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How Nutrition Improves: Half a Century of Understanding and Responding to the Problem of Malnutrition

Stuart Gillespie and Jody Harris

Understanding and responding to the problem of malnutrition

- Undernutrition reduces global GDP by USD$1.4–2.1 trillion a year—the size of the total economy of Africa south of the Sahara.
- While many countries are making progress in reducing child undernutrition, another form of malnutrition—overweight and obesity—is now changing the health landscape in every region of the world.
- Lessons on how to improve nutrition in the real world and in real time are needed.
- This book combines a review of various analyses and studies with a narrative approach to convey the drivers and pathways of success in nutrition in different contexts and at different times.

Paradigms in international nutrition (1 of 2)

Panos/D. Rose

- 1950–1960s: Focus on hunger, famine, and the metabolic consequences and treatment of severe protein deficiency – the assumed mechanism for severe malnutrition
- 1970s: The concept of multisectoral nutrition planning gains momentum in reaction to largely food supply–oriented interventions that did not address the wider, nonfood drivers of malnutrition and had little impact
- 1980s: The failure of multisectoral planning gives rise to the era of "nutritional isolationism" with a focus on micronutrient supplementation and breastfeeding.

Paradigms in international nutrition (2 of 2)

- 1990s: UNICEF develops its nutrition framework and nutritionists focus on micronutrients, while the nutrition policy literature explores the political economy of nutrition
- 2000-2010: Work begins on promoting biofortified crops and the *Lancet* Maternal and Child Nutrition series significantly raises the profile of nutrition in the development community
- 2010-2015: High-level political commitment to address undernutrition ramps up significantly among international UN organizations, donors, NGOs, and governments

Structure of *Nourishing Millions*

- Transforming Nutrition Interventions
- Transforming Sectoral Actions
- Transforming National Policy and Programming
- Leadership
- Way Forward

HarvestPlus/E. Simpungwe

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On the Front Line: Community Nutrition Programming

Stuart Gillespie and Judith Hodge

Community nutrition

Community nutrition programming can be *community-based* (referring to location of intervention) or *community-driven* (active involvement of community members in designing and/or implementing the intervention).

Iringa Nutrition Program, Tanzania

- In 5 years, the program almost eliminated severe malnutrition (from 6.3% to 1.8%) and reduced moderate malnutrition by half.

Tamil Nadu Integrated Nutrition Project

- From 1980-1989, child underweight prevalence dropped by around 1.5 percentage points per year in participating districts, twice the rate of nonparticipating ones.

Panos/G. Pirozzi

Community nutrition case study: SHOUHARDO (1 of 2)

Large-scale program that aimed to reduce malnutrition and chronic food insecurity in poor and vulnerable households in Bangladesh. Provided direct nutrition interventions and services to improve household food production and water, sanitation, and hygiene.

Impact

- Phase I (2004-2009): Stunting among children 6-24 months old decreased from 56% to 40% in the program's operational area. Extreme poor households experienced greater reductions in stunting than poor households: 21.3% vs. 12.7%.
- Phase II (2010-2015): Stunting among children <5 yrs decreased from 61.7% to 48.8%.

Community nutrition case study: SHOUHARDO (2 of 2)

Factors contributing to success

- Rights-based, livelihoods approach to address both the conditions of poverty and to promote a ‘culture of equal citizenship rights'
- Targeting of the poorest and most vulnerable households
- Combined both nutrition-specific approaches (e.g. food assistance; health, hygiene, and nutrition support) and nutrition-sensitive approaches (e.g. economic interventions; access to safe water)
- Components to strengthen local governance and adaptation to climate change added to second phase

Panos/S. Das

Community nutrition: Lessons learned

- Factors that contribute to successful community nutrition programming include
  - Favorable context and promotion of enabling environments
  - Process of program development driven by participation, local ownership, and empowerment
  - Appropriate program content and program design with adequate coverage and targeting
  - Program management and implementation with effective intensity of resource use per participant

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Off to the Best Start: The Importance of Infant and Young Child Feeding

Judith Hodge

Infant and Young Child Feeding (IYCF)

- Best practices for IYCF in the critical 1,000 days window include breastfeeding and complementary feeding
  - Initiating breastfeeding within 1 hour of birth
  - Exclusive breastfeeding for the first 6 months
  - Continued breastfeeding up to age 2 and beyond
  - Introducing safe, age-appropriate soft and solid food starting at 6 months of age
- 25 countries increased their exclusive breastfeeding rate by 20 percentage points or more, putting them on track to achieve the World Health Assembly target of increasing the exclusive breastfeeding rate to at least 50% by 2025.
- Education interventions increased exclusive breastfeeding by 43% at day 1, 30% at 1 month, and 90% from 1-5 months.

IYCF Case Study: Brazil (1 of 2)

Brazil improved breastfeeding practices from the mid-1970s to late 2000s through a national program and targeted communication strategies.

Impact

- Increased median duration of breastfeeding from 2.5 months (1974/5) to 14 months (2006/7)
- Increased exclusive breastfeeding rates from 4% (1986) to 48% (2006/7)

IYCF Case Study: Brazil (2 of 2)

Factors contributing to success

- Launched National Program for the Promotion of Breastfeeding through mass media campaign
- Targeted communication strategies through messages tailored to the local context and specific barriers to breastfeeding
- Increased institutional capacity and reduced reliance on foreign aid to fund the national program
- Overall improvements in access to maternal and child health and nutrition services and pro-poor policies (e.g. targeted cash transfer programs)
- Government support for human milk banks in neonatal intensive care units throughout Latin America

IYCF Case Study: Bangladesh

Bangladesh re-evaluated its breastfeeding promotion efforts after exclusive breastfeeding rates remained static between 42-46% from 1994-2007.

