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Supported by the CGIAR

January 2008

Accelerating Progress toward Reducing Child Malnutrition in India

A Concept for Action

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Summary

1. **The facts: Child malnutrition in India**
   India is home to 40 percent of the world's malnourished children and 35 percent of the developing world's low-birth-weight infants; every year 2.5 million children die in India, accounting for one in five deaths in the world. More than half of these deaths could be prevented if children were well nourished. India's progress in reducing child malnutrition has been slow. The prevalence of child malnutrition in India deviates further from the expected level at the country's per capita income than in any other large developing country.
2. **The challenge: Accelerating progress in reducing child malnutrition in India**
   India has many nutrition and social safety net programs, some of which (such as Integrated Child Development Services [ICDS] and the Public Distribution System [PDS]) have had success in several states in addressing the needs of poor households. All of these programs have potential, but they do not form a comprehensive nutrition strategy, and they have not addressed the nutrition problem effectively so far.
3. **Strategic choices for improved child nutrition**
   India lacks a comprehensive nutrition strategy. Various choices for nutrition strategies can be considered. A review of some of the more successful country experiences suggests that all of them implemented complex, multisectoral actions with more or less emphasis on service-oriented nutrition policies (as in Indonesia), incentive-oriented nutrition policies linked to community or household participation and performance (as in Mexico), or mobilization-oriented nutrition policies (as in Thailand). These choices are not mutually exclusive. India now has the opportunity to "leapfrog" toward innovative nutritional improvement based on the experiences of other countries and on experiences within India itself.
4. **Cooperation for policy actions**
   To accelerate progress in reducing child malnutrition, India should focus on the following four cross-cutting strategic approaches:
   a. ensuring that economic growth and poverty reduction policies reach the poor;
   b. redesigning nutrition and health policies and programs by drawing on science and technology for nutritional improvement, strengthening their implementation, and increasing their coverage;
   c. increasing investments and actions in nutrition services for communities with the highest concentration of poor; and
   d. focusing programs on girls' and women's health and nutrition.

IFPRI, in collaboration with Indian experts and international networks, could bring much-needed experience with programs and policies around the world to bear on this effort. An evidence-based, research-intensive approach with "learning while implementing"—which has shown success in other countries—is recommended. There is no time or reason to wait for taking action.

There is now strong interest among key Indian stakeholders in improving the nutrition situation in the country. In his Independence Day speech to the nation, Prime Minister Manmohan Singh stated, "The problem of malnutrition is a matter of national shame.... I appeal to the nation to resolve and work hard to eradicate malnutrition in five years." This concept note focuses on international research and policy experiences in reducing child malnutrition and outlines how to move forward in close cooperation with the country's policymakers and its nutrition community.

The Facts: Child Malnutrition in India

India is home to 40 percent of the world's malnourished children and 35 percent of the developing world's low-birth-weight infants; every year, 2.5 million children die in India, accounting for one in five deaths in the world. More than half of these deaths could be prevented if children were well nourished.

In spite of its remarkable economic growth in the past decade, India's progress in reducing child malnutrition has been excessively slow. The prevalence of child malnutrition in India deviates further from the expected level at the country's per capita income than in any other large developing country. With close to half of its preschoolers suffering from malnutrition, India is one of the countries with the highest proportion of malnourished children in the world, along with Bangladesh, Ethiopia, and Nepal. India's rates are almost double those of Sub-Saharan Africa and five times higher than those of China.[1]

Deficiencies of essential micronutrients such as vitamin A and iodine also affect more than half of all preschoolers, and 75 percent suffer from iron-deficiency anemia. These nutritional deficiencies impair children's growth and physical and mental development, reduce their resistance to infections and their survival rates, and curtail their future intellectual and reproductive performance and economic productivity. This damage is largely irreversible unless addressed early in life. It is also a threat to the long-run economic development of India.

