

Scaling Up and Sustaining Nutrition Interventions

Lessons Learned from Success in the Asia-Pacific Region

2008 White Paper

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“Undernutrition kills or disables millions of children every year, and prevents millions more from reaching their full intellectual and productive potential. Although the causes of maternal and child undernutrition are multiple and inextricably linked to poverty... effective policy and programmatic interventions are available. Such interventions could avert, in 36 high-burden countries, the loss of 25 percent or 63 million disability-adjusted life-years associated with stunting, intrauterine growth restriction, and micronutrient deficiencies.”

– Saul Morris, Bruce Cogill, and Ricardo Uauy, “Maternal and Child Undernutrition 5: Effective International Action Against Undernutrition: Why Has it Proven So Difficult and What Can Be Done to Accelerate Progress?,” *The Lancet*, London, January 2008: (371, 9612): 608-622.



Children playing in Nepal

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Executive Summary

This white paper outlines experiences, opportunities, and lessons learned in scaling up interventions to address the global burden of undernutrition—especially from conception through the first two years of life. Scaling up nutrition interventions entails identifying those programs and practices of proven efficacy and applying management, communications, and monitoring principles and tools to expand the number of beneficiaries until everyone who requires the product or service is reached. During the process of scale-up, given resource constraints and as a good management practice, it is often necessary to prioritize groups that have a more urgent need (in this case the most undernourished children).

The main platforms through which nutrition interventions can be scaled up are health systems (where government is usually in the lead and the private sector also has a role) and food systems (where the private sector is most active but government has an important role to play). Several successful examples of scale-up of nutrition interventions from various countries in the Asia-Pacific region are presented briefly, along with a summary of the critical success factors.

This paper argues that the key prerequisites for successful scale-up of nutrition interventions include government leadership and championship; partnerships between government, the private sector and civil society; incentives and penalties; effective advocacy and communications; national management and technical capacity; allocation of stable resources; and a good monitoring and feedback mechanism. While a system-wide solution to combat undernutrition in a country is a valid objective, this paper focuses on scaling up specific, well-proven interventions.



Child consuming a micronutrient fortified midday meal in India

Maternal and Child Undernutrition: A Persistent Problem with Severe Consequences

Despite economic progress and technological advances across the globe, undernutrition rates (encompassing stunting, wasting, and micronutrient deficiencies) in most developing countries persist at unacceptably high levels. More than one-third of child deaths and more than 10 percent of the total global disease burden is attributable to maternal and child undernutrition. Although there is much variation in the region, some areas of Asia have among the highest undernutrition rates in the world. For example, the rates of child undernutrition in India are double those observed in sub-Saharan Africa.

A framework developed in 1990 by UNICEF recognizes the causes leading to undernutrition at three levels:

1. immediate (inadequate dietary intake and disease)
2. underlying (food insecurity, poor access to health services, and inadequate caring practices)
3. basic (poverty)

This framework (appendix i) helps build consensus on the causes of undernutrition.¹ It also guides actions by helping national planners map out the pathways between available resources and undernutrition challenges, thereby identifying the gaps in current efforts. National governments and development partners need to address the immediate causes to provide relief quickly while simultaneously working to alleviate the underlying causes over the long term.

This paper focuses on interventions that address the immediate causes of undernutrition, with a particular focus on access to a good quality diet and improving overall health. Years of experience in field implementation and evaluation have shown that effective interventions aimed at reducing undernutrition—when implemented at sufficient scale—would reduce deaths and disability adjusted life years (DALY) among children under five years of age globally by ten percent.

Addressing undernutrition early in life

Undernutrition has negative effects at all stages of the life cycle, but some of the most damaging effects—and the area with the fewest scaled-up interventions—occur during the period from conception to 24 months of age. Much of the child mortality observed in developing countries occurs in the first two years of life. Undernutrition in these early years also causes irreversible cognitive impairment leading to poor school performance and loss of productivity. In order to prevent undernutrition during these first two years, it is essential not only to ensure a safe and healthy pregnancy for mothers but also to address the causes of undernutrition for adolescent girls. Without effective nutrition interventions, undernourished adolescent girls will enter pregnancy with inadequate reserves to nourish the fetus, which will limit the full development of their unborn children and put their own lives at risk (severe anemia during pregnancy is a leading cause of maternal mortality).



Girls in Nepal

¹The UNICEF Conceptual Framework on Nutrition was developed in 1990 as part of the agency's broader nutrition strategy. The conceptual framework can be found in a UNICEF report titled "Strategy for Improved Nutrition of Children and Women in Developing Countries." It is also available in "UNICEF Joint Health and Nutrition Strategy for 2006-2015," published by the Economic and Social Council of the United Nations, Document E/ICEF/2006/8, November 15, 2005.

The Economic Case for Nutrition Interventions

The case for addressing undernutrition is not only humanitarian; there is also a strong economic basis for action. Undernutrition costs countries at least 2 percent of GDP annually through loss of productivity and higher healthcare costs.² Economic growth can certainly help to reduce undernutrition over time, but relying on economic growth alone would take much too long, considering the availability today of technologies that are proven to reduce undernutrition and that are ready to take interventions to scale. Nutrition interventions that are targeted to individuals in lower socioeconomic groups also provide an opportunity to generate more equitable economic growth. Specific interventions that address undernutrition, particularly among the poor, must be given a high priority.