Impact

- Exclusive breastfeeding rates increased from 48% to 88% in areas where innovative community-based breastfeeding promotion approaches were scaled up through the Alive & Thrive program (2010-2014)

Factors contributing to success

- Engaging with women who had little contact with health sector maternity services
- Scaling up community-based approaches such as community nutrition promoters and mother-to-mother support groups

IYCF Case Study: Sri Lanka

Sri Lanka improved EBF rates between 1995 and 2007 by extending breastfeeding promotion from health facilities to the community.

Impact

- Increased average rate of EBF among infants up to 6 months from 17% (1995) to 76% (2007)

Factors contributing to success

- Extensive lactation support training for health workers in hospitals and field clinics and public health midwives making home visits
- Engaging with women at both health facility and community levels
- Outreach to extend breastfeeding into the community

IYCF Case Study: Alive & Thrive Program (1 of 2)

Alive & Thrive improved IYCF practices through multifaceted programs at scale in three very different contexts: Bangladesh, Ethiopia, and Vietnam.

Impact

- Bangladesh: Exclusive breastfeeding in infants <6 mths increased from 49% to 86% in intervention areas from 2010-2014; 30 percentage point increase in proportion of children consuming a diverse diet
- Vietnam: Exclusive breastfeeding nearly tripled in intervention areas, initially lower than 20%
- Ethiopia: From 2009-2014, doubled the proportion of children meeting minimum dietary diversity and minimum adequate diet in program evaluation areas; minimum meal frequency increased from 46% to 70%

IYCF Case Study: Alive & Thrive Program (2 of 2)

Factors contributing to success

- National mass media campaigns allowing millions of mothers to be reached in a short time
- High-quality interpersonal counseling services in health facilities
- Innovative social franchise model (Vietnam) for delivering infant and young child nutrition counseling services

Panos/B. Press

IYCF: Lessons Learned

- National plans can create an enabling environment through adoption of legislation on marketing of breast-milk substitutes, baby-friendly maternity facilities, and skilled support by health providers and community workers.
- In Brazil, tailored messages sensitized decision makers and the public and addressed specific barriers to breastfeeding, such as the belief that women do not produce enough milk for exclusive breastfeeding.
- In Bangladesh, community-based breastfeeding promotion helped reach women that otherwise had little contact with health sector maternity services.
- In Sri Lanka, extensive training provided to health facility providers and midwives making house visits helped engage women at the health facility and community level.
- Alive & Thrive's program of advocacy, community mobilization, and mass media allowed countries to provide high-quality counseling in health facilities and reach millions of mothers quickly through mass media.

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Hidden Hunger: Approaches to Tackling Micronutrient Deficiencies

Judith Hodge

Micronutrient interventions (1 of 2)

- More than 2 billion people suffer from micronutrient malnutrition, known as "hidden hunger."
- "The big 3"
  - Vitamin A deficiency – leading cause of blindness in children
  - Iodine deficiency – causes 18 million babies to be born mentally impaired each year
  - Severe anemia (iron deficiency) – associated with 115,000 deaths of women during childbirth per year
- Targeting prevention/treatment to pregnant and lactating women, infants, and young children yields higher rates of return by improving health, nutritional status, and cognition later in life.

Micronutrient interventions (2 of 2)

Micronutrient Initiative

- Global efforts to ensure access to iodized salt reduced the number of iodine-deficient countries from 130 before 1990 to 32 in 2011.
- Vitamin A supplementation was scaled up to improve coverage rates of children from 16% in 1994 to 77% in 2009.
- Distribution of micronutrient powder sachets by UNICEF and the World Food Program rose from 50 million to 350 million from 2008-2010.

Micronutrient case study: universal salt iodization in China (1 of 2)

China successfully scaled up universal salt iodization through the National Iodine Deficiency Disorders Control Program, forming a partnership between the Ministry of Health and the salt industry.

Impact

- Consumption of iodized salt increased from 20% in 1990 to >97% of salt consumed in 2005.
- Production and distribution of salt in China rose from 5 million tons (not all iodized) to 8 million tons of iodized salt in under 7 years.

Micronutrient case study: universal salt iodization in China (2 of 2)

Factors contributing to success

- High-level political leadership recognized the impact of iodine deficiency on children's intelligence and the implications for human and economic development.
- The State Council established a special fund of US$125 million to upgrade production facilities for iodized salt and re-centralized the salt industry as a state monopoly with legal enforcement systems to prohibit the sale of non-iodized edible salt.
- Iodized oil supplementation and subsidies for iodized salt reached vulnerable populations.
- A shift from national to provincial standards addressed areas at risk of iodine excess.

Micronutrient case study: "Sprinkles" in Mongolia (1 of 2)

Mongolia's Ministry of Health collaborated with development partners to deliver an integrated nutrition package, including micronutrient powders called Sprinkles, targeted to pregnant and breastfeeding women and children <5 yrs to address alarming rates of anemia and rickets.