Malnutrition in India, as in other developing countries, results from a series of interrelated factors rooted in poverty, including a lack of access to food, health care, safe water, sanitation services, and appropriate child feeding and caring practices. These interrelated factors are in turn exacerbated by poor households' and communities' lack of access to human, financial, social, natural, and physical capital, combined with social discrimination, lack of education, and gender inequality.

Empirical research conducted by IFPRI and others also shows that the extremely low status of women in South Asian countries is partly responsible for low birth weights and the excessively high levels of child malnutrition in the region, compared with other countries and regions at similar levels of economic development.[2] The low social status of women impairs their ability to make decisions about investments in their children's health, nutrition, and education and prevents them from gaining access to the services they need to protect their own health, nutrition, and survival. Maternal mortality in India is one of the highest in the world, with 540 deaths per 100,000 live births. In addition, 83 percent of women in India suffer from iron-deficiency anemia, compared with 40 percent in Sub-Saharan Africa. The poor nutritional and social status of women in India means that poverty and malnutrition become inheritable, whereby chronically malnourished, small mothers lacking access to adequate prenatal, delivery, and postnatal care are at increased risk of delivering undernourished babies, who in turn are at greater risk of poor growth and development, high rates of infection, and a greater probability of death from the synergetic effects of infection and malnutrition.

The Challenge: Accelerating Progress in Reducing Child Malnutrition in India

To accelerate progress in reducing child malnutrition in India, the most urgent policy changes include expanding the scale, improving the targeting, and strengthening the implementation of existing programs and policies; building analytical and monitoring capacity; and ensuring that programs and policies are effectively pro-poor and pro-nutrition and that they focus on improving women's status. Special attention is needed in the states that carry the highest burden of child malnutrition.

India has many nutrition and social safety net programs, some of which have had success in several states in addressing the needs of poor households. These programs include

- Integrated Child Development Services (ICDS);
- the Mid-Day Meals Program;
- the Public Distribution System (PDS);
- community public works programs; and
- the National Old-Age Pension Program and the Annapurna Program.

All of these programs have potential, but they do not form a comprehensive nutrition strategy, and they have not addressed the nutrition problem effectively so far. For example, several evaluations of ICDS have shown it to have low coverage, poor targeting, and little impact on reducing

[1] The nutrition data are based on international growth references; Indian children were included in the development of those references. Demographic and Health Survey data for India are gathered by the Indian Institute for Population Sciences.

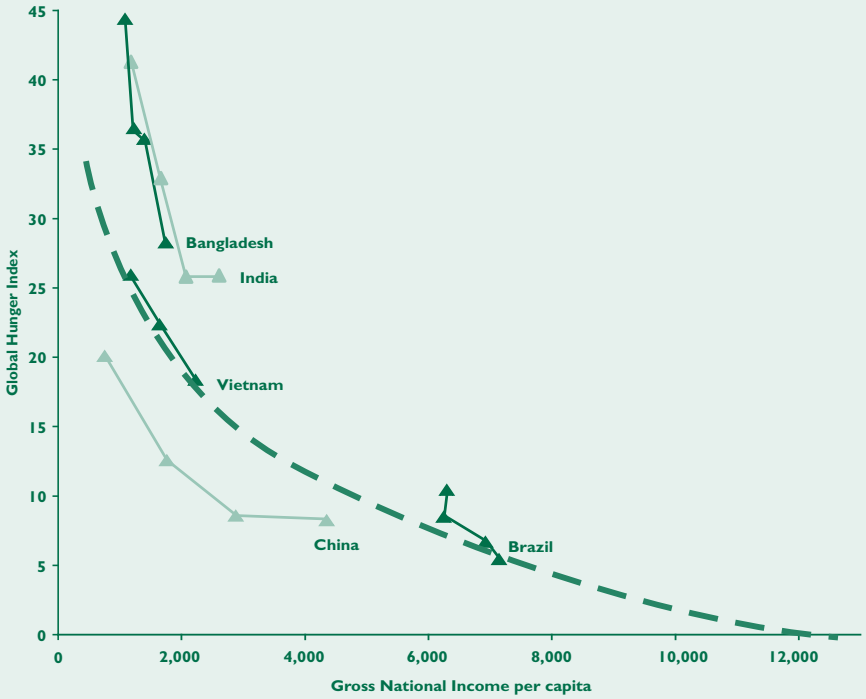
[2] For a comparative analysis of the disparities in nutritional improvement in China and India and the role of gender, see, for instance, Peter Svedberg, Child Malnutrition in India and China, IFPRI 2020 Focus Brief on the World's Poor and Hungry People (Washington, DC: International Food Policy Research Institute, 2007).