In 2004 the Copenhagen Consensus—a project that works with the world’s leading economists to analyze the world’s greatest challenges and identify cost-efficient solutions—ranked addressing micronutrient deficiencies as a top global priority, second only to HIV/AIDS.³ Cost analysis conducted in India in 2006 revealed that a comprehensive program to address micronutrient deficiencies in India would yield a benefit to cost ratio of at least 45 to 1.⁴ But the potential impact even of these interventions remains suboptimal because they have not been scaled up globally.



Healthy, active children in India

Reaching Appropriate Target Populations: Platforms for Scale-up

Scaling up nutrition interventions is more complex than simply trying to “reach everyone.” A national nutrition scale-up plan that builds on a national nutrition policy or strategy must address the various types of exclusion that have created the current skewed nutrition profile and, as a result, will also present specific obstacles to scale-up.⁵ In many countries, factors such as income, access to education, religious affiliation, ethnicity, and location (e.g., urban vs. rural) correlate with undernutrition rates.⁶ As a result, policymakers, public health officials, and the private sector must tailor programs and marketing campaigns to the hardest to reach. These people—often the most undernourished—usually fall outside the reach of public programs or private-sector marketing due to factors such as geographical isolation, gender inequality, low purchasing power, social exclusion, and illiteracy. Examples of such groups include residents of the mountainous regions of Nepal, rural populations in India and other countries, and ethnic/religious minorities, such as the Garo people in Bangladesh.

² UNICEF and Micronutrient Initiative, “Vitamin and Mineral Deficiency: A Global Progress Report,” 2003, <http://www.micronutrient.org>.

³ Copenhagen Consensus Report 2004, <http://www.copenhagenconsensus.com/Default.aspx?ID=158>. Note: The 2008 Copenhagen Consensus was released at the time of printing. Five of the top ten 2008 solutions were concerned with addressing undernutrition.

⁴ Micronutrient Initiative, “India Micronutrient National Investment Plan; 2007–2011,” 2006, <http://www.micronutrient.org>.

⁵ A skewed nutrition profile is characterized by disparities in nutritional status between different populations.

⁶ In India, while the average proportion of children who are underweight is 45.9%, there are significant variations by income (lowest income level, 56.6%; highest, 19.7%); education of parents (no education, 55.2%; 10 years completed, 26.3%); religion (Hindu, 43.2%; Muslim, 41.8%; Christian, 29.7%; Sikh, 22%); ethnicity (e.g., scheduled tribes, 54.5%); and location (urban, 36.4%; rural, 49%).

Essential interventions

National governments and agencies that specialize in nutrition are increasingly focusing on a basic package of essential nutrition interventions that typically include the following:

- breastfeeding promotion
- adequate complementary feeding
- improving access to and consumption of essential vitamins and minerals (e.g., vitamin A, iodine, iron, folic acid, and zinc)
- reduction of tobacco consumption
- hand washing or hygiene interventions
- treatment of severe acute malnutrition (SAM)

These are all cost-effective investments that are both proven to address undernutrition and ready for scale-up. But as basic as these interventions may seem, implementing them carries significant challenges.

Key challenges

In January 2008 *The Lancet* published a series of five papers on maternal and child undernutrition.⁷ Paper Four identified seven key challenges for addressing undernutrition at the national level:

1. Getting nutrition on the official list of government priorities and keeping it there
2. Doing the “right” things (those interventions that have a strong evidence base)
3. Not doing the “wrong” things (interventions that are either not proven or have been shown not to be effective, such as stand-alone growth monitoring and school feeding)
4. Acting at scale
5. Reaching those in need
6. Employing data-based decision making
7. Building strategic and operational capacity⁸

Inability to address these challenges not only stymies progress in general, but also presents significant barriers to successful scale-up of nutrition interventions even at the local and state levels.

Even when the challenges above are reduced, a nutrition intervention—especially in the scale-up phase—will flounder without a concerted effort to identify and reach the most appropriate target population. While some interventions are implemented most cost effectively through the adoption of a universal approach that seeks to reach the entire population through uniform means (e.g., universal salt iodization), other approaches must target those who need them most (e.g., vitamin A supplements for children 6–59 months). Defining the target group is an essential first step in designing a scale-up plan because it establishes the appropriate denominator, which will be used to assess the overall performance of the scale-up effort.

⁷ “Maternal and Child Undernutrition,” *Lancet*, London, January 2008: (371, 9608).

⁸ Jennifer Bryce, Denise Coitinho, Ian Darnton-Hill, David Pelletier, and Per Pinstrup-Andersen, “Maternal and Child Undernutrition: Effective Action at the National Level,” *The Lancet*, London, January 2008: (371, 9608): 61694-8.

National Platforms

Countries have two main platforms through which they can improve nutritional status: health systems and food systems. It is important to understand these platforms because they provide different opportunities through which to reach the undernourished and to address specific determinants of undernutrition.

Health systems

Health systems are often managed by the public sector, although in some countries, such as India and Pakistan, private healthcare providers comprise a sizeable part of the system. Not only do health systems provide the infrastructure to address specific health-related causes of undernutrition (e.g., micronutrient deficiencies and infectious diseases), but public programs generally use equity as a guiding principle for service delivery.⁹

However, there are often drawbacks to using health systems in developing countries as platforms to address undernutrition. Such drawbacks include: weak administration and a lack of incentives for workers, weak leadership, unbalanced reach, a lack of sense of urgency, and a tendency to “medicalize” undernutrition and not address it holistically.

Food systems¹⁰

The role of the public sector in food systems is usually limited to areas such as regulating food safety, labelling, generic marketing of healthy foods, and warnings against unhealthy foods. While the private sector does develop and market more nutritious products and processed foods, such as complementary and fortified foods, for the most part these products are still targeted at the socioeconomic groups that can afford to pay for them. Some companies are developing business models that target the “base of the pyramid,” but these initiatives are limited and most have not yet been scaled up.

