. Rather than simply distributing livestock, this project supported value chain linkages and complementary service to farmers and families to sustain new assets. All of the project activities worked together to help improve participants' food security and nutrition and develop new agricultural livelihoods to sustain those positive changes.

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## Engaging students for family food security and nutrition

As a small country with a large and rapidly growing population, Bangladesh has to make the most of its fast-disappearing agricultural land. Although the government of Bangladesh prioritizes modern and sustainable agricultural technologies to maximize crop production, many farmers' beliefs in traditional agriculture methods, despite poor production, make them resistant to using new practices that improve production. Resistance to using improved agricultural practices that promote higher production has been a significant factor in food insufficiency and poor nutrition in rural Bangladesh, especially among land-poor farmers. This article explores how MCC Bangladesh has worked with young students to increase the adoption of new, more productive, agricultural practices.

MCC assists families experiencing poverty to increase their income from agriculture and livestock production and their access to diversified food in order to improve food security and nutrition. Encouraging farmers to shift from traditional techniques to new agricultural practices is not easy, especially among those who are older and have lower levels of formal education. MCC Bangladesh has found that young and literate farmers are generally more willing to try new techniques.

In particular, students are often willing to adopt new ideas. In Bangladesh, students are also often part of household decision-making. Despite limited financial resources, most poor families try hard to send their children to

school. Families hope that, after gaining an education, their children will be able to improve the family's financial status. For this reason, families sometimes depend on their children to make household decisions even while the children are still studying. This cultural context led MCC Bangladesh to involve students in a food security project focused on using modern agricultural techniques for improved family food security and nutrition.

Under its Research and Extension Activity Partners (REAP) project which ran from 2010 to 2016, MCC Bangladesh worked in Chattra Union, Pirganj Upazila in Rangpur district, Bangladesh. A total of 900 students in grade eight from six different secondary schools were selected as primary participants. These students took part in the project up to grade ten. Each project year, new students were selected to join, with priority given to students from households experiencing poverty. These students received training in different agricultural technologies at school outside of regular class time, with technical support provided by MCC Bangladesh staff. The project also trained school teachers in agricultural technologies to improve their understanding of the project and to equip them to support their students.

At home, students discussed what they learned about these new technologies with their parents and other family members. When their parents expressed interest, MCC Bangladesh staff arranged for demonstrations of different agricultural technologies at their homestead. These agricultural demonstrations focused on best practices for rearing milk cows and goats, calf fattening, raising chickens, fruit tree cultivation, integrated pest management and making different types of compost for homestead gardening. Each household worked with at least two or three new techniques, with the entire family involved. MCC Bangladesh staff and the school teachers frequently visited participant students' homes to monitor and discuss the new agricultural activities.

Students' motivation encouraged households to focus their work on these new agricultural activities. Significant changes to nutrition occurred among the selected farm families over the project period. Families' diversified agricultural activities provided them with more fresh vegetables of greater variety, more eggs and meat, more milk and more income from new agricultural activities like cattle rearing. With the extra income, families could afford to diversify their diets while meeting other family needs as well.

Some students have been particularly successful in generating income through the new agricultural activities. For example, one young woman in Sokhipur village received training in vegetable cultivation, cattle and goat rearing and compost production. MCC also provided her material support so that she could start raising goats and making compost. Now, besides being a respected source of agricultural knowledge in her community, she sells goats and compost to pay tuition fees for herself and her three sisters and has further expanded her family's livelihoods by purchasing two cows.

In addition to agricultural work, the REAP project also provided peace education to targeted students and parents. These trainings, alongside other community peacebuilding work, helped ensure that conflicts that might arise from students teaching parents and encouraging new practices at home could be peaceably mediated and resolved.

“ The integrated approach of diversifying livelihoods to increase income, increasing homestead production and providing nutrition training and continual motivation produced positive nutrition changes.”

Learn more

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Through this project, MCC Bangladesh learned that involving students in extension work to diversify agricultural activities addressed the challenge of motivating farmers to adopt new techniques. Through the work of students to improve families' skills and capacity, parents were motivated to try modern agricultural practices, while students gained additional skills and knowledge. Ultimately, the combination of approaching parents through students and setting up demonstration plots on families' own homesteads ensured sustainable changes to food security and nutrition due to changes in participants' knowledge, attitude and practice.