child malnutrition. Similarly, the PDS's poor targeting has been documented.

Furthermore, the different programs are often poorly integrated, with some households receiving benefits from a number of sources and others remaining excluded. Stronger programs and better coordination among them would increase their efficiency and effectiveness.

Although these programs absorb substantial public funds, India's level of public investment in nutrition is far below that of other developing countries. Thus there seem to be three problems that call for action: scale, design, and implementation. India needs greater accountability at all levels—not only for programs, but also for nutritional improvement in general.

Figure 1 Trends in the Global Hunger Index and gross national income per capita: 1981, 1991, 1997, and 2003



Source: Analysis by Doris Wiesmann based on Global Hunger Index data from D. Wiesmann, A Global Hunger Index: Measurement Concept, Ranking of Countries, and Trends, Food Consumption and Nutrition Division Discussion Paper 212 (Washington, DC: International Food Policy Research Institute, 2006) and gross national income per capita data from World Bank, World Development Indicators (Washington, DC: 2005), CD-ROM.

Note: GNI per capita was calculated for three-year averages (1979–81, 1990–92, 1995–97, and 2001–03, considering purchasing power parity). Each triangle represents one of the four years: 1981, 1992, 1997, and 2003.

The Experiences of Other Emerging Economies in Reducing Hunger and Child Malnutrition

Economic development and improvements in the Global Hunger Index

The Global Hunger Index (GHI), which was developed at IFPRI and released for the first time in 2006, was designed to capture three dimensions of hunger: insufficient food availability, child malnutrition, and child mortality as shown in data collected regularly by the United Nations. The Index ranks countries on a 100-point scale, with 0 being the best score (no hunger) and 100 being the worst. In general, a value greater than 10 indicates a serious problem, a value greater than 20 is alarming, and a value exceeding 30 is extremely alarming. According to the GHI, the hot spots of hunger are in Sub-Saharan Africa and South Asia. In South Asia, child malnutrition makes up the lion's share of the GHI score.

Of the 119 countries ranked by the GHI, India ranked 96th, far behind Brazil (28), China (47), Thailand (58), and Vietnam (75), but ahead of Bangladesh (102). Nearly two-thirds of India's alarmingly high GHI score is attributable to its high child malnutrition rate. India ranks 117th of 119 countries on child malnutrition, right before Bangladesh and Nepal and after countries such as Sudan, Cambodia, and Ethiopia.

Figure 1 shows GHI trends in relation to economic development from 1981 to 2003 for selected countries. The curved dotted line depicts the expected GHI score for a given level of gross national income per capita, based on data from 110 countries. China's GHI is consistently better than expected (that is, below the curved dotted line), whereas Vietnam and Brazil are right on the line. In contrast, India consistently ranges above this line: its GHI is considerably higher than the score of an average country with the same per capita income. Whereas Bangladesh (and Pakistan, not shown) also have high GHI scores relative to their level of economic development, India fares worse than all other South Asian countries in this respect.