Some governments in Asia, such as India and Indonesia, still manage public food distribution systems to make available (usually subsidized or free) basic food commodities to the most vulnerable. These programs offer another platform that can be used to scale up nutrition interventions, and they are particularly useful for targeting the poor. Undernutrition can also be addressed through food systems by working directly at the agricultural production stage (e.g., biofortification) to produce more nutritious food that is affordable for target groups.

While the dynamism of the private sector in driving food systems offers a good opportunity for reaching poor people in innovative ways (e.g., through creative marketing campaigns), there are limits to the contribution that food systems can make in addressing undernutrition. Such limitations include: too much emphasis on creating shareholder value and profitability in the private sector, which limits a product’s availability for poorer segments of the population; a relatively high level of individual behavior change required on the part of consumers (except for fortification), which can act as a disincentive to uptake; and, in the case of bio-fortification, a long lead time from the research stage to when improved foods reach the markets—often as long as ten to fifteen years.

In both health systems and food systems, achieving high coverage requires a combination of supply-driven action by government and the private sector. Another critical component is individual behavior change. Additionally, while some interventions that are mandated and delivered universally (e.g., vitamin A supplementation and universal salt iodization) are easier to implement, others (e.g., breastfeeding and complementary feeding) are dependent on communications, education, and related behavior changes.

⁹ Through health workers and volunteers, planning processes, physical infrastructure such as hospitals and clinics, and a national communications infrastructure.

¹⁰ Food systems include food markets where the private sector plays a leading role. Food markets are where food is exchanged for money or labor (in food-for-work programs). Food is either sold at prices generated by the combination of supply and demand or at rates that include a subsidy from the government.

Nutrition at Scale: Examples of Success

As previously noted, a range of cost-effective interventions to improve nutritional status with proven effectiveness at scale do exist. As a result, focus in most countries can now shift from focusing primarily on research on new products and demonstration of biological impact under controlled conditions (efficacy) to an emphasis on scaling up proven interventions in addition to such research. While the successes represent only the tip of the iceberg compared to the need, there exist some impressive examples in the Asia-Pacific region of programs and business practices that have reached very high numbers of people. The following are examples of successful scale-up programs, as well as an analysis of some of the key determinants of these successes.

Timelines for scale-up are different for different contexts and geographies. Some interventions might be scaled up over a few months, while others may need several years.

NEPAL

Iron Folic Acid Supplementation during Pregnancy

Nepal has been scaling up successfully a national training and tablet distribution program aimed at pregnant women. Coordinated by the Ministry of Health as part of the National Anemia Control Programme (NACP), the program is providing iron folic acid (IFA) supplements to pregnant women and succeeding in convincing a relatively high percentage of them to take the prescribed quantities of supplements required throughout pregnancy. Women in developing countries often do not comply with IFA supplementation because it causes side effects (e.g., nausea, constipation, and dark stools) that lead them to reject the supplements. This problem has largely been overcome in Nepal as a result of improved training of community volunteers and more targeted communications. Since its initial implementation in 2003, the program has gradually scaled up from a pilot of a few districts to 34 of 75 districts in the country, reaching approximately one million pregnant women annually. The program continues to scale up further.



Children in Nepal

Success Factors

Good Coordination	High level of collaboration among development partners
Stable Funding	Sources of funding are provided by the Government of Nepal and other partners (such as the Micronutrient Initiative)
Strong Government Leadership	National training and tablet distribution coordinated by the Ministry of Health
Strong Technical Capacity	A system of female community volunteers in country (built through previous programs)
Strong Monitoring System	NACP conducts annual surveys of both coverage and compliance
Well-Designed Program	NACP possesses a targeted communications program

CHINA

Universal Salt Iodization

China is one of the most successful countries in the global effort to achieve universal salt iodization. This intervention is proven to protect children and women from iodine deficiency disorders (IDD), which impair cognitive development, reduce productivity, and cause stillbirths. More than 97 percent of the salt currently consumed in China contains sufficient amounts of iodine to protect its population from IDD (up from less than 20 percent in 1990).¹¹

China's achievements in IDD elimination are the result of a successful alliance of multiple government departments, led jointly by the health and salt sectors in the country. External advocacy, technical assistance, and funding have been pivotal in driving the program and funding capital investments in the salt industry. These factors have also been critical for leveraging counterpart funding—considered only second in importance to political will in support of universal salt iodization at the highest level of China's leadership (e.g., the prime minister and the State Council). While the mandatory iodization of salt is governed by several national and provincial regulations, it is enforced by linking producer compliance with licensing on an ongoing basis. As a countercheck, the Ministry of Health independently monitors salt iodine at all levels of the distribution system. The program was initially implemented by a state salt monopoly, and it is now robust and well entrenched within the salt production and distribution system. It can be sustained even as the industry becomes decentralized and privatized.



Schoolgirl in China

Success Factors

Good Coordination	High level of commitment amongst all stakeholders Strong engagement between government and industry
Stable Funding	Champions within the highest levels of government
Strong Government Leadership	Political will at the highest level of China's leadership
Strong Technical Capacity	Strong national capacity to produce effectively iodized salt
Strong Monitoring System	Annual surveys of coverage leading to targeted corrective action in areas of lower performance Comprehensive regulatory regimes with single agency overseeing all salt sector responsibilities
Well-Designed Program	Well-defined and managed national program Efficient and functional program-management structures with clear allocation of responsibilities and coordination arrangements and financing plan

¹¹ National Salt Monitoring Survey, 2006. Bureau of Disease Control, Ministry of Health, Government of China.

