Executive Summary

Delhi Conference, “Paths of Convergence for Agriculture, Health and Wealth,” was hosted in June, 2012, by the McGill World Platform for Health and Economic Convergence (MWP) and the International Clinical Epidemiology Network (INCLEN Trust International), with the support of the Bill and Melinda Gates Foundation and MWP’s and INCLEN’s partners and sponsors. It also built upon the research and development agenda of the CGIAR Research Program (CRP4) on agriculture for improved nutrition and health. The two-and-a-half-day high-level meeting brought together a wide range of scientists, industry leaders, civil society representatives and policy makers to develop road maps for real-world changes aimed at accelerating secure nutrition and slowing the spread of obesity-related non-communicable diseases, taking India as the core target, but inspiring solutions to these complex challenges around the globe.

Three features of this effort set the MWP Delhi Conference apart from most others aimed at addressing these issues. First, there was a strong focus on harnessing the power of business as a catalyst for real-world change through collaboration between different sectors of society and different types of experts and leaders. Second, there was an emphasis on seeking out innovation from industrial, scientific, healthcare, agriculture and government players for impact and scale. And third, the conference was one stage of a sustained convergence-building process--that is, a process of enabling different types of players to work independently as well as collaboratively toward well-integrated goals--targeted at developing and deploying a roadmap of projects intended to effect meaningful change at community, state, national and global levels. These three approaches are essential to laying out new paths to solving critical, complex, global nutrition-related problems that have consistently proven resistant to conventional efforts.

The conference was hosted concurrently with the release of a special feature of The Proceedings of the National Academy of Sciences, which provides an academic backbone to the goals addressed by the conference. [http://www.pnas.org/content/109/31/12294](http://www.pnas.org/content/109/31/12294).

Key achievements

In three days of multi-sectoral, multi-disciplinary presentations, panels and workshops, the conference made significant progress toward these goals. Among the key achievements:

- Identifying nutrition-related goals, concerns, opportunities and constraints from the points of view of different players, so that all stakeholders can approach the problem with a broader, common understanding of the intertwined challenges and potential solutions.

- Elaborating four parallel, project-oriented roadmaps for action, aimed at, respectively, collaboratively innovating with regard to nutrition, engaging the business world in nutrition-and-health-related efforts to address the basic needs of the most vulnerable communities, establishing more effective, unified and integrated government policies, and improving metrics related to these efforts.

- Examining within each of the four roadmaps the ways in which existing nutritional-security-related programs have been succeeding or failing, and considering opportunities to improve on these programs and to establish new ones, with an emphasis on creating linkages between efforts.
• Laying out specific plans of action to move forward in developing and implementing each of a portfolio of projects for the four roadmaps.

• Furthering the convergence-building process needed to develop and deploy the roadmap projects.

• Producing a report that elaborates on the convergence-building approach, to be presented in a keynote presentation at the upcoming World Health Summit in October 2012 http://www.worldhealthsummit.org/

• Producing a series of papers expanding on the conference presentations and ongoing roadmap development, to constitute a special feature of The Annals of the New York Academy of Science.

Key Insights from the Presentations and Panels

The opportunity for food innovation. Technological and other innovation can help make nutritious food more appealing, affordable and locally accessible. Useful changes can be introduced at every step of the food chain, ranging from fortification of raw grains or processed foods with iron and other key nutrients, to taste improvement, to increasing the seeds and fertilizers available to small farms, to lowering cost and raising choice at the retail end with better information systems. If businesses are to be better engaged in finding and implementing improvements, they must align their core profit strategies with the nutritional needs of the market rather than merely providing philanthropic help intended to generate good will.

Integrating agriculture, nutrition, industry and consumption. Efforts to align agriculture with secure nutrition goals have failed to fully account for food industry practices and consumption patterns. Bringing these factors into the picture vastly improves the opportunities for creating self-sustaining solutions to undernutrition. At the same time, agricultural interventions have focused on increasing the yield of a small number of crops, whereas expanding crop diversity—especially in providing better access to more nutritious crops—can have a large impact on increasing food security and providing balanced diets.