Generally, the trends show that hunger falls with economic growth. Between 1981 and 2003, Bangladesh and Vietnam decreased their GHI scores proportionally with increases in their gross national income per capita (that is, in parallel with the curved dotted line). This pattern also holds for China until 1997, although reductions in the GHI did not keep up with economic growth in recent years. The same is true for India: its GHI dropped substantially between 1981 and 1997 but remained unchanged between 1997 and 2003, while the economy continued to grow. Rising income inequality and spatial disparities have been reported for both

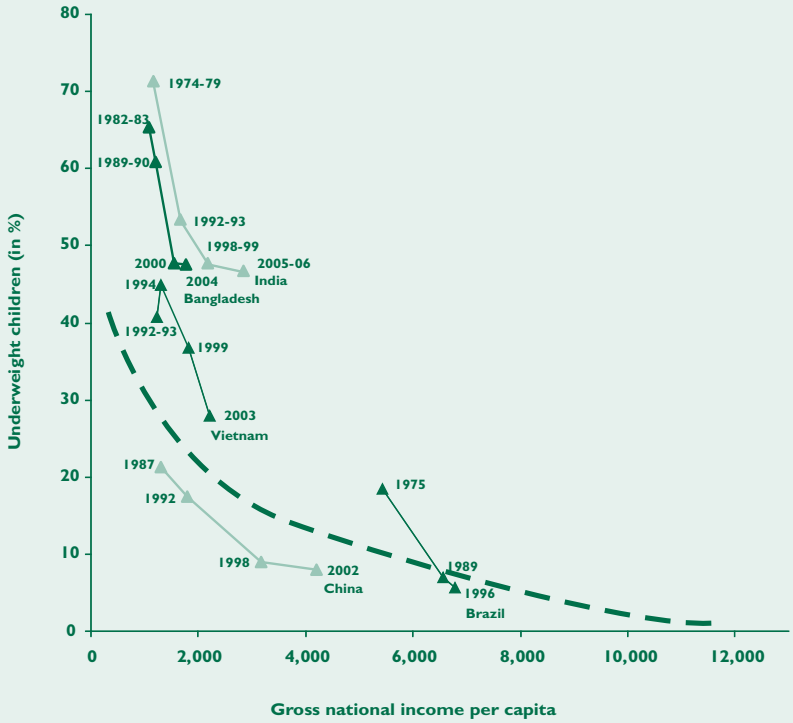
China and India. Brazil also has high income inequality, but the country has implemented targeted social programs and reduced its GHI score faster than the pace of its economic development would suggest.

The GHI can be related to the United Nations Millennium Development Goals (MDGs), which set numerical targets for the three GHI components. India has done relatively well in reducing its GHI in line with the MDGs since 1990. Yet this progress is due mainly to notable reductions in the GHI between 1990 and 1997. If the slower, more recent rates of change continue, India will fail to achieve the MDG target of halving hunger by 2015.

Economic development, reduction in child malnutrition, and social policy packages

Trends in child malnutrition (percentage of children underweight) relative to changes in economic development follow patterns similar to those observed for the GHI (see Figure 2). Again, India and Bangladesh fare poorly, especially compared with Vietnam (and with China in 1998, when its gross national income was similar to that of India in 2005–06). The experiences of the countries differ widely in terms of the timing, pace, and nature of their economic development as well as their social policy packages and their investments in health, education, and social programs. Highlights from Thailand, China, Vietnam, and Brazil are presented here.

Figure 2 Trends in child malnutrition and gross national income per capita



Source: Analysis by Doris Wiesmann based on child malnutrition data from World Health Organization (WHO), WHO Global Database on Child Growth and Malnutrition: NCHS/WHO Reference Data (Geneva: 2006), http://www.who.int/nutgrowthdb/reference/en; United Nations Children's Fund (UNICEF), UNICEF Global Database on Undernutrition (New York: 2006), http://www.childinfo.org/areas/malnutrition/tables/Underweight_ForChildInfo_May022006.xls; and International Institute of Population Sciences (IIPS), 2005-06 National Family Health Survey (NFHS-3), National Fact Sheet, India (Mumbai: 2007), http://www.nfhsindia.org/pdf/IN.pdf; and on gross national income per capita data from World Bank, World Development Indicators (Washington, DC: 2007), CD-ROM.

Note: GNI per capita was calculated for three-year averages (for the latest year of the nutrition survey and the two preceding years, considering purchasing power parity).