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## Improving access to fresh food in Labrador

Labrador is much like the rest of Canada's north. Indigenous peoples have hunted, fished and raised their families on these lands for generations. The land has suffered from the impacts of colonization, as have its people. Resource extraction has changed the face of the land. Rivers have been diverted, habitat has been lost, causing a shift in migratory patterns of the caribou, and increased levels of methylmercury continue to affect fish and sea life in the Mishtashipu, now officially called the Churchill River, more than 40 years after the construction of the first hydroelectric project. Depletion of the caribou herds has resulted in a complete hunting ban and the government also places restrictions on hunting migratory birds and fish. In Labrador, gaining access to fresh, healthy and culturally appropriate food is more and more difficult each year. Yet in face of these challenges indigenous communities mobilize to address food and nutrition needs.

"No more than one a week to eat from the river," Innu elder, Elizabeth Penashue, told me as we sat next to the Mishtashipu and talked about the pollution in the river. Only one rusted sign outside the town of Happy Valley-Goose Bay warns people to limit consumption of fish caught in the river due to pollution. Penashue thinks there should be more warnings.

Access to quality, fresh food is a challenge in Labrador. Because of the area's remoteness, shipping is expensive and can be slow. Walking into grocery stores in the winter and finding bare shelves is not unusual. Depending on the weather, that happens in the coastal communities throughout the summer, too. The cost of food is so high that people often eat cheaper, less nutritious and more processed foods just to help make ends meet.

The Community Food Hub, based in Happy Valley-Goose Bay, began in 2008 as a community project initiated by the local health authority and has grown into its own non-profit organization offering food education and programming in Labrador. An estimated 80% of the people served by the Community Food Hub identify as indigenous. The hub aims to address the community's lack of healthy and culturally appropriate foods. MCC began a formal partnership with the Community Food Hub in 2012, when the food hub's need for a part-time food security coordinator to complement and focus volunteer efforts became evident.

Currently the Community Food Hub facilitates several different programs. The hub's children's garden, in which an average of 190 students from

two schools participate annually, is one of the hub's most successful programs. The garden offers an opportunity for students in grades 4 and 5 to plant, care for, harvest and cook their own foods. Students have tried new vegetables, participated in the hard work of garden maintenance and cared for plants at home. Parents are also involved, and many have reported eating new foods and growing vegetables at home as a result of the program.

Community kitchens are another way of engaging the community. Focusing on low income families, the community kitchens provide opportunities for men and women to learn how to make low cost, healthy meals with others. Participants cook and eat together, after which they take the ingredients home to replicate the meal for their families. One of the surprising outcomes of this program is the online community-building it has facilitated. Members of the group share recipes, stories and pictures of their creations with one another, encouraging community.

The Community Food Hub works closely with the local agricultural association, ensuring that information about locally grown foods gets into the hands of shoppers. A community outdoor market program was started by the hub in 2013 in cooperation with the town of Happy Valley-Goose Bay and the agricultural association. Farmers were invited every Saturday between July and September to join the market. The market also showcased locally made goods and offered fair trade coffee. Workshops on food preservation and wild food gathering were presented, along with demonstrations and trainings to encourage local gardening. In 2015, the Community Outdoor Market ceased being a program of the hub and continues successfully under the guidance of community volunteers. The hub nevertheless remains engaged with the market, setting up healthy eating and living displays at the market each week.

Initially, the hub began a community freezer project, hoping to provide food from the land gathered by local volunteers, such as fish, wild game and berries, to people who unable to hunt and gather on their own. It started with some exciting donations, like moose and caribou meat. However, due to reduced hunting quotas and people needing to save their catch for their own consumption in the winter, food donations were limited and the project ended. A similar project run by the Nunatsiavut Government is still available for seniors and shut-ins when food is able to be harvested or donated for distribution.

The challenges of food security continue to increase. Today, another large infrastructure project, the Lower Churchill Hydroelectric (or Muskrat Falls) Dam, threatens the health of the waters and way of life for the people who live in central and eastern Labrador. All three indigenous groups in the area (the Nunatsiavut, NunatuKavut and Innu nations), have come together to demand either the clearing of vegetation in the new reservoir in order to reduce imminent methylmercury poisoning and perhaps even to stop the dam completely. While the Community Food Hub is not directly involved in protesting, it does organize educational events to raise awareness about the effects of methylmercury in the local food system.