Impact

- Anemia prevalence fell from 55% to 33% during the pilot phase, 2002-2004
- Rickets prevalence fell from 62% to 25% and stunting fell from 26% to 9% during the 2nd phase, 2005-2010
- Program scaled up to national level reaching 50,000 children 6-24 months old

Micronutrient case study: "Sprinkles" in Mongolia (2 of 2)

Factors contributing to success

- Powder wrapped in culturally acceptable packaging with local language instructions and artwork
- Adjustments to pilot program included new amounts of nutrients in Sprinkles, vitamin D supplementation, behavior change initiatives, reduced production costs, and volunteer mothers to mobilize communities
- Micronutrient working groups established at national, provincial, and district levels

Micronutrient interventions: Lessons learned

- Staged approaches – from pilot to district to national levels – afford opportunities to iron out issues such as the levels of micronutrients required by different populations.
- Nutrition champions in influential positions help ensure support and government buy-in for interventions.
- Integrating micronutrient interventions into existing health programs and training community volunteers can help make them more sustainable.
- Ongoing monitoring and evaluation is crucial for gauging whether interventions are still relevant.

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Addressing a Neglected Problem: Community-based Management of Acute Malnutrition

Judith Hodge and Jessica White

Community-based Management of Acute Malnutrition (CMAM) (1 of 2)

- Development and adoption of CMAM moved treatment of Severe Acute Malnutrition from inpatient hospitals and feeding centers to communities – dramatic improvements identifying, rehabilitating, and curing children with Severe Acute Malnutrition
- 3 components of CMAM
  - Community members screen and identify Sever Acute Malnutrition cases by measuring mid-upper-arm circumference
  - Outpatient therapeutic program for children without medical complications and provision of ready-to-use therapeutic food to last until next visit
  - Inpatient care for children with medical complications and/or poor appetite
  - Some countries include a 4th component: supplementary feeding for children with Moderate Acute Malnutrition

Community-based Management of Acute Malnutrition (CMAM) (1 of 2)

- CMAM officially endorsed by UN and WHO in 2007
- CMAM model has been found to perform consistently well across varied contexts with recovery rates over 90%, death rates below 2%, and default rates of less than 10%

Panos/S. Torfinn

CMAM Case Study: Malawi

Food emergencies in 2001/2 and 2005 led to global acute malnutrition rates reaching 6.2% in the country and >10% in 4 districts. Ministry of Health officials championed the use of the CMAM approach and it was adopted as a national strategy in 2006.

Impact

- Malawi has the highest level of CMAM scale-up in the world: programs in all 28 districts and health facilities; in-patient care in 98% of hospitals; and 82% of health centers act as outpatient therapeutic programs
- Under-five mortality rates have decreased from 174 to 71 deaths per 1,000 live births from 2000 to 2012

Factors contributing to success

- Office of President assumed responsibility for coordinating nutrition
- CMAM Advisory Service provides advice on scale-up, integration, and service delivery
- Government has developed a plan to integrate the approach into Ministry of Health services

CMAM Case Study: Ethiopia

The 2002/3 drought and food crisis catalyzed scale-up of the CMAM approach from pilot programs in 2 sites to inpatient facilities and outpatient therapeutic programs in 165 hospitals and health centers. After Severe Acute Malnutrition cases spiked in 2008, the government extensively decentralized treatment services to frontline health workers to widen access to and coverage of services.

Impact

- The number of children treated for Severe Acute Malnutrition rose 12-fold from 2008 to 2011.
- Mortality rates for children <5 yrs fell from 146 to 68 deaths per 1,000 live births between 2000 and 2012.

Factors contributing to success

- CMAM was included as a key component of the National Nutrition Strategy and Health Sector Development plan, which guides investment in the health sector.
- Decentralization of treatment services to community-level health workers facilitated rapid scale-up of community-based approach.

CMAM Case Study: Niger (1 of 2)

Global acute malnutrition surpassed the emergency threshold of 15% in 2005 triggering a major emergency response – national CMAM guidelines were developed and included treatment of Severe Acute Malnutrition as well as Moderate Acute Malnutrition. The government integrated all stakeholders managing Severe Acute Malnutrition into the national health system, and it launched the 3N Initiative (Nigeriens Nourish Nigeriens) in 2011.

Impact

- By 2011, all 50 national, regional, and district hospitals provided inpatient care for Severe Acute Malnutrition and 772 of 850 integrated health centers offered outpatient therapeutic program services.
- Prevalence of acute malnutrition remains high but the under-five mortality rate has been halved from 227 to 114 deaths per 1,000 live births from 2000 to 2012.

CMAM Case Study: Niger (2 of 2)

Panos/D. Telemans

Factors contributing to success

- National CMAM guidelines, followed by the government directive to integrate operations for managing Severe Acute Malnutrition, contributed to coordinated scale-up
- High-level commitment to nutrition and CMAM approach: Ministry of Health leads expansion of CMAM through its Nutrition Directorate and Prime Minister's Office assumes responsibility for emergency nutrition response

CMAM: Lessons Learned

- High-level political commitment galvanized scale-up of the CMAM model.
- Engaging Ministry of Health is critical, especially for scaling up NGO-run pilots to national programs.
- Severe Acute Malnutrition is a broad problem that needs to be built into health and nutrition plans.
- CMAM programs need to be costed into government budgets but Malawi is the only case study to have done so.
- Progress to reduce wasting will require prevention strategies in addition to treatment of Severe Acute Malnutrition (e.g. improved infant and young child feeding; hygiene & sanitation; social protection).

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From the Ground Up: Cultivating Agriculture for Nutrition

Sivan Yosef

Agriculture

- Agriculture is linked to nutrition not only as a source of food but also
  - As a source of employment for the majority of the world's rural people, who can use the income they earn to purchase nutritious food or use towards education or health
  - Through policies on subsidies, taxes, and trade that determine the price of crops and affect the income of sellers and purchasing power of consumers
  - By exposure to vector-borne diseases from irrigation or zoonotic diseases from animal husbandry
  - Through gender roles – women's control of resources and empowerment has been linked to a larger share of the household budget allocated to food and higher per capita calorie availability, household dietary diversity, and better maternal nutrition

Agriculture case study: Homestead food production (1 of 2)

Helen Keller International developed the homestead food production model combining home gardens and animal husbandry with information to help people adopt better agriculture, health, nutrition, and hygiene practices, as well as with actions that give women more control over resources and decisionmaking authority in their households.