Thailand: Halved child malnutrition between 1982 and 1986 (from 50 to 25 percent in less than a decade)

Policy instruments:

- Thailand's 2nd National Health and Nutrition Policy (1982–86) focused on targeted nutrition interventions to eliminate severe malnutrition as well as on behavior change and communication to prevent mild to moderate malnutrition.
- The policy used social mobilization and relied on community-based primary health care as a delivery system for nutrition and health interventions.
- The number of health volunteers, all of whom underwent extensive training, increased significantly, reaching a ratio of 1 health volunteer for 20 households.
- Coverage was high.

Success factors:

- The country's leaders had a vision of what needed to be achieved and planned adequately for the scaling-up process.
- Nutrition was integrated within the National Economic and Social Development Plan, and linkages between agriculture and nutrition were established, ensuring sustainability.
- Social mobilization and community-level involvement were highly successful.
- A strong local, action-oriented surveillance system allowed for monitoring and evaluating progress.
- The country made a large investment in health, accounting for approximately 20 percent of total government expenditure, and a similarly high investment in education during these years.

China: Reduced child malnutrition by more than half between 1990 and 2002 (from 25 to 8 percent in 12 years)

Policy instruments:

- China pursued a successful poverty alleviation strategy along with rapid economic growth.
- Effective nutrition, health, and family-planning interventions were implemented at a large scale.

- China also focused on complementary interventions to address other determinants of child malnutrition, such as water and sanitation (which help reduce illness from infectious diseases) and education (between 1992 and 2005, the share of mothers who had completed middle school increased from 32 to 57 percent and the share of illiterate women fell from 22.5 to 7 percent).

Success factors:

- Central leadership was combined with a commitment to the process and the establishment of local government ownership.
- China established an effective data collection system that provides regular data for monitoring progress, and the country's strong research institutions ensure that data and information are effectively communicated to policymakers and used for policymaking.
- Strong and effective partnerships were established between the Chinese government and international partners.
- The budget share of government expenditure on education increased to 20 percent during the 1990s, although the share spent on health was relatively low (~3–4 percent).

Vietnam: Reduced child malnutrition from 45 to 27 percent between 1990 and 2006

Policy instruments:

- The economic reforms Vietnam set in place in 1986 led to growth in gross domestic product (GDP) of about 8 percent between 1990 and 1997 and 6–7 percent from 2000 onward. Poverty rates fell from more than 60 percent in 1990 to 18 percent in 2004.
- The country created successful child-health and family-planning programs (reducing fertility rates from 3.1 in 1994 to 2.3 in 2002) and achieved high coverage of immunization and other primary health care services.

Success factors:

- Awareness of nutrition was high, and nutrition goals were included in Vietnam's Socioeconomic Development Plan. Various groups such as the Woman's Union, the Youth Union, and the Farmer Association participated in nutrition activities.
- The proportion of the health budget spent on nutrition programs was (and still is) high: nutrition accounts for 25 percent of national target programs for health, even though nutrition is one of 10 target programs.
- Vietnam had nationwide health coverage and targeted health subsidies for the poor.
- There were a variety of social-sector programs related to social security and implemented as infrastructure investments and credit subsidies (rather than as direct transfers).
- The country had compulsory primary education and lower secondary education, covered by state expenditures, and targeted programs providing education subsidies.

Brazil: 60 percent reduction in child malnutrition (from 18 to 7 percent) from 1975 to 1989; reductions in infant mortality from 85 to 36 deaths per 1,000 live births in same period

Policy instruments:

- The period of sharpest economic growth and poverty reduction occurred from 1970 to 1980, before improvements in child malnutrition and infant mortality (that is, there was a lagged response).
- Coverage of safe water increased from 35 percent in 1967 to 80 percent in 1980. Sewerage coverage increased to 50 percent by 1980.
- Immunization coverage more than tripled from 1975 to 1988; the number of physicians per 1,000 people doubled.
- Major investments were made in direct nutrition inputs (food programs) and in social-sector spending on water and sanitation, health, and education.