INDIA

Addressing Micronutrient Deficiencies in Children through the Integrated Child Development Services (ICDS) in the State of West Bengal

The Government of India's Integrated Child Development System (ICDS) aims to reduce undernutrition in children under six years of age and to improve early childhood education and development. The program is implemented by individual states and provides, inter alia, a food supplement either through an on-site lunch or take-home ration. Although there is an overall national framework for the program, states have flexibility in choosing specific modalities for implementation. At the national level, the program has so far had very little impact on child undernutrition rates, which suggests the need for more innovation and quality improvement. However, some states have in recent years experimented with innovations that have shown impact. A number of states, such as West Bengal, have made impressive progress in scaling up these new approaches.

In West Bengal, a multi-micronutrient powder called Vita-Shakti™ was developed to fortify meals at the village level.¹² This innovation has been proven to work and has now been scaled up to the entire state. This program in West Bengal is one of the few interventions in ICDS that has led to an improvement in nutritional status in recent years. In addition to an efficacious product, this scale-up effort owes its success to very high-level political commitment: the chief minister officially launched the initiative with a coordination committee chaired by the chief secretary. This committee enforced strong coordination between the various state ministries involved. A special “West Bengal Micronutrient Society” was established by the Government of West Bengal to ensure proper management and monitoring of the initiative.

Success Factors	
Good Coordination	Strong coordination between West Bengal's ministries and high levels of state government leadership
Stable Funding	Stable sources of funding are provided by the Government of West Bengal and other partners
Strong Government Leadership	Champions within the highest levels of government
Strong Technical Capacity	Technical capacity provided by development partners and the private sector
Strong Monitoring System	West Bengal Micronutrient Society established to ensure proper management and monitoring
Well-Designed Program	Program with a clear focus on an intervention that works

¹² Vita-Shakti™ has been shown to be acceptable to beneficiaries (women and children) and health system workers; it is feasible (e.g., training can enable proper utilization); it is cost-effective (it achieves biological impact at low cost); and it is affordable (requires only approximately 5% of existing government budget for food in ICDS). Source: Verma, Jessica et al., “Community-level Micronutrient Fortification of a Food Supplement in India: a Controlled Trial in Preschool Children Aged 36–66 Months,” in *American Journal of Clinical Nutrition*, Vol. 85, No. 4, April 2007, 1127–33.

USA/CANADA

Prevention of Neural Tube Defects through Mandatory Folic Acid Fortification

The United States and Canada have been fortifying most staple foods (e.g., wheat flour, breakfast cereals, milk, oil, and salt) for several decades, and this practice has virtually eliminated micronutrient deficiencies, including iodine deficiency disorders, anemia, and vitamin A deficiency, among their populations. However, until recently the two countries still had relatively high rates of preventable neural tube defects.¹³ In 1997, using scientific evidence as a basis for action, U.S. authorities mandated the fortification of wheat flour, cornmeal, pasta, and breakfast cereals with folic acid, a mandate that went into effect by January 1, 1998. Health Canada concurred with the U.S. decision to fortify flour with folic acid based both on the public health benefits and the benefits to industry of harmonizing with the United States. Accordingly, Canadian authorities made amendments to Canada's Food and Drug Regulations in November 1998 to adjust the levels of all nutrients used in Canadian enrichment of flour to harmonize with U.S. standards. Consultations with the flour industry also favored harmonization of Canadian enrichment levels for flour with the U.S. regulations to avoid confusion and facilitate the manufacture of flour products to be marketed in both the United States and Canada. Industry compliance in both countries is monitored by ongoing domestic and import inspection programs. These collaborative actions resulted in a dramatic (50 percent) reduction of neural tube defects in both countries within five years.

Success Factors

Good Coordination	Strong engagement between government and the private sector
Strong Government Leadership	Fortification efforts led by the U.S. Government and the Government of Canada
Strong Technical Capacity	Rigorous exercise to establish efficacy and effectiveness
Strong Monitoring System	Engagement with the private sector along with an effective regulatory system Strong penalties for noncompliance

BANGLADESH

Vitamin A Supplementation for Children 6–59 Months

The World Health Organization (WHO) and UNICEF recommend vitamin A supplementation every 6 months for children 6–59 months living in countries that have high rates of under-five deaths. These supplements have been proven to reduce child mortality by an average of 23 percent. Bangladesh is a good example of a country that has successfully implemented a large-scale vitamin A supplementation program (reaching more than 85 percent of children and implementing special approaches for the “hard to reach”). Additionally, it is one of the few countries currently paying for the supplements from its own development resources (an important sustainability factor). Most countries currently receive the supplements



Woman with infant in Bangladesh

¹³ Neural tube defects are birth defects of the brain and spinal cord. Common causes of neural tube defects include insufficient maternal intake of folic acid and/or vitamin B.

through an in-kind donation from the Government of Canada through the Micronutrient Initiative in collaboration with UNICEF.

Bangladesh is not unique in having scaled up vitamin A supplementation for young children; some 80 other countries have such successful programs. Where Bangladesh is ahead of most is in reducing its dependency on external donors to fund this effort. Although Bangladesh still receives assistance from its development partners for the delivery of the capsules, the country uses its own budgetary resources to procure the capsules. This is an important step to ensure the sustainability of the program and one which very few countries have yet taken.

