

Nutrition CRSP Scientific Symposium: Agriculture, Food Security and Nutrition in Nepal: Taking Stock and Defining Priorities

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The Global Nutrition Collaborative Research Support Program (Nutrition CRSP)-Asia through its partner, Johns Hopkins Bloomberg School of Public Health, organized a two-day scientific symposium in Kathmandu, Nepal, co-hosted by the Department of Community Medicine and Public Health at the Institute of Medicine (IOM). The Nutrition CRSP is a multidisciplinary research consortium which seeks to determine investments needed in agriculture, health and nutrition, institutional and human capacity development, and program development to achieve large-scale improvements in nutrition outcomes.

The preliminary report of the 2011 Nepal Demographic Health Survey shows an improvement in child nutritional status between 2001 and 2006, with stunting, wasting and underweight prevalence decreasing from 49% to 41%, 31% to 11% and 39 to 29%, respectively [1]. Nonetheless, chronic undernutrition is still widespread, and wide disparities exist across socioeconomic groups and ecological regions, with children from the poorest households and those living in the mountain and hill areas exhibiting the highest levels of stunting.

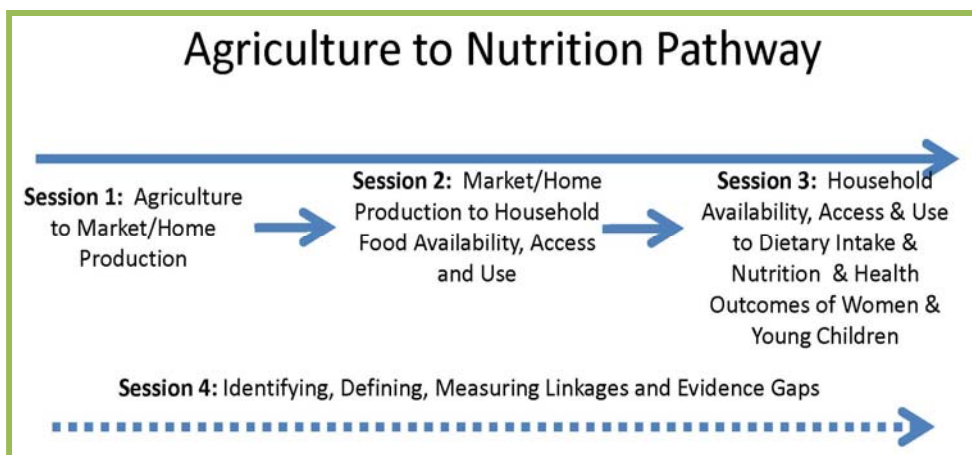
Nepal is one of the poorest countries in South Asia. A high proportion (estimates range from 25%-55%) of its population lives on less than \$1.25/day[2]. More than 80 percent of the population works in the agricultural sector, most of whom work on subsistence-oriented family farms. Households employed in agriculture account for more than three quarters of Nepal's poor. Many of these households were deeply affected by the protracted conflict, drought and other natural disasters. Improvements in agricultural productivity have not maintained pace with population growth, particularly among small landholders and female farmers, the latter constituting more than 60% of the agricultural labor force. In 2009, the World Food Programme reported that 43 of Nepal's 75 districts faced a food deficit, and 23 districts were chronically food insecure. The inability of households to successfully "weather" transitory food supply shocks from drought, flood, market failure, or civil strife can impact their nutritional intake, nutritional status and health.

FAO's report, "Guiding Principles for Linking Agriculture and Nutrition: Synthesis from 10 development institutions," illustrated that the linkage between agriculture face four "main constraints: (i) information on what to do; (ii) how to do it; (iii) how much it will cost (per benefit gained); and (iv) how it will be supported or rewarded." [3] Further, Leroy et al. noted that the impact of multi-sectoral programs focusing on nutrition is limited in 2008[4]. Improved agriculture leading to better household food security has been identified as a fundamental determinant of processes that lead to food security, adequate dietary intake and nutritional status, and health, yet limited empirical evidence exists on the kinds of actions in agriculture that do (or do not) support nutrition and health for impoverished segments of the population or groups passing through vulnerable life stages. Little data exists beyond pilot projects that reveal ways to optimize the production, availability and access of food products that assure dietary diversity among the poor. The pathways that lead from food production to household

food security to improved nutrition are complicated, with multiple determinants. Yet, systems do exist that convey food within and across communities throughout the year, with varied efficiency, quality and impact. It is the connected pathways that we need to understand, measure and classify, and address their modifiable components in order to reduce food insecurity and undernutrition in high-risk geographic areas and socio-economic groups. These represent critical steps towards effective programming.