Food security and nutrition challenges have no easy answer in the North. Increasing access to fresh, local food from community gardens, children's gardens and farmers' markets can generally happen only in July, August and September. Freezing and canning meat and produce can help bridge the gap, but the winter period when food cannot be locally produced

Learn more

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“ In Labrador, gaining access to fresh, healthy and culturally appropriate food is more and more difficult each year.”

is long. Freezing and canning food is also expensive compared to the alternative of buying processed food during the winter months. Long term solutions are needed, but, for now, the Community Food Hub offers a partial solution with its ongoing focus on education to help people learn how to make healthier choices with available resources.

*Dianne Climenhage is an MCC representative for Newfoundland and Labrador, Canada.*

## Promoting local food sources to improve nutrition

In many countries across Africa and Asia, communities use the bark and roots of the hardy *moringa* tree for medicinal purposes. Over the past several years, however, MCC and its partners in Zambia, Kenya, Ethiopia, Burkina Faso, India and Lao PDR have been promoting *moringa* leaves as a readily available, locally sourced and nutrient-rich food that is drought resistant and adaptable to changing climates. This article examines how MCC's main partner organization in Burkina Faso, the Protestant ecumenical social service organization ODE (*Office de Développement des Eglises Evangéliques*), educates Burkinabé about the rich nutritional properties of *moringa* leaves as part of its overarching nutrition strategies in a country facing food insecurity exacerbated by climate change. ODE's experience with promoting *moringa* leaves underscores the importance of looking to nutrient-rich, local food sources adaptable to changing climates in efforts to combat malnutrition.

Food insecurity and malnutrition rates in Burkina Faso are chronically high. The global acute malnutrition rate (GAM) among children under five years of age is 8.2%, while stunting levels stand at 31.5%. High food prices and unpredictable weather can result in drought or flooding, further limiting Burkina Faso's access to food.

Over the past 30 years in Burkina Faso the climate has changed dramatically, making it increasingly difficult for farmers to predict the planting and harvest seasons. These changing climate patterns have in turn contributed (alongside other factors) to acute food insecurity. Arouna Yameogo, responsible for sustainable agriculture projects with ODE, recalls a time when the planting season would begin in June and end in December, resulting in a six month farming season. Today some parts of Burkina Faso see only two or three months of rain per year. Instead of steady, slow rains that nourish and provide moisture to the new crops, torrential storms now flood fields and ruin crops. Intermittent, moderate rains that alternate with a dry season are becoming things of the past. Meanwhile, the Sahel (the semi-arid region south of the Sahara desert) expands steadily southward, encroaching on Burkina Faso.

While these challenges to the agricultural sector exacerbate food insecurity and malnutrition, MCC and ODE see promise in the leaves of the *moringa* tree. Originally from northern India, *moringa* spread to various parts of Asia and Africa over the past thousand years. Nicknamed the "miracle tree" and the "never die" tree, *moringa* thrives in many different countries and varying climates. While *moringa* branches, seeds, pods and roots have been used in traditional remedies for ailments ranging from high blood pressure to stomach pain, the tree has not historically been viewed as a food source. Yet *moringa*, resistant to drought and flood, is able to weather

changing climates, while also bearing the potential to combat malnutrition with its 16 vitamins and minerals and high levels of protein, potassium and calcium.

Yameogo and his colleagues at ODE provide support to farmers cultivating *moringa* to establish nurseries and have distributed *moringa* seedlings purchased from those farmers to hundreds of other farmers. Alongside efforts to promote the cultivation of *moringa*, ODE organizes trainings to educate communities about the nutritional value of *moringa* leaves and cooking demonstrations to show how those leaves can be used in and adapted for traditional dishes. "Moringa has grown in Burkina for quite some time, but people didn't know about it or how to use it," Yameogo explains. "Now we've had trainings to show the different nutritional qualities of *moringa*. It can prevent many sicknesses and can also fight against hunger because it has many vitamins and nutritional qualities. So now in the villages, we train people on the utility of *moringa*, and people use it all the time. We also train women how to make a powder from the leaves to put in porridge or in sauces. People are beginning to understand the importance of *moringa*."