Impact

- In Bangladesh, the project grew from a 1990 pilot covering 1,000 households to reaching 870,000 households – half of the country's subdistricts – and partnering with the government and over 70 NGOs.
- The model in Burkina Faso was improved, targeting women and children in the first 1,000 days of life and incorporating behavior change communication. It reduced wasting (low weight for height) in children by 8.8 percentage points, diarrhea by 15.9 percentage points, and anemia by 14.6 percentage points, suggesting that this type of model is more effective than home gardening alone.

Agriculture case study: Homestead food production (2 of 2)

Factors contributing to success

- Built on existing local practices and used local varieties
- Intervention model improved with better communication about optimal agriculture, health, nutrition, and hygiene practices
- Emphasis on the role of women including training on best practices and enlisting women in communities to share information about health and nutrition

Agriculture case study: Biofortification (1 of 2)

HarvestPlus and its alliance of more than 70 partner organizations are working to breed micronutrients such as vitamin A, zinc, and iron into the staple crops that poor people commonly eat.

Impact

- A study in the Philippines showed a 20% increase in serum ferritin and body iron among women consuming high-iron rice.
- In Mozambique, biofortification of orange sweet potato reduced the prevalence of vitamin A deficiency among children by 15%.

Agriculture case study: Biofortification (2 of 2)

Factors contributing to success

- Biofortified crops have an acceptable level of micronutrients bred into them and retained, and the micronutrients must be bioavailable
- Farmers accept and adopt biofortified crops on a large scale
- Target populations must accept and consume biofortified crops

HarvestPlus

Agriculture: Lessons learned

- Combining agricultural programs with behavior change communication and a focus on gender may have larger impacts than standalone home gardening initiatives.
- Long-term impact is a challenge and will require working with local partners around the world to help design, implement, and evaluate programs to build up local capacity, and to share existing local tools and practices.
- Research is key and contributed to the enthusiasm for and improvements to programs for biofortification and homestead food production. The relationship between agriculture and nutrition deserves more research to generate stronger program designs and understanding of impact pathways.

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Reducing Risk, Strengthening Resilience: Social Protection and Nutrition

Scott Drimie and Sivan Yosef

Social Protection

- Social protection usually comprises three types of public interventions
  - Social safety nets – targeted, noncontributory programs to transfer resources to poor households
  - State-contingent insurance – pools contributions from individuals or households to protect against risk; includes social or health insurance
  - Social-sector policies – e.g. waived health care facility fees, free primary schooling, or targeted preventative malnutrition interventions
- Social protection can positively impact nutrition directly (e.g. food transfers) or indirectly (e.g. nutrition-sensitive interventions).
- Evidence of the impact of social protection on nutrition is mixed, but case studies suggest that it may be effective when combined with nutrition behavior change communication.

Social Protection Case Study: Mexico (1 of 2)

PROGRESA/Oportunidades/Prospera was initiated by the Mexican Government in 1997 as a multisectoral poverty alleviation plan to break the intergenerational transmission of poverty. Coverage increased from 140,500 households in 3,400 areas in the initial program to 2.6 million households in 72,300 areas in 2000, and one quarter of the Mexican population by 2008.

Impact

- 16% increase in average annual growth of children 1-3 yrs old and boosted intake of iron, zinc, and vitamin A
- The program may also have had positive nutrition-related health impacts including increased coverage of tuberculosis and measles vaccines, reduced illness among children <5 yrs, and increased use of health services

Social Protection Case Study: Mexico (2 of 2)

Reuters/A. Soomro

Factors contributing to success

- Conditional cash transfers targeting mothers – research suggests higher proportion of investment will go toward health and nutrition of children
- Provision of supplements as well as cash to buy more nutritious food to increase nutritional quality and diversity of children's food intake

Social Protection Case Study: Bangladesh (1 of 2)

Bangladesh has developed many social protection initiatives, including

- SHOUHARDO (Strengthen Household Ability to Respond to Development Opportunities) – one of the world's largest nonemergency food security programs
- Food for Asset Creation – component of Bangladesh's Integrated Food Security program paying a daily wage of food plus cash
- Rural Maintenance Programme
- Chars Livelihoods Programme – works with ultra-poor households in northwestern Bangladesh reaching >1 million people
- Transfer Modality Research Initiative – investigates effectiveness of different forms of social protection (cash transfer; food transfer; cash & food; cash with behavior change communication; food with behavior change communication)

Social Protection Case Study: Bangladesh (2 of 2)

Impact

- Preliminary findings suggest participation in Food for Asset Creation and Rural Maintenance Programme increased per capita food consumption by 194 and 271 kilocalories per person per day, respectively
- Studies from the Transfer Modality Research Initiative suggest that all forms of transfer meaningfully improved spending on food and nonfood consumption, calorie intake, and diet quality. Cash transfers combined with behavior change communication may have led to a decrease in child stunting of 7.3 percentage points (almost 3x the national average decline)

Factors contributing to success

- Rural infrastructure built through Rural Maintenance Programme used to provide food to communities during emergencies
- Inclusion of behavior change communication about nutrition and diet diversity, hand-washing and hygiene, micronutrients, infant and young child feeding, and maternal nutrition

Social Protection: Lessons Learned

- Combining social protection programs with behavior change communication may have positive impacts beyond food security, such as improved dietary diversity, child growth and health, use of health services, etc.
- Social protection interventions can help smooth food security volatility in times of crisis, particularly for poor and vulnerable households.
- Nutrition should be explicitly woven into social protection programs, adding nutrition-related components such as supplementation or behavior change communication, or changing the focus of a program (e.g. including protection of children in addition to individuals involved in productive labor).
  - Care must be taken in program design so as not to produce unintended effects such as increasing energy consumption among already-overweight populations.