The intent of the Symposium was to share, understand and assimilate country-relevant evidence about factors which contribute to causal pathways that lead from agriculture to nutrition, in national, regional and local contexts. A national call for abstracts was made to researchers conducting work across these diverse but connected fields to present their work. The event was attended by approximately 140 participants from the scientific, research, program, policymaker and development partner communities.

The Symposium sought to understand, from data relevant to Nepal: (a) aspects of agricultural production that affect food production quality, quantity and availability in markets across ecological zones and seasons; (b) market dynamics that affect year-round and seasonal household access to food, through purchase or home production; (c) household food security and consumption norms that determine dietary intake; and (d) elements of dietary adequacy and hygiene that affect nutritional status, health, development and survival. The Symposium was organized into four thematic sessions: (1) Agriculture-to-Market; (2) Market Purchase or Home Production-to-Household; (3) Household Diet to Nutritional Status of Women and Young Children; and (4) Linkages Across the Causal Spectrum.



The four sessions deconstructed and assessed the strength of evidence of key factors along this pathway, described methods for measuring these factors, explored factors that link domains within the pathway and attempted to identify evidence gaps. Oral and poster presentations of abstracts on Day 1 covered varied topics, including the impact of the consumption of legumes on health outcomes, results of combined interventions (agricultural production, income generation, home gardening) on health and nutritional outcomes, methods available to assess food insecurity, and reviews of findings from randomized nutritional intervention trials.

Day 2 of the Symposium consisted of a participatory and dynamic discussion of domains of concern that span the agriculture-to-nutrition pathway, to identify gaps in knowledge, design and measurements issues, and capacity building. Themes raised included: 1) improving dietary intake (quality and quantity) of poor and malnourished women and children; 2) setting of practical dietary goals in the home that may improve nutritional conditions; 3) contextual factors that influence dietary adequacy; 4) relationships between home food production, storage and processing to dietary adequacy; 5) market factors that affect year-round food access; and 6) agricultural factors that affect availability, market prices and access (effective demand) to food in the household.

Symposium participants identified knowledge gaps both within and between the domains. These included needs to better understand: (i) determinants of household and child malnutrition; (ii) how different target groups perceive nutrition information; (iii) effects of common cooking and food preparation methods on nutritional value; (iv) women's roles in agriculture with respect to control of household resources, decision-making, intra-household food allocation, their own nutrition and their ability to care of their children; and (v) roles of poverty alleviation strategies for improving the nutritional status of women and children. There is a need to build research capacity within Nepal, translate research findings into policy and programs across the country and mobilize evidence-based advocates within government to present convincing understandable findings. Based on discussions that transpired throughout the Symposium, the Symposium Organizing Committee identified the following priority actions as recommended "next steps" for the Nepal research community:

- ❖ Form a cross-disciplinary working group composed of established researchers from each relevant sector—agriculture, economics, marketing, food security, dietary intake, public health and nutrition—to identify the key research questions that need to be addressed in the next 3, 5 and 10 years to inform the agriculture-to-nutrition causal pathway.
- ❖ Conduct efficacy (i.e. under optimal conditions) and effectiveness (under real-life and programmatic conditions) research on promising and relevant interventions.
- ❖ Establish community-based surveillance sites in the major agro-ecological zones in Nepal to: (i) provide longitudinal measures of trends and changes over time in food availability, access and utilization, and relate them to household food security, dietary intake and nutrition and health status; and (ii) generate empirical evidence about integrated agriculture and other food and nutrition program interventions which have an effect on nutrition and health outcomes. This should be a priority area for the Nutrition CRSP.
- ❖ Organize bi-annual or annual forums for policy makers from the National Planning Commission, Ministry of Agriculture and Ministry of Health and Population and researchers to discuss and translate research findings that pertain to the improvement of nutrition status through a multi-sectoral approach.
- ❖ Organize an annual scientific symposium or "evidence summit" to facilitate the rapid sharing of findings and innovative solutions.

References:

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4. Jef L Leroy, M.R., Marie Ruel, Ellen Verhofstadt, Deanna Olney, The Micronutrient Impact of Multi-Sectoral Programs Focusing on Nutrition: Examples from Conditional Cash Transfer, Microcredit with Education and Agricultural Programs. 2008.