Community education on the use of *moringa* begins with awareness meetings since educating people about *moringa*'s nutritional properties is the first step in achieving wider adoption of *moringa*, with cooking classes showing how *moringa* leaves can be part of a daily, healthy diet. Participants in these trainings are not immediately convinced of *moringa*'s benefits or of its adaptability to local tastes. ODE has found, however, that participants gradually become used to adding *moringa* powder or leaves to everything from sauce to rice and even to eating boiled *moringa* leaves alone like spinach. One participant, for example, mixes *moringa*'s coin-sized leaves right into the peanut sauce she cooks with cabbage and tomatoes and serves over rice or tô, a thick, cornmeal-based mash common to Burkina Faso.

Since ODE began its projects, knowledge about and use of *moringa* have steadily increased in Burkina Faso. Although training and education are necessary to convince farmers that *moringa* is an economically viable crop and to persuade families that *moringa* leaves can be integrated into their diets, *moringa* is quickly becoming a valuable resource in efforts to combat malnutrition, both in Burkina Faso and beyond. Funding from MCC's accounts at the Canadian Foodgrains Bank (CFGB) and the Foods Resource Bank (FRB) has enabled MCC and its partners to expand promotion of *moringa* as a nutrient-rich food source in multiple contexts. So, for example, MCC partners in Kenya and India raise awareness at the village level of *moringa*'s nutritional properties. In Zambia, meanwhile, MCC partners promote *moringa* consumption as part of efforts to strengthen the immune systems of people living with HIV and AIDS. By itself, of course, *moringa* will not solve food insecurity and malnutrition challenges. Yet, as ODE's experience suggests, leaves from the *moringa* tree can play a vital role in addressing malnutrition in contexts in which agriculture is being disrupted by changing climate patterns.

*Lauren Wade was an intern with MCC Burkina Faso in summer 2016. Arouna Yameogo is a project manager at Office de Développement des Eglises Evangéliques.*

Learn more

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“Moringa has grown in Burkina for quite some time, but people didn't know about it or how to use it.”

## Gender- and culture-sensitive nutrition programing

Nutrition programs often target groups most visibly linked to desired nutrition outcomes. For example, since nutrition is key to children's development during their '1000 golden days', mothers with young children or women of childbearing age tend to be targeted to promote good nutrition for infants. As other articles in this issue contend, though, a narrow participant focus may limit the impact of nutrition programs and ignore the role that other family members play. At the same time, looking only at broad, household-level indicators of nutrition may miss different household members' unique vulnerabilities. Nutrition programs are more effective and relevant when they are sensitive to family power dynamics, local practices and culture. This article offers ideas for integrating gender and cultural context into planning, monitoring and evaluating nutrition programs. While these ideas are not exhaustive, they offer a starting point for thinking through gender and cultural issues that affect nutrition.

### Look within the household

Sufficient, nutritious food available at the household level does not ensure that all members will have access to enough food to meet their dietary needs. Intra-household distribution of food, family decision-making systems and cultural practices and taboos mean that the nutritional status of family members within one household may be widely different. As Gurung and Ghimire observe in their article, women in some households in Nepal eat after other family members have had their fill, which can limit their access to preferred foods like meat or vegetables. Looking simply at whether the household unit has enough food would miss this kind of variation in access to nutritious food within the household.

Collecting gender- and age-disaggregated data on diets for each member of the household using tools such as the Household Dietary Diversity Score provides insight into the unique nutrition status of different family members. Alternatively, Lee and Hembrook in their article describe a project in Nepal that has started to collect data on the number of times women in participant households skip meals. Since women eat last in this cultural context, the number of meals skipped by this population will be a more sensitive indicator than the number of times the entire household skips meals.

Disaggregated data may also reveal needs among populations who are not always targeted in nutrition interventions. While pregnant and lactating women and young children are generally known to be vulnerable to malnutrition, other household members, like elderly members or adolescent girls, might also be receiving insufficient food or nutrients for their needs. For example, after the April 2015 earthquake in Nepal, MCC worked with partner organization Shanti Nepal to distribute rations of ready-to-eat food that included nutritious and locally-sourced *chiura* (beaten rice flakes) and roasted lentils. However, while distributing these rations to highly-affected rural households in Dhading district, Shanti Nepal staff realized that young children and elderly people may lack the teeth necessary to eat such hard and crunchy food. They adapted the ration to include easier to eat instant noodles. For subsequent disaster responses, MCC and partners in Nepal have included a nutritious porridge flour mix in the emergency rations intended for young children and elderly people.