The rise of junk food. The number of hungry people in the world has been growing for 30 years, in spite of the existence of sufficient food supplies, and now stands at one billion people. Meanwhile, the number of overweight people has been dramatically increasing, reaching 1.5 billion people, and leading to an explosion of cardiovascular disease, diabetes, and other non-communicable diseases. Hunger and obesity are both related to a lack of access to nutritious food. Part of the problem is that the Western world has been exporting its food system to Asia, and it's a meat- and junk-food-heavy system that in its emphasis on simple carbs and fat has in a sense been designed for disease. In India, fast-food consumption has been growing at 40 percent a year, with prices for fruits and vegetables rising at four times the rate of junk food prices.

A quiet revolution in the food chain. India's food supply chain is evolving rapidly, with innovation taking place simultaneously in traditional and modern branches of the chain. Given that most of the cost of food is added after it leaves the farm, the impact of changes in the chain on nutritional access are potentially enormous. Among the changes taking place: Supermarkets are increasingly the retail outlet of choice in urban and near-urban areas; wholesale centers and cold-storage hubs are springing up in rural areas to make it easier for small farms to get their products into the food chain; and farmers are getting better access to needed land, water, seeds and fertilizers. But there is still a great deal of friction and gaps in the chain, and these must be addressed if progress is to continue. In addition, certain rural areas especially far from major cities are not seeing nearly the improvement that less-distant rural regions are experiencing.
Understanding nutrition. The nutrition benefits and shortcomings of different diets are still in many ways poorly addressed and even understood. So are the full array of motives that impact food choice and behavior. Much more work needs to be done in exploring how food can be fortified, the role of micronutrients, how diets that contribute to undernutrition evolve into diets that contribute to obesity, and the many biological, psychological and cultural factors unique factors involved in maternal, child and youth malnutrition. Opportunities for new types of interventions are coming out of the fast-growing fields of nutrition-focused epidemiology, genomics and behavioral economics. Progress will require better models of nutrition, increased investment, clearer common goals, better market incentives, and the establishment of credible, measurable nutrition standards.

Aligning healthcare with nutrition. Healthcare systems around the world have mostly failed to emphasize preventive medicine in general, and in particular the importance of diet in fending off malnutrition and obesity. In India the problem is compounded by a shortage of healthcare providers and clinics in rural areas. Some of these shortfalls can be addressed through networked information and health systems programs and services based on mobile phones, which are achieving high penetration even in rural areas. An especially high-impact opportunity for this approach is to improve the monitoring of maternal and child nutrition and health in order to establish long lasting access to food, nutrition, health, and care.

Policy convergence. In spite of pressing calls for a cross-sectoral approach, public policy often fails to consider the nutrition and health consequences of agricultural, industrial, trade, finance and other economic policies and investments--nor the impact health consequences have on economic performance. In addition, convergence is lacking between global and domestic jurisdictions, and both are poorly linked to local community leadership. The quest for panacea-type solutions persists, even as the complex causes of the double burden of undernutrition and overnutrition become more widely recognized. In India, the Planning Commission, responsible for approving state and federal government expenditures and for assessing their compatibility, has recently scaled up its cross-sectoral approach.

The data disconnect. There are plenty of data on health, food and nutrition, but they are currently incomplete, unreliable, disconnected, and incompatible. Achieving real progress in nutrition will require taking an integrated approach to defining, gathering and analyzing data across a range of domains, including crops and farming systems, the quality of the food being produced, the effects of specific marketing efforts or education interventions on consumer demand, the link between food consumption and health outcomes, and their economic impact, to name just a few. A number of new analytical tools can then be applied to help inform strategies and policies. System dynamic modeling, for example, allows predicting the effects of hypothetical interventions on both health outcomes and economic development.
**Roadmap Highlights**

The MWP roadmaps are vehicles for changes that have real impact on populations. Each project brings a strategic consortium of academic, private and public partners to a specific and pressing health or social issue; sets achievable objectives over a one-to three-year horizon; and generates knowledge, intellectual leadership, policy direction, product and program innovation through novel collaborations at local, national and global levels. Roadmap projects can be led directly by the MWP, or by partners that adhere to the MWP’s codes of conduct and ethics. The results will be transformational partnerships and goal-oriented, impactful projects, as well as a new collaborative model that unites business, government, civil society and academia in building a healthier world.

The foundation of the roadmaps is the MWP’s unique Whole-of-Society (WoS) approach. Pioneered by the MWP, the WoS approach harnesses the power of business engagement, academic research, policy development and community involvement to find new ways of stimulating meaningful and sustainable change in every domain that impacts nutrition-related health. These domains include individual food and other lifestyle choices; agricultural, food marketing, education and health care practices; the activities of civil society organizations; social norms and cultural values; and the alignment of health and economic goals in policy, investment, diplomacy and systems transformation.