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Clean Is Nourished: The Links between WASH and Nutrition

Sivan Yosef

Water, Sanitation, and Hygiene (WASH) (1 of 2)

- More than 660 million people lack access to an improved water source and 2.4 billion people lack access to improved sanitation.
- Water, sanitation, and hygiene (WASH) can impact nutrition outcomes through 3 direct pathways
  - Diarrhea – access to WASH interventions such as safe and reliable pipe water supply could prevent >360,000 diarrhea-related deaths among children <5 yrs in low- and middle-income settings
  - Other types of infection (e.g. parasites) – availability and usage of sanitation facilities is associated with 46-78% reduction in soil-transmitted infections from helminths (parasitic worms)
  - Environmental enteropathy (ingestion of pathogens that damage the gut and prevent full absorption of nutrients) – observational studies suggest physically clean households had less severe environmental enteric dysfunction, higher height-for-age z-scores, and 22% lower stunting prevalence than contaminated households

Water, Sanitation, and Hygiene (WASH) (2 of 2)

- Research on impacts of WASH conditions and interventions on nutrition is scarce, but studies have found that
  - 54% of variation in average child height in poor and middle-income countries can be attributed to open defecation
  - Access to improved sanitation is associated with lower child mortality and lower diarrhea

Panos/S. Das

WASH Case Study: Mali

A community-led total sanitation (CLTS) campaign was spearheaded in 2009 by the government, with support from development partners, aimed at complete elimination of open defecation and motivating participants to construct private latrines themselves. CLTS was incorporated in the National Strategy for Rural Sanitation.

Impact

- 1,400 villages reportedly achieved open-defecation-free status as of 2014
- Children <5 yrs in villages participating in CLTS had statistically significant 0.18 higher height-for-age z scores and were 13% less likely to be stunted

Factors contributing to success

- Reliance on communities to take initiative to tackle open defecation without financial or capital assistance
- Follow-up visits conducted up to 3 months, and community celebration held when all households have latrines and open defecation eliminated

WASH Case Study: Bangladesh

The government passed policies and plans directed at water and sanitation sector and launched a National Sanitation Campaign that earmarked 20% of local development funds to implement at scale. The SHOUHARDO Project (Strengthening Household Ability to Respond to Development Opportunities) promoted WASH actions combined with health education, exclusive breastfeeding, and supplementation.

Impact

- Open defecation decreased from 35% of people to 2.5% from 1995 to 2012
- 57% of the population had access to improved sanitation facilities by 2014
- SHOUHARDO: impact on children's height doubled when sanitation was combined with other maternal and child health and nutrition interventions

Factors contributing to success

- Cash grants of US$3000 provided when villages verified 100% latrine coverage
- Regional and local governments and NGOs worked together with communities
- WASH promoted in conjunction with health and nutrition interventions

WASH: Lessons Learned

- All levels of government and civil society – notably communities themselves – are integral to success.
- Behavior change is critical to the success of WASH.
- Measuring the impact of WASH on nutrition is difficult and requires further work.
- Different objectives of WASH (universal application) and nutrition interventions (some universal, some targeted) must be taken into account when designing effective programs and interventions.

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Malnutrition's New Frontier: The Challenge of Obesity

Judith Hodge, Roos Verstraeten, and Angélica Ochoa

Prevention of Obesity and Related Noncommunicable Diseases

- 1.9 billion people are currently overweight or obese, now surpassing the 794 million people who do not get enough calories.
- 42 million children are overweight or obese, a 47.1% increase from 1980 to 2013. Nearly 50% of all overweight children <5 yrs live in Asia and another 25% live in Africa.
- Obesity has reached alarmingly high levels in many low- and middle-income countries, carrying significant health risks for noncommunicable diseases (NCDs), but an investment of $1-3 per person per year in these countries could dramatically reduce illness and deaths from NCDs.
- Multi-intervention packages including fiscal and regulatory measures, health information, and communication strategies have been found to deliver large and cost-effective health gains.

Case Study: Mexico's Soda Tax (1 of 2)

Mexico's 2006 National Survey of Health and Nutrition revealed obesity in children ages 5-11 years increased 40% from 1999-2006. Following a well-planned and coordinated strategy by scientists, lobbyists, and consumer advocates, the sugar-sweetened beverage tax was passed in 2013, increasing the average price of one liter of soda by about 10%.

Impact

- Soda sales decreased 12% from December 2013 to December 2014. The reduction was greater in households of low socioeconomic status, who bought 17% fewer sugary drinks.
- Purchases of untaxed beverages (e.g. bottled water) rose by 4%.

Case Study: Mexico's Soda Tax (2 of 2)

Reuters/E. Garrido

Factors contributing to success

- Experienced alliance of consumer advocates developed high-impact media campaign and engaged lobbyists
- Timing: political transition and government focus on raising revenue, combined with efforts to use revenue to provide water fountains and potable water, created opportunity to build support for soda tax

Case Study: ACTIVITAL

In Ecuador, 26% of adolescents aged 12-19 yrs are overweight or obese. The school-based ACTIVITAL (Health Promotion Intervention in Ecuadorian Adolescents to Promote Healthy Dietary and Physical Activity Patterns) program combined components directed at changing individual behavior and the environment to improve dietary diversity and physical activity of adolescents.