### Identify decision-makers and agents of change

When planning projects, analyzing family systems and power dynamics within a household can help identify gatekeepers and potential agents of change. Nutrition programs often focus on health and agriculture activities, but addressing household power dynamics within family relationships and organizing anti-domestic violence activities can also lead to better nutrition outcomes. In Nepal, newly married women traditionally move into their husband's family home and often take on a large portion of household duties. Mothers-in-law make decisions about their daughters-in-law's work and also often have strong ideas about food taboos in pregnancy or for young children.

An MCC-supported project run through partner organization Sansthaगत Bikas Sanjal and implemented by Interdependent Society in Surkhet district facilitates discussions between mothers-in-law and daughters-in-law and between husbands and wives. These discussions encourage shared understandings about good nutrition practices and provide opportunities to discuss family relationships. By encouraging shared knowledge about nutrition and by improving communication, the family members who make household decisions about money, household duties and food can work together toward improving nutrition for all family members. This project has reported that after these discussions mothers-in-law and husbands have started providing support to pregnant and lactating women by recognizing their specific nutrition needs, encouraging health check-ups and reducing their household workload. As noted in the article by Gurung and Ghimire, other projects in Nepal have also successfully engaged male family members to encourage better household nutrition practices.

Some family members may be better able to promote changed household practices than others. As Rahaman and Rahman point out in their article, identifying agents of change within a household, like students in Bangladesh, smoothes the process of change. In this case, project implementers found that parents who were reluctant to try new agricultural techniques themselves were willing to support and learn from their children, which led to diversified livelihoods and diets for participant households. Similarly, Climenhage notes that in Labrador, Canada, the Community Food Hub's children's garden is one of its most successful programs, working through students to promote healthy eating at home. Meanwhile Sarker and Rahman examine in their article how women's heavy investment in the long-term good of the household led the *monga* mitigation project to select women as primary participants in asset transfers and project trainings.

### Decide what to accept

Identifying cultural practices that affect nutrition also requires analysis of when to encourage different practices and when to simply offer alternatives that achieve the same nutrition outcomes. It may be a slow process to change the cultural perception in Nepal that pregnant women should not eat Vitamin A-rich papaya because of fears that it will cause miscarriage. Ultimately it may be more effective to promote carrots or eggs as alternate sources of Vitamin A that do not come with cultural taboos attached. Perhaps a comparable example is the idea that North Americans could consume less red meat if they started eating insects as a healthier and more sustainable protein option. In many cultures, insects

“ A nuanced approach that is sensitive to family power dynamics, local practices and cultural context helps ensure that nutrition programs are relevant and effective.”

“ Addressing household power dynamics within family relationships and organizing anti-domestic violence activities can also lead to better nutrition outcomes.”

Learn more

Madjidian, Dónya S. and Hilde A.J. Bras. "Family, Gender, and Women's Nutritional Status: A Comparison between Two Himalayan Communities in Nepal." *Economic History of Developing Regions* 31/1 (2016): 198-223.

are commonly eaten as snack foods. However, because of many North Americans' revulsion at the thought of eating insects, a nutrition project that promotes beans and legumes as a substitute for red meat is likely to be more successful. Similarly, Wade and Yameogo observe in their article that the success of integrating *moringa* into diets in rural Burkina Faso links with the traditional practice of consuming *moringa* as a healthful medicinal plant and with the project's demonstrations of how it can be adapted into traditional foods.

Gender- and culture-sensitive nutrition programming requires intensive analysis of family systems, intra-household power dynamics and awareness of taboos and cultural practices related to food consumption. Food insecurity affects communities, households and family members in diverse ways, requiring project approaches that recognize and build on the local context in order to address malnutrition successfully. Deep knowledge of the local community's culture, traditions, eating habits and practices is essential and requires careful attention at all stages of a project. Such knowledge is often most accessible to those with close community ties. A community-driven approach that builds on the existing knowledge of local organizations and their relationships with community members can help navigate societal and cultural complexities and ultimately lead to better nutrition outcomes for all people in a community.

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*Intersections: MCC theory and practice quarterly* is published by Mennonite Central Committee's Planning, Learning and Disaster Response Department. Editors are Alain Epp Weaver and Bruce Guenther. Opinions expressed in this newsletter reflect those of the authors and not necessarily those of Mennonite Central Committee.

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ISSN 2376-0893 (print) ISSN 2376-0907 (online)



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