Success factors:

- Various food and nutrition programs, including food distribution programs (via both private and public sector channels) and direct subsidies, were implemented; these programs were almost fully supported by national resources.
- Food program expenditures went from 0.06 percent of GDP in 1980 to 0.21 percent of GDP in 1989. Food- and nutrition-related expenses went from 0.16 percent to 0.25 percent of social-sector expenses.
- Investments in health showed an upward trend from 1975 to 1982, with lower levels in 1983–84. They further increased to a peak of US$68.73 per capita in 1989 (2.4 times the expenditures in 1975).
- Spending on education increased during 1976–82. Per capita education expenditure was US$31.9 in 1982, dipped to US$24.5 in 1984, but increased again to reach US$54.8 in 1988 (a sevenfold increase compared with 1970).

Since 2004, Brazil has further accelerated its nutrition policy efforts with its Zero Hunger program and nutrition has improved significantly. That program more than doubled food and nutrition spending between 2003 and 2007 (to about US$13 billion annually in 2007).

Conclusions from the country experiences

The diverse approaches and experiences of different countries suggest that there is no one-size-fits-all solution to the

nutrition problem. India will have to define the "Indian way" to nutrition improvement, which may involve different approaches in different regions and states. It is also clear from these successful examples, however, that nutrition improvement has not materialized without

- strong government action coordinated across central, state, and local levels;
- significant scaling up of public spending;
- leadership at the highest level to ensure attention across branches of government and regions;
- inclusion of vulnerable groups and their communities in terms of mobilization and information sharing; and
- a strong monitoring and evaluation culture that provides a basis for incentives and correction of policy actions in the context of implementation.

The Way Forward and Strategic Choices

India needs a comprehensive nutrition strategy. It now has the opportunity to take advantage of the diverse experiences of other countries and of programs within India as it considers useful options for the way forward. The main elements of successful nutrition strategies include service-oriented nutrition policies that deliver nutritional improvement, incentive-oriented nutrition policies linked to community and household participation and performance, and mobilization-oriented nutrition policies. Drawing on the experiences of other countries and of domestic programs, India can "leapfrog" toward innovative nutritional improvement.

Three interrelated areas of action are suggested here. All of them involve consultations among Indian and international experts, researchers, and policymakers, as well as a strong effort in public communications and information.

1. **Analysis.** One urgently needed step is comprehensive analysis of existing nutrition programs and related social policies in India to assess their coverage, effectiveness, and overall impact. Such an analysis does not need to start from scratch but can build on existing data and recent analyses. A careful review of these assessments seems appropriate in view of the ongoing debate over conclusions that seems to suggest that the evidence base is not sufficiently strong. In collaboration with Indian partners, IFPRI would be available to join such an effort.
2. **Assessment.** A second element of action would involve assessing best practices adopted elsewhere and their potential relevance for the Indian context. The diversity of relatively successful nutrition strategies in Brazil, Chile, China, Mexico, and Thailand, for example, should be considered. International organizations such as IFPRI could bring their broad experience with programs and policies to bear on this effort in three ways: (a) by helping coordinate expert consultations, (b) by organizing multisectoral meetings to discuss recommendations, and (c) by helping to design and implement action plans to address the recommendations.
3. **Action.** Policy action can be initiated at the same time. Leadership in this area rests with the Indian government at the central and state levels and with nongovernmental organizations (NGOs), including socially active and responsible corporations. Recognizing that malnutrition is caused by a confluence of biological, social, and economic factors at the household and community levels, it seems that the following cross-cutting strategic elements need to be implemented to accelerate progress in reducing child malnutrition in India. Some of these strategic elements can be part of a short-term strategy, whereas others must be intertwined with a long-term vision and strategy.