Impact

- Added sugar, processed food intake during snacks, waist circumference, and blood pressure all decreased among participants
- Trends toward lower fruit and vegetable intake, less physical activity, and more sedentary behavior were also weakened among participants

Factors contributing to success

- Health program was integrated into broader educational curriculum
- Health education activities were combined with environmental changes

Lessons Learned

- Tackling obesity will require a "systems approach" and the involvement of multiple actors including government, scientists, civil society, the media, and communities.
- Engaging organizations with experience in media advocacy and using scientific evidence to defend policy measures can be extremely effective in building support for regulatory measures to address overweight and obesity.
- Health promotion programs can result in successful outcomes by combining health education activities with environmental changes to enable healthy behaviors.

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Local to National: Thailand's Integrated Nutrition Program

Stuart Gillespie, Kraisid Tontisirin, and Laura Zseleczky

Thailand

Thailand reduced child undernutrition by more than half within one decade. The country integrated nutrition in its national development plans and used basic minimum needs indicators to support communities to monitor progress according to local priorities and needs.

Impact

- Underweight rates among children <5 yrs decreased from over 50% to less than 20% from 1982-1991, and further reduced to 9% by 2012.
- Severe and moderate underweight rates of children <5 yrs were nearly eliminated.
- Antenatal care coverage increased from 35% to 95% from 1981-2006.
- Iron-deficiency anemia prevalence among pregnant women was reduced from nearly 60% in the 1960s to 10% in 2005.

Asian Development Bank

Thailand

Factors contributing to success

- Planning at micro and macro levels
  - Micro level: Community leaders and experts identified basic minimum needs indicators that translated into goals reflecting local priorities that could be monitored for progress.
  - Macro level: Representatives from nutrition and health professions, the government, and international agencies promoted collaboration among the health, agriculture, education, and rural development sectors.
- Nutrition was understood to be a multifaceted issue, requiring change not only in the health sector but also in agriculture and education.
- Service delivery was supported by a cadre of community health and nutrition volunteers or "mobilizers" who were selected by their communities and worked with households at a ratio of 1 mobilizer to 10-20 households.
- Regular weighing and health checks of all preschool children every 3 months served as a screening, educational, remedial, and integrative tool for both mobilizers and mothers.

Thailand: Lessons learned

- Recognition of the importance of nutrition at the highest levels of the political system and by all sectors ensured the central role of nutrition programming in the nation's development efforts.
- Success was driven by strategic planning and coordination at all levels combined with government support for community priorities.
- Adequate ratios of community workers or volunteers to the population were essential for effective implementation of the national nutrition program.

Thomas Fuller/ The New York Times/Redux

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Nutrition and Equality: Brazil's Success in Reducing Stunting among the Poorest

Meagan Keefe

Brazil

Rapid advances in economic development and healthcare in Brazil have contributed to significant improvements in child health and nutrition in recent decades. The country has also been successful in reducing socioeconomic inequality in malnutrition.

Impact

- Prevalence of child stunting reduced from 37% to 7% from 1974/5-2006/7
- Exclusive breastfeeding in infants <6 mths increased from 27% to 41% from 1999-2008 in Brazil's 27 state capitals and partial breastfeeding increased from a medium duration of 2.5 mths in the 1970s to 14 months in 2006/7
- Children from poor families were 7.7x more likely than children from wealthy families to be stunted in 1989, but by 2007/8 children from poor families were only 2.6 times more likely to stuffer stunting

Brazil

Factors contributing to success

- A range of policies were implemented between 1996 and 2007 to ensure universal access to primary education and to improve the quality of primary and secondary schools across all municipalities.
- The government consolidated its cash transfers for health and nutrition and linked smallholder farmers to food-based social protection programs.
- Radical decentralization of the health sector allowed for greater stakeholder participation and support for national health policy implementation at all levels of government.
- Access to improved sources of drinking water increased and sanitation services expanded.

Ministério do Desenvolvimento social e Combate à Fome/S. Amaral

Brazil: Lessons learned

Reuters/N. Doce

- Expanding and better targeting pro-poor social assistance programs accelerated progress in reducing poverty, which contributed to reductions in malnutrition.
- A multisectoral approach to program delivery combined with funding mechanisms to promote cooperation between ministries at local levels supported poverty alleviation and reduction of undernutrition.
- Civil society played a central role in bringing food and nutrition security to the national agenda and later in designing and implementing nutrition policies.

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Getting to Specifics: Bangladesh's Evolving Nutrition Policies

Peter Davis, Nicholas Nisbett, Nazneen Akhtar, and Sivan Yosef

Bangladesh

Panos/G.M.B. Akash

Bangladesh sustained reductions in child underweight and stunting prevalence over the 1990s and 2000s.

Impact

- The percentage of underweight children declined by 1.1% per year from 1997-2007.
- Stunting rates declined by 1.3% per year during the same time period.

Bangladesh

Factors contributing to success

- Pro-poor economic growth was accompanied by declines in acute food shortages, investments in assets, improved infrastructure, and increased availability of nonfarm and manufacturing work.
- Agricultural production increased.
- Expanded family planning support reduced fertility.
- Maternal and infant mortality declined while antenatal coverage and birth attendance by a skilled provider increased.
- School attendance increased and stipend programs improved enrollments.
- Access to improved drinking water sources and sanitation increased.
- Women's educational achievement increased alongside widespread participation of women in NGO-supported income generation and increased employment of women with control of their income.