The WoS approach combines the rigor of specialized expertise with an openness to interdisciplinary partnerships, bringing together neuroscientists and agribusiness, policy-makers and economists to tackle the seemingly intractable problems of obesity and its attendant diseases. Through its unparalleled range of collaborators and the innovative scope of its analysis, the WoS approach is designed to generate solutions that can provoke new conversations about obesity, and about how global development can contribute to a healthier, more sustainable and prosperous world.

The Delhi Workshops, each focused on one of the four roadmaps, laid out plans for moving the MWP agenda forward. Participants worked to come to agreement on the goals of their respective roadmaps, and examined existing and proposed projects that can serve as real-world laboratories for the various action-oriented elements of the roadmap. Here are some of the highlights:

*The projects are described as they emerged from the one-day roadmap development workshop (June 23). A portfolio of them are the object of further development and deployment.*
Roadmap 1: Innovation to Address Nutrition
Goals:
• Integrating nutrition-oriented technology, community engagement, organizational strategies and social policy at local, national, regional and global levels
• Increasing food-type diversity in agriculture and diets, emphasizing the addition of more nutritious foods
• Increasing the income that small farmers can realize from shifting to more nutritious crops, while ensuring the resulting foods reach the market at affordable prices
• Placing more emphasis on programs that address health, nutrition and farm-income opportunities for women, 83 percent of whom in rural areas are employed in agriculture, and who as mothers are typically underweight and suffer from poor nutrition
• Addressing food-related consumer demand and behavior
• Making improvements to the entire food value chain
Projects:
• Helping small farms grow the pigeon pea, a nutritious and cost-effective pulse
• Making a high-iron form of pearl millet available to small farms
• Using mobile-phone- and computer-based social media to promote nutrition awareness and diet-related behavior change

Roadmap 2: New Forms of Business Engagement
Goals:
• Getting agricultural and food businesses to shift profit-generation from junk food and monoculture crops to food and crops that promote health and nutrition
• Creating new forms of investment in nutrition- and agriculture-related businesses and programs
• Facilitating public-private and profit-nonprofit partnerships that address the intersection of health, nutrition and agriculture
Projects:
• Developing mobile-phone-based systems that track the health and nutrition of mothers and children, and deliver information and services to them
• Adapting health solutions to low-income, rural and climate-challenged regions
• Creating information-sharing platforms for farmers
• Investing in rural restaurants that serve wholesome food
• Working with major food companies to develop and market affordable, appealing, fortified food products

Roadmap 3: Rethinking Policy
Goals:
• Evaluating existing government policies on health, nutrition and agriculture, with an eye to linking them together to enhance their impact
• Identifying the opportunities for new policies that better address the problems that are the focus of existing policies, and that address problems currently given too little attention by policy makers
• Looking for opportunities to involve policy-makers in efforts undertaken by research institutions, businesses, NGOs and social-action groups
Projects:
• Developing an interdisciplinary team to identify opportunities to better integrate political processes with one another and with other institutions and players, and to identify and promote best practices in government nutrition-, agriculture- and health-related policy.
• Helping policy-makers establish dietary standards that can guide action to prevent and control nutrition insecurity and non-communicable diseases, and developing micro- and macro-economic models to document the likely impact of policy decisions on labor productivity, healthcare costs and trade, as well as the impact of achieving population-wide healthier diets.
• Identifying transitional and long-term policies that address the problem of undernutrition in Bangladesh and the double burden of nutrition in India

Roadmap 4: Better Metrics for Analytics
Goals:
• Standardizing data on nutrition, health and agriculture
• Developing new analytical models that can guide policy makers
• Creating networks of researchers and projects aiming to gather, formalize, make available and analyze data
Projects:
• Establishing a multi-village surveillance system that will assist in the development and validation of techniques for implementing and evaluating multilevel interventions for reducing hunger and obesity.
• Developing an integrated data warehouse and modeling platform for a whole-of-society approach to monitoring nutrition, health, agriculture, consumer behavior, and all components of the food value chain.
• Building a decision support platform for assessing the combined impact of agricultural interventions targeting undernutrition.
• Modeling the commercial pathways through which agricultural innovation in cereals, pulses, dairy and other farm outputs translates into food products and services, and into dietary changes.