A short-term strategy would include the following steps:

- Nutrition and health programs and policies should be redesigned to implement them synergistically and at scale to effectively address the main nutrition problems. This effort could be combined with action for improved nutrition along the entire food value chain, including private sector and NGO activities. Strong monitoring and evaluation in all of these areas would promote learning while doing.
- Research can identify gaps where existing program strategies are insufficient to reach desirable coverage and impact or where new technologies, new delivery mechanisms, or additional research are required to meet established goals.
- Efforts should be focused on states, districts, and communities with the highest concentration of poor and vulnerable households, and on more vulnerable individuals within those households (such as women, young children, the disabled, and the elderly). State- and district-level planning and implementation capacities need to be strengthened.
- Programs that work with families and communities should increase their attention to girls' and women's health and empowerment and to increase women's access to nutrition, health, and education.

A long-term strategy would include the following steps:

- Policymakers should work to ensure that economic growth and poverty reduction policies reach the poor, who are particularly affected by malnutrition. This strategy calls for rural and agricultural growth promotion because most of the malnourished poor are in rural areas.

- Science and technology research should make the development of improved or complementary interventions for application in the longer term a high priority. This area of development includes addressing micronutrient deficiencies comprehensively in the short, medium, and long run with fortification and biofortification (that is, plant breeding that generates high nutrient content in poor people's staple foods). Such an effort would build on strong partnerships between national agencies such as the Indian Council of Agriculture Research and the Department of Biotechnology and institutions of the Consultative Group on International Agricultural Research (CGIAR) that have been involved in biofortification programs, such as the International Maize and Wheat Improvement Center (CIMMYT), the International Rice Research Institute (IRRI), and the International Food Policy Research Institute (IFPRI).

Consultations

The strategic elements outlined here, whether they focus on the short run or the long run, would require regular consultations between Indian and international experts, perhaps through a task force. These consultations would focus on

- reviewing and proposing ways to improve the design and implementation of current programs;
- setting up effective monitoring and impact evaluation systems and open communications around these;
- developing evolutionary approaches for including new strategic elements for nutrition action;
- improving the coordination and integration of the different programs with clear accountability at all levels and related open information systems; and
- strengthening state-, district-, and local-level capacity for analysis, management, implementation, and coordination of programs.

An important component of the consultations would involve identifying opportunities for mainstreaming nutrition within the health sector. Current efforts to strengthen the health system through the Ministry of Health's Reproductive and Child Health (RCH) Program and the National Rural Health Mission (NRHM) may provide an opportunity to include improvements in nutrition and women's status in the portfolio of essential actions undertaken by the health sector.

The consultations would also review India's strategy to reduce micronutrient deficiencies and suggest ways to align actions that address micronutrient malnutrition—such as supplementation, food fortification, the use of locally produced micronutrient-rich ready-to-use foods (RUF), and biofortification—with existing nationally and locally owned social and health programs.

Recommendations arising out of the consultations could include recasting, integrating, or abolishing certain program elements; experimenting with different program modalities such as conditional cash transfers, which have been successful in other parts of the world; or scaling up successful small-scale activities.

Policy Impact

The overall impact of these undertakings would be a comprehensive strategic plan for nutrition that can address both the direct and underlying causes of malnutrition by ensuring

- complementary and synergistic use of resources for vulnerable groups;
- high-quality and large-scale implementation of direct and indirect actions for nutrition and short- and long-run strategies; and
- a monitoring and evaluation strategy to assure efficient and effective use of public funds invested in improving nutrition.

These outcomes will in turn lead to better health and nutrition for vulnerable groups, especially women and children.

Joachim von Braun is the director general of IFPRI; **Marie Ruel** is the director of IFPRI's Food Consumption and Nutrition Division; and **Ashok Gulati** is IFPRI's director in Asia.

Acknowledgments

We acknowledge the contributions of **Purnima Menon**, research fellow, IFPRI New Delhi Office, and **Doris Wiesmann**, postdoctoral fellow, Food Consumption and Nutrition Division, IFPRI.

Printed on alternative-fiber paper manufactured from agriculturally sustainable resources that are processed chlorine-free (PCF).