Bangladesh: Lessons learned

- Nutrition-sensitive drivers within a wider enabling environment of pro-poor economic growth have likely contributed to improvements in nutrition. Such indirect drivers have multiple impacts and are mutually reinforcing.
- Nutrition-specific interventions directly aimed at improving nutritional status are needed to sustain the gains already made and to make further improvements.

Panos/G.M.B. Akash

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Reaching New Heights: 20 Years of Nutrition Progress in Nepal

Kenda Cunningham, Akriti Singh, Derek Headey, Pooja Pandey Rana, and Chandni Karmacharya

Nepal

Nepal experienced a rapid reduction in maternal and child undernutrition during a period of civil war and prolonged political and economic instability. Both nutrition-specific and nutrition-sensitive factors played a role in the gains made.

Impact

- Prevalence of stunting among children <2 yrs fell from 48% to 27% from 1996-2011
- During the same time period, prevalence of maternal underweight fell from 28% to 20%

K. Das Shrestha

Nepal

Factors contributing to success

- Increased access to health services including female community health volunteers, the Safe Delivery Incentive Program, and the Maternal and Neonatal Micronutrient Program
- Household asset accumulation and migration-related household income growth (though not universal)
- Improvements in parental education, mostly maternal education
- Increased toilet access through community-led total sanitation and a related school-led total sanitation approach

K. Das Shrestha

Nepal: Lessons learned

- Improved service delivery was vital to reaching geographically and socially isolated households and marginalized groups.
- Nutrition gains were made through the efforts of multiple actors including different levels of government, multilateral and bilateral development agencies, a wide range of NGOs, and communities themselves.
- Nepal will need to scale up nutrition-related policies and programs and find new creative ways to operationalize plans and policies to help those who have thus far remained beyond reach.
- Cultural norms and practices, often embedded in longstanding gender norms, influence household-level nutrition through women's lack of autonomy and decision-making power. There are opportunities for policies and programs across a range of development domains to catalyze women's empowerment.

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Commitments and Accountability: Peru's Unique Nutrition Journey

Sivan Yosef and Jay Goulden

Peru

Peru achieved rapid progress in nutrition indicators not only at a national level, but across all of Peru's diverse regions including rural areas and amongst the poorest 20% of the population.

Impact

- The rate of stunting in children <5 yrs fell from 29.5% to 14.6% in less than a decade.
- Only 0.5% of children <5 yrs were moderately wasted and 0.1% were severely wasted in 2013.
- From 2007-2012, the prevalence of stunting in children <5 yrs fell by 21.4 percentage points (54.7% to 33.3%) in districts targeted by the government's multisectoral nutrition strategy, CRECER, compared to a 10.4 percentage point reduction nationally (28.5% to 18.1%).

Peru

Reuters/E. Castro-Mendivil

Factors contributing to success

- Multisectoral cooperation with central roles played by civil society and national and regional levels of government
- Political will underlined by a pledge to invest in and prioritize nutrition that has sustained momentum for the fight against malnutrition through multiple political administrations
- A prevailing commitment to accountability that extends from national-level politics to more mundane, day-to-day budgetary processes

Peru: Lessons learned

- Support for a multisectoral approach that allows for coordinated policy interventions and approaches is essential for improving nutrition.
- Strong buy-in to the idea that nutrition matters among diverse stakeholders and at high levels, including from presidential candidates and government ministries, likely contributed to Peru's success.
- Collecting national and subnational data is important to allow for timely monitoring of vital nutrition indicators and adjustment of programs as required.

Reuters/M. del Triunfo

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On the Fast Track: Driving Down Stunting in Vietnam

Meagan Keefe

Vietnam

From one of the 5 poorest countries in the world in 1984 to the world's 55th richest nation by 2014, Vietnam's economic growth enabled the country to provide improved health services, which contributed directly to reductions in child malnutrition.

Panos/S. Sprague

Impact

- Stunting among children <5 yrs fell from 50% to 34% from 1993-1998. Following a slowdown in the early 2000s, stunting prevalence fell further from 29% to 19% between 2010 and 2013.
- Underweight in children <5 yrs fell from 32% in 2000 to 18% in 2010.
- Exclusive breastfeeding for infants <6 mths increased from 17% in 2011 to 24% in 2014.

Vietnam

Panos/J. Visser

Factors contributing to success

- Prioritization of nutrition by the national government including a National Nutrition Surveillance System and hosting of high-level international nutrition events
- Policies designed to improve infant and child feeding practices, increased maternity leave (from 4 to 6 months) to reduce barriers to breastfeeding, and expansion of the country's ban on advertising of breastmilk substitutes
- Efforts to reduce micronutrient deficiencies including supplementation, diet diversification, and food fortification

Vietnam: Lessons learned

- Commitment to nutrition at the national level was essential for the development and implementation of nutrition-sensitive legislation.
- Strategies to improve infant and young child feeding contributed to the significant gains in reducing underweight and stunting rates.
- Nutrition improvements did not reach all groups equally – moving forward, improved policy implementation at local levels will be necessary to reach vulnerable groups.
- The country has experienced difficulties in translating national policy into service provision and action at the local level – further reductions in malnutrition will require capacity building for subnational planning and policy implementation.

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Agriculture, WASH, and Safety Nets: Ethiopia's Multisector Story

Andrea Warren

Ethiopia

Despite ongoing challenges, Ethiopia has made significant progress in addressing its nutrition situation. The government has been proactive in addressing both immediate determinants of undernutrition (e.g. health status and nutrient intake) and underlying determinants (e.g. education, sanitation, and food security).