Success Factors	
Good Coordination	High level of collaboration among development partners
Stable Funding	Inclusion of vitamin A funding in government budget
	Reducing dependency on external donors Regular availability of funds through a World Bank loan
Strong Government Leadership	High level of commitment from the Government of Bangladesh
Strong Technical Capacity	Program implementation through a broad network of effective national NGOs
Strong Monitoring System	Reviews of performance after each six-month distribution
Well-Designed Program	Program draws on experience from partner organizations globally

MEXICO

Improved Nutrition through Conditional Cash Transfers – PROGRESA/ OPORTUNIDADES Program

OPORTUNIDADES (formerly called PROGRESA) is the first nationwide rural antipoverty human resource investment program in a developing country to offer conditional cash transfers to promote incentives for positive individual behavior. In the area of health and nutrition, OPORTUNIDADES brings basic attention to health issues and promotes health care through free preventative interventions such as nutritional supplements, hygiene and nutrition education, scholarships, and conditional monetary transfers for the purchase of food. Receipt of monetary transfers and nutritional supplements are tied to mandatory health care visits to public clinics.

The program was launched by the Mexican government in 1997 and grew to five million families in 2004, covering virtually the entire population at risk of hunger at an estimated annual cost of 38 billion pesos (approximately US\$3.5 billion). The poor children of Mexico in the rural areas where OPORTUNIDADES is currently operating are now more likely to enroll in school, eat a more diversified diet, and get more frequent healthcare than they were in the 1990s. A World Bank evaluation of the impact of OPORTUNIDADES on education shows that the program increased school enrollment, particularly for girls and most of all in secondary school, equivalent to about 0.7 more years of schooling. The implications of these findings are that participating children will have a lifetime earnings 8 percent higher than those of nonparticipating children due to educational benefits derived from the program.¹⁴

¹⁴ Alain de Janvry and Elisabeth Sadoulet, "Making Conditional Cash Transfer Programs More Efficient: Designing for Maximum Effect of the Conditionality," The World Bank Economic Review, 2006. 20: 1–29.

The program serves as a model that combines nutrition and health interventions with income transfers to poor families to improve nutrition, school enrollment, and, eventually, earnings. It is beginning to be adopted across Latin America, including in Honduras, Nicaragua, and Argentina.

Success Factors	
Stable Funding	Stable sources of funds provided by the Government of Mexico OPPORTUNIDADES is also the largest loan recipient in the history of the Inter-American Development Bank
Strong Government Leadership	Entrepreneurial government leadership with strategic and high-level political commitment
Strong Technical Capacity	Effective program management based on evidence derived from rigorous, high-quality evaluations Ability to target the interventions to the most needy segments of the Mexican population Real social demand for the program (covered 92,000 communities in 2007)
Strong Monitoring System	Rigorous, high-quality evaluations conducted by external centers of excellence linked to strong multidisciplinary national technical capacity
Well-Designed Program	Responsiveness of the program's design and content to the needs of the Mexican population Targets women as effective agents of change Refined logistics

Not Quite There Yet: Examples of Persisting Challenges

Wheat Flour Fortification in Indonesia: Loss of High-Level Political Commitment

In 2001 the Government of Indonesia decided that any flour sold in Indonesia must be fortified with select micronutrients. This decision came as a result of strong advocacy and technical assistance from the Coalition for Fortification in Indonesia (KFI), a network of senior Indonesian professionals from various sectors who lobby for fortification while providing the necessary technical assistance to achieve it. In collaboration with external agencies and donors, KFI succeeded in making flour fortification mandatory in Indonesia. Coverage of people consuming fortified wheat flour rapidly increased because most of the flour is milled by one large modern company.¹⁵

In January 2008, however, the government's stance on mandatory wheat flour fortification was reversed. The government essentially used the cut in fortification to show citizens that it was taking action on their behalf against food price inflation. This was counteracted by an aggressive advocacy and media campaign by a group of national champions of fortification. Although mandatory fortification is likely to be reinstated due to intense lobbying and media attention, this example highlights the constant risk of backsliding in nutrition programs and thus the need to maintain constant high-level political commitment.

Iron Folic Acid (IFA) Supplementation During Pregnancy in India: Low Political Priority and Operational Fragmentation

Despite nearly four decades of operation, the National Nutritional Anemia Prophylaxis Program has failed to reduce high levels of iron deficiency anemia in India. The most recent survey (NFHS III 2006) showed that six out of every ten Indian women and eight out of ten young children are anemic. While there is widespread recognition within Indian technical circles that anemia must be addressed, and a strong policy framework has identified IFA supplementation as one of the ways to control anemia in women, the coverage of IFA tablets in the country remains very low and has not increased in recent years. The Indian Clinical Epidemiology Network (INDIAClen) carried out a study in 2002 to assess perceptions among healthcare workers and women who should take the IFA program supplements and made some recommendations. Essentially, as is demonstrated by the Nepal case above, it is possible to overcome the barriers that are typically identified when attempting to scale up IFA supplementation programs. So why has this not yet worked in India?

A number of factors may explain why India's maternal IFA supplementation program is not scaling up.

1. Although anemia is recognized as a problem in India by nutrition and medical specialists, as is the issue of nutrition more broadly, it is still not a high political priority and so it is therefore not a high priority of government departments.
2. There are a multiplicity of supply channels involving state and central government departments and international agencies. This often creates confusion and results in irregular supplies at the field level.



Woman and child in
Indonesia

¹⁵ Over the years government and industry experts had expressed some concerns about the monitoring system (some more specific food testing techniques were required to detect the right levels of micronutrients in the flour), but overall wheat flour fortification had been accepted as a standard business practice in Indonesia, and there is a sense that sustainability had been achieved.

3. In order to be successful, IFA supplementation requires significant behavioral change by individual women, and for that to occur there must be strong training and program implementation.
4. Success also requires coordination of health and nutrition workers at the village level, a convergence that does not always exist. Providers often have a passive attitude and lack of clarity on program components such as product management, client identification, and counselling.

Because of these factors, conditions are not favorable to implementing the IFA supplementation program at a large scale in India at this time.

Zinc Supplementation for the Treatment of Diarrhea in Children (Globally): Lack of Political Commitment and Weak Technical Capacity

The WHO and UNICEF recommend the use of zinc supplementation along with oral rehydration salts as an adjunct treatment for diarrhea in children.¹⁶ Zinc supplementation is proven to reduce mortality due to diarrhea, and it was one of the key interventions recommended by the 2008 *Lancet* series mentioned earlier. However, access to zinc supplementation for children suffering from diarrhea is extremely limited in the developing world. Most developing countries have less than 1 percent coverage, and one of the best performing countries, Bangladesh, reports a coverage rate of only 12 percent. There is clearly much more to do in this area. So what is holding back progress?

To some extent, results are limited due to many of the same reasons that are holding back other interventions: low levels of political commitment, weak technical capacities, etc. Specific barriers to zinc supplementation scale-up include:

1. Absence of policies at the country level (despite a global statement from the United Nations)
2. No national strategies for scale-up and lack of supply of zinc tablets (inadequate production capacity)
3. Lack of endorsement by key opinion leaders such as pediatricians
4. Poor awareness on the part of health workers and beneficiaries of the benefits of zinc supplementation, which leads to poor compliance by beneficiaries

This is not an example of a failed intervention but rather an example of a failure to scale up a well-proven intervention as fast as is possible.

¹⁶ Source: WHO-UNICEF Statement on Clinical Management of Acute Diarrhoea, May 2004, http://www.unicef.org/nutrition/index_21433.html.

How to Make it Work: Key Determinants of Success

Experiences to date in scaling up nutrition interventions have shown that a number of critical factors must be in place in order to achieve sustainable scale-up. These include:

Government leadership and championship

Strong leadership from government is required for a number of reasons. Nutrition interventions that are implemented through the public sector often fall under the responsibility of several ministries and this often leads to a situation where nutrition is “everybody’s concern but nobody’s baby.”¹⁷ Strong leadership at high levels of government have helped overcome this problem in countries where there has been successful scale-up. Such strong leadership not only helps coordinate the efforts of government ministries, it also establishes norms for the private sector that oblige them to participate in and comply with public programs.

Food fortification initiatives have been much more successful where government has sent a strong signal to the private sector, either by making fortification mandatory (as in the Canada-U.S. case of folic acid fortification) or by creating incentives for the private sector (e.g., generic marketing of fortified foods, tax and import duty exemptions, and subsidies on premix).

However, as critical as government leadership is, this is one of the most difficult factors to put into place. It remains a missing element in many countries of the Asia-Pacific region and an element that deserves more focus. Lessons could be learned from successful campaigns such as those that aim to build government commitment to fight HIV/AIDS.



Child receiving vitamin A supplementation in Pakistan

Clear public policy

Strong government leadership must be supported by public policies and programs that are tailored to reach those who are most in need of nutrition interventions. Public policy is required to provide incentives and penalties to guide the work of the private sector. For example, programs can encourage private-sector initiatives by funding some of the initial research required for product development and reducing initial market risk associated with trying to reach the poor through market mechanisms. There is a continuing need for public programs that directly address the needs of people with incomes in the bottom one or two quintiles. By supporting these groups (including through subsidies that reduce the direct or transaction costs of nutritious foods), governments not only can target their investments in nutrition to those who need it most, but they also can invest strategically in increasing national productivity and generating economic growth that helps people out of poverty.

¹⁷ Although there is usually a lead ministry, nutrition is a part (but usually a low priority) of the mandates of several ministries such as health, industry, food and food processing, agriculture, and science and technology.

Focus—Appropriately targeted public programs

The target beneficiaries of government nutrition programs in many Asian countries are not as appropriately defined as they should be; these programs often do not reach the poorest of the poor, and they tend to subsidize some who do not require the support. Most programs do not give the highest priority to children less than two years of age, despite strong evidence that this is a critical period in a child's development and that undernutrition during this period causes damage that is irreversible later in life. Many programs that target the poor (India's Targeted Public Distribution System, for example) have a large amount of "leakage" where a significant proportion of resources does not actually reach the poor due to factors such as lack of access by the poor as well as corruption.

A critical success factor for nutrition programs is focus. The examples of successful scale-up outlined in this paper were all sharply focused on a few key interventions, as opposed to "integrated development programs," which provide a broader range of services to communities but tend to be limited in scale.

Partnerships

The more successful examples of scale-up have been achieved by drawing on the different strengths and perspectives of the public, private, and civic sectors. Each sector brings a unique perspective and usually different skills. Undernutrition is a highly complex problem that requires all these skills and perspectives.

However, it is not easy for these three sectors to work together. In recent years some mechanisms such as national fortification alliances have been initiated in order to bring these sectors together around a common goal. Effective nutrition partnerships between the government, food processors, technical agencies, and consumer groups are currently in the early stages in most countries, and so far the experience has been mixed.