Impact

- Stunting was reduced from 57.4% to 44.2% between 2000 and 2011.
- From 2000 to 2010, government expenditures on education rose from 8.8% to 16.7%, and social protection program expenditures grew from 7% to 19.8%.
- Food production per capita increased an average of 1.9% per year from 2002-2007 and 3.3% per year from 2007-2012.

Ethiopia

Factors contributing to success

- National improvements in agricultural production largely driven by widespread distribution of improved seed and fertilizer
- Improved sanitation through latrine-building and hygiene initiatives coordinated by the government's National Health Extension Program
- The government-led Productive Safety Net Program provides food or cash transfers to beneficiaries in exchange for their participation in public works activities; nutrition-sensitive provisions added in the program's third phase will be improved in the fourth phase

IFPRI/M. Mitchell

Ethiopia: Lessons learned

IFPRI/M. Mitchell

- Improved sanitation had an impact on improving child growth outcomes but more community participation, follow-up, and monitoring and evaluation are needed to increase impact.
- While the Productive Safety Net Program could serve as a model for other countries, it only targets the most vulnerable to food insecurity – quality and reach of agriculture and health service provision will be key to further gains for the rest of the population.
- The success of a single nutrition-specific initiative, such as dietary supplementation, is conditioned on meeting ongoing, deeper-rooted challenges to livelihoods, food security, and health.

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25 Years of Scaling Up: Nutrition and Health Interventions in Odisha, India

Purnima Menon, Neha Kohli, Mara van den Bold, Elisabeth Becker, Nicholas Nisbett, Lawrence Haddad, and Rasmi Avula

Odisha

Odisha made significant progress in reducing child undernutrition – more than many other richer states – despite a number of development challenges including insurgent movements, social disparities, natural disasters, and a relatively late fiscal turnaround.

Impact

- The proportion of stunted children <3 yrs fell from 49% to 44% between 1998/9 and 2005/6 (compared with an all-India decline from 51% to 45% during the same period).
- Odisha performed better than richer states in a number of immediate determinants of undernutrition and nutrition-specific interventions including
  - Infants 6–8 months old receiving solid, semisolid, or soft foods
  - Minimum dietary diversity during complementary feeding
  - Mothers of children <3 yrs who received 3 or more antenatal care checkups
  - Children 12–23 mths old who were fully immunized

Odisha

Factors contributing to success

- A vision for impact focused on accelerating reductions in infant and maternal mortality and total fertility rates
- Delivering interventions through multiple operational platforms
- Catalysts for action, individual champions, and ownership by leaders and bureaucrats
- Diverse pathways for scaling up
- Gradually building up strategic and operational capacities
- Adequate, stable, and flexible financing
- Creating an enabling policy environment
- Measurement, learning, and accountability

DFID/P. Ranger

Odisha: Lessons learned

DFID/P. Ranger

- Setting specific goals focused on infant and maternal mortality rates contributed significantly to several key actions that were scaled up to successfully reduce mortality.
- Ensuring bureaucratic stability, capacity, and motivation to deliver was critical to achieving these goals.
- Much of Odisha's success was driven by the creation of an enabling environment with little to no political interference, adequate financing from diverse sources, and adequate technical support.

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Championing Nutrition: Effective Leadership for Action

Nicholas Nisbett, Elise Wach, Lawrence Haddad, Shams El-Arifeen, Samantha Reddin, Karine Gatellier, Namukolo Covic, Scott Drimie, Jody Harris, and Sivan Yosef

Leadership

- The 2008 Lancet series on child nutrition highlighted leadership as integral to making progress on the international and national nutrition stages.
- Scholars have identified a lack of capacity to train and support individuals to take on strategic roles in nutrition as a major barrier to conceptualizing and guiding national and subnational nutrition agendas.
- Nutrition leaders enter the field for a variety of reasons and at various points in their careers.

Panos/G. Pirozzi

Leadership

Panos/A. Loke

- There is a relationship between effective leadership and higher levels of adult development, i.e. advanced analytical or "sense-making" capabilities.
- The effectiveness of leaders and leadership activities depends on the shape and maturity level of the nutrition social network.
- Leaders' ability to effect change is determined partly by the policy and political environment, which can either promote or hinder nutrition progress.

Leadership: Lessons learned

- Given the range of motivations for nutrition leaders to enter the field, potential leaders from other disciplines should be exposed to both nutrition data and firsthand experience as a way of garnering cross-sector support for nutrition in the future.
- There is a need to help individuals within the nutrition community increase their levels of adult development through coaching, participatory stakeholder mapping exercises, or support programs that aim to develop broader leadership qualities.
- Fragmented networks benefited from leaders who could cross boundaries; more mature networks benefited from individuals who could generate an environment of co-creation.
- Mechanisms are needed to hold ministers and bureaucrats accountable for meeting their commitments in nutrition.

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New Horizons: Nutrition in the 21st Century

Stuart Gillespie, Judith Hodge, Rajul Pandya-Lorch, Jessica White, and Sivan Yosef

Key lessons from *Nourishing Millions*

- At the individual level, malnutrition is caused by inadequate dietary intake, often interacting with disease and poor care. Nutrition-specific interventions can make inroads if well-targeted and well-implemented, but they cannot solve the problem by themselves.
- Transforming sectoral actions to make them more nutrition-sensitive is critical for improvements at household and community levels.
- At the country level, enabling environments are key and include political commitment, governance, policy, legal frameworks, capacity, and financing