Woman and children in
Indonesia

There are specific complexities, such as a distrust of the private sector by some segments of the nutrition community, that need to be understood better. It is clear, however, that where governments have taken a strong leadership role, these partnerships have worked better. They also tend to work better in smaller countries, which suggests the need for subnational alliances in larger countries like India.

Incentives and penalties

Although the private sector is vibrant in the Asia-Pacific region and can and should provide much of the needed push to address undernutrition through sustainable business models, there remains an important role for the government to ensure that the right incentives and penalties are in place to protect consumers. As noted above, successful and sustainable scale-up requires that the government send clear signals to the private sector.

In the area of food fortification, a major lesson learned in the last decade is that without the level playing field created by government making fortification mandatory, and then regular testing of the product to ensure that false labelling claims are not made by companies, national food fortification programs

either do not scale up (companies do not see an incentive) or they are not sustained (companies cheat or discontinue fortification). The Indian state of Gujarat has made a decision that all wheat flour and oil in the state must be fortified. As a relatively large purchaser of food for its own programs, the state government effectively offers an incentive when it decides to purchase only fortified foods for its own needs. The penalties would typically be in the form of fines for noncompliance or public “denouncing” of companies that are not compliant.

Effective advocacy and communications

One of the biggest gaps in countries where nutrition interventions are not scaling up as rapidly as they should be is communications. While it is often important to have government as the messenger in communications and messaging for nutrition (government can be a neutral voice), it is also critical to draw on the expertise of the private sector to develop and implement effective strategies and tools. At the pilot/small-scale level, it is relatively easy for independent bodies such as NGOs to organize and deliver a communications and advocacy program. However, advocacy and communications change and shift as programs scale up, and it is much more important at that stage to have a strong voice from government. Communications efforts are required at several levels:

- Advocacy to build government and private-sector commitment where they are lacking.
- Marketing and demand creation for consumers to influence their consumption choices in favor of more nutritious (e.g., fortified) foods.
- Advocacy and communication to enhance demand for government nutrition programs (e.g., national vitamin A supplementation and zinc supplementation for treatment of diarrhea), which are too often still supply driven.
- Communications to help build partnerships as described in the previous section and to enhance coordination between the various government ministries required for effective scale-up. National coordination committees, for example, provide fora for communication that lead to improved coordination.



Community Health Promoter explaining the benefits of iodized salt to Lady Health Workers in Pakistan

National managerial and technical capacity

Successful scale-up requires national technical capacity in areas such as food technology for product development and refinement; biochemistry for food testing and impact assessment studies; epidemiology for nutrition surveys that help target interventions; and engineering for technological development (e.g., fortification devices). This capacity is present in some countries of the Asia-Pacific, but its absence is a serious impediment in others. Some countries, like Vietnam, India, and Indonesia, have created national public institutes of nutrition, which contribute to varying degrees. In other countries, such as Pakistan, the private sector and academic institutions are the main sources of technical expertise.

Special attention will need to be given to harnessing this expertise where it exists and developing it where it is weak. Ultimately, however, programs cannot scale up unless countries have “strategic capacity.” In other words, countries need citizens who are skilled at managing their way through political systems to

move the nutrition agenda forward at the national and subnational levels. These “nutrition engineers” also need to have strong project/program management skills.

Multi-year resource commitment

Scaling up national nutrition interventions requires a significant investment of finances, administration, and human capital. Small-scale programs begin with relatively limited resources, which can be provided by development partners, but a different financing mechanism, such as budgetary allocation or recovery from consumers, is needed for carrying small programs to a national scale. While these resources can come from both the public and private sources, and from domestic as well as external sources, it is critical that funds be committed over several years and ideally come from a variety of sources to minimize the risk of cancellation of funding.

As with any development intervention, attention also needs to be given to avoiding conflict of interest with regard to financial contributions from the private sector. Yet the experiences of major UN organizations such as UNICEF and the World Food Programme, which receive funds from private sector partners without conflict of interest, show that this risk is manageable.

Monitoring and feedback mechanisms

Any successful intervention requires regular performance monitoring. The private sector monitors sales and consumer acceptance closely because sales and profitability depend on this feedback. Unfortunately, the incentive to monitor within public programs remains weak, although it is increasing as programs become more driven by results and evidence. The most successful examples of scaled-up nutrition programs have had well-designed and managed monitoring systems.

Monitoring helps programs focus corrective measures on areas of lower performance (either program components or specific geographic areas). The feedback provided by monitoring is particularly important in nutrition because the experience of scaling up many specific interventions is limited. Thus, in most cases an iterative approach is required where changes in implementation strategy are expected (and made based on the results feedback) when programs are launched.

These performance-monitoring systems should be simple and focused on essential performance areas. As such they do not need to be highly complex or expensive. Nevertheless, they do require dedicated resources. Monitoring a smaller scale program requires a different approach than monitoring a large-scale program. While the former can often be managed by personal interactions, the latter requires more sophisticated systems and tools, including sampling and independent assessments.

Scaling Up Nutrition Interventions Globally

This paper has outlined a number of country-level examples of successful scale-up and has explored some of the key determinants of that success. Some of these success factors are specific to nutrition programs, but many are simply good practices in development programs that succeed at scale. Ensuring that programs reach individuals who are most at risk is an especially critical requirement for nutrition interventions.

This paper has also highlighted some persistent problems in order to illustrate the challenges that remain in bringing success to scale. Unfortunately, there remain far more examples of persistent problems in scaling up nutrition interventions than examples of success.

The world could be a remarkably better place for women and children in less than a decade if even only a small number of the most cost-effective nutrition interventions were scaled up. There is now growing recognition in the nutrition field that the challenge ahead is much less about scientific research than it is about the operational and management challenges of a scaling-up process. As this paper has outlined, there are lessons to be learned from initial scale-up successes in nutrition, but the field should also draw from other areas of development work, such as microfinance and HIV/AIDS awareness campaigns. A focus on scaling-up will require much more effective collaboration among the current development partners working in nutrition and a change in the core skill set expected of a typical nutrition worker.

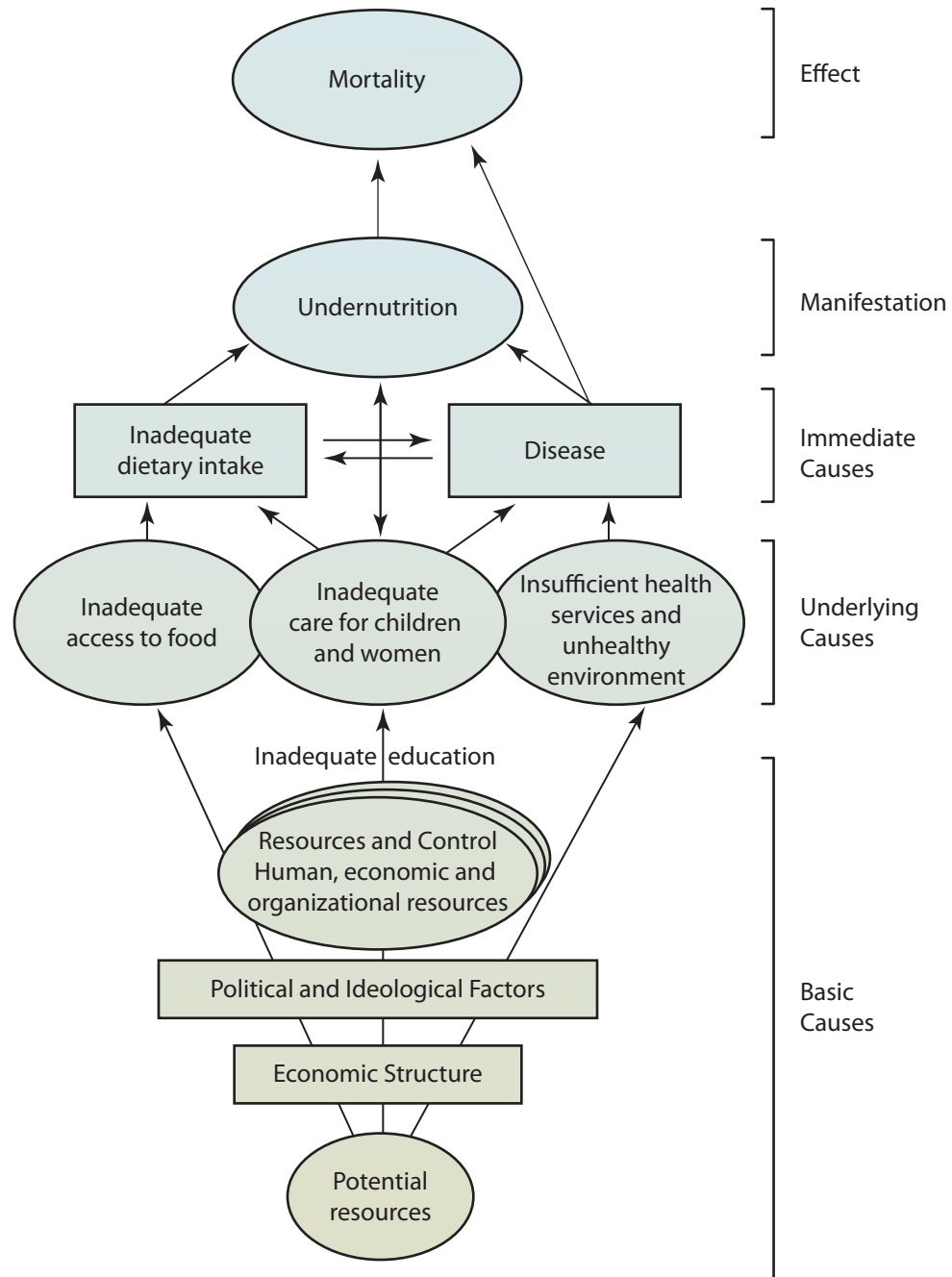
Although the complexities of nutrition can make successful global scale-up seem impossible, previous achievements in ensuring that the world's newborns are protected from iodine deficiency disorders through universal salt iodization demonstrate that it is indeed possible. In 1990 less than one in five households in the world used iodized salt. Today 70 percent of households globally have access to iodized salt. Although the job is not yet complete, the tremendous global progress already made through universal salt iodization means that every year 90 million newborns' brains are protected against a significant loss of learning ability.

Similar progress has been achieved in protecting young children from death and blindness caused by vitamin A deficiency. The percentage of children 6–59 months of age who are protected from vitamin A deficiency through supplementation programs in developing countries (two doses per year at six-month intervals) has increased from 16 percent in 1999 to its current impressive level of 58 percent.

Both of these global success stories—albeit still incomplete because more work needs to be done in both cases—have been achieved due to a combination of the key determinants of success outlined in this paper, first at individual country levels and then through the sharing of experiences between countries.

Appendix i

Analytical framework for maternal and child health and nutrition



Source: UNICEF (1990) Strategy for improved Nutrition of Children and Women in Developing Countries. New York: UNICEF: Annex 2.



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