



Persistent Malnutrition in Ethnic Minority Communities of Vietnam

Issues and Options for Policy and Interventions

Nkosinathi V. N. Mbuya, Stephen J. Atwood, and
Phuong Nam Huynh

INTERNATIONAL DEVELOPMENT IN FOCUS

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Interventions**

Nkosinathi V. N. Mbuya, Stephen J. Atwood, and
Phuong Nam Huynh

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1 2 3 4 22 21 20 19

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ISBN: 978-1-4648-1432-7

DOI: 10.1596/978-1-4648-1432-7

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Cover design: Debra Naylor / Naylor Design Inc.

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Acknowledgments

A World Bank team led by Nkosinathi V. N. Mbuya (senior nutrition specialist and author) and Dao Lan Huong (senior health specialist) and comprising Stephen J. Atwood (consultant and author), Phuong Nam Huynh (consultant and author), Tran Thanh Do (consultant), and Nguyen Duy Son (consultant) prepared this report. Hoang Thi Anh Nga provided administrative support throughout its fieldwork and preparation. The team thanks Caryn Bredenkamp (senior economist), Cao Thang Binh (senior agriculture specialist), Keiko Inoue (program leader), Le Trung Thong (social development specialist), Nguyen Tam Giang (senior development specialist), Nguyen Diem Hang (water supply and sanitation specialist), Nguyen Thi Nga (social protection specialist), Obert Pimhidzai (senior economist), Tran Thi My An (senior education specialist), and Vo Thanh Son (senior social development specialist) for their contributions to the preparation, content, and review of this report. It was prepared under the overall guidance of Enis Bariş (practice manager of the East Asia and Pacific region, Health, Nutrition and Population Global Practice), and Ousmane Dione (World Bank country director for Vietnam).

The authors are grateful to peer reviewers Leslie Elder (senior nutrition specialist, World Bank), Leslie Miller (acting representative, UNICEF-Vietnam), and Pushina Kunda Ng’andwe (senior rural development specialist, World Bank) for providing technical guidance and a quality review of this report.

The authors would also like to thank the minister and staff of Vietnam’s Ministry of Agriculture and Fisheries; Ministry of Commerce, Industry and Environment; Ministry of Finance; Ministry of Health; and Ministry of Social Solidarity, as well as the many development partners and agencies referenced in this report, for their guidance, assistance, and major contributions throughout this study.

The government of Japan provided financial support for this work through the Japan Trust Fund for Scaling Up Nutrition.

Abbreviations

BCC	behavior change communication
BMI	body mass index
CEMA	Committee for Ethnic Minority Affairs
DHS	Demographic and Health Survey
ECCE	early childhood care and education
ECE	early childhood education
GAIN	Global Alliance for Improved Nutrition
GDP	gross domestic product
IMAM	Integrated Management of Acute Malnutrition
IPV	intimate partner violence
IUGR	intrauterine growth restriction
IYCF	infant and young child feeding
LBW	low birthweight
MARD	Ministry of Agriculture and Rural Development
MCST	Ministry of Culture, Sports, and Tourism
MICS	Multiple Indicator Cluster Survey
MNAGA	multisectoral nutrition assessment and gap analysis
MOET	Ministry of Education and Training
MOH	Ministry of Health
MOLISA	Ministry of Labor, Invalids, and Social Affairs
NGO	nongovernmental organization
NIN	National Institute of Nutrition
NNS	National Nutrition Strategy
NNSS	National Nutrition Surveillance System
NPAN	National Plan of Action for Nutrition
NRD	New Rural Development
NTP	National Target Program
PEMC	Protein Energy Malnutrition Control
PPP	purchasing power parity
RUTF	ready-to-use therapeutic food
SAM	severe acute malnutrition
SPR	Sustainable Poverty Reduction
SUN	Scaling Up Nutrition

VWU	Vietnam Women's Union
WASH	water, sanitation, and hygiene
WHO	World Health Organization

In this report, all dollar amounts are U.S. dollars, unless otherwise indicated.

Executive Summary

Seventy-five percent of Vietnam's ethnic minorities live in 45 of the country's 63 provinces, which are located in the country's northern mountain and central highlands regions. Vietnam's hills and forested highlands have influenced its demographics and the extent and persistence of its inequity in poverty, health, and nutrition.

The cultural identities of the country's various ethnic groups have been preserved because of the geographic isolation and the inaccessibility of many of the towns and communities in which they live. Language or cultural barriers, the inadequate quality of services offered to ethnic minorities, and the lack of trust that exists on both sides due to historical barriers have contributed to the inability or unwillingness of ethnic minorities to engage in government programs. For example, a 2012 World Bank poverty assessment of social protection and poverty reduction programs in Vietnam found substantially lower coverage of social insurance programs among ethnic minority groups (14 percent) than among the Kinh/Hoa ethnic majority groups (35 percent). In 2010 fewer than two out of 10 of ethnic minorities had access to improved sanitation facilities, whereas seven out of 10 Kinh/Hoa households had access to such facilities. According to the same World Bank assessment, poor access to these essential public services has adversely affected the health and nutrition outcomes of ethnic minority groups (World Bank 2012).

GOOD NUTRITION, A FOUNDATION FOR VIETNAM'S ECONOMIC DEVELOPMENT

Undernutrition is a significant challenge to Vietnam's sustainable socioeconomic growth. The persistence of high levels of undernutrition, particularly among ethnic minorities, who constitute 14 percent of Vietnam's population of 96.2 million, contributes to a staggering yet avoidable loss of human capital and economic growth potential. Poor nutrition perpetuates the cycle of poverty through direct losses in productivity from poor physical status, indirect losses in total factor productivity from reduced cognitive capacity and educational attainment, as well as

losses brought about by poor health because of the higher prevalence of ailments linked to undernutrition and the related increases in personal and public health care expenditures. The economic costs of undernutrition can be substantial. Globally, it is estimated that productivity losses represent more than 10 percent of an individual's lifetime earnings and that the gross domestic product (GDP) lost to undernutrition could be as high as 2–10 percent.

Critical window of opportunity

Because the window of opportunity for adequate nutrition for optimal health and physical and cognitive development is short and spans only the first 1,000 days of life beginning at the first day of pregnancy, any undernutrition occurring during this period can lead to extensive and largely irreversible damage to physical growth, brain development, and human capital formation. Therefore, interventions to improve nutritional outcomes must focus on this age group and women of child-bearing age.

Undernutrition: A serious problem among ethnic minorities in Vietnam

Ethnic minorities in Vietnam are consistently more undernourished than their Kinh majority counterparts. Despite decreases in the prevalence of undernutrition nationally, the prevalence of stunting among ethnic minority children (31.4 percent) is still twice as high as that among the Kinh ethnic majority group (15.0 percent), and underweight ethnic minority children outnumber comparable Kinh children by 2.5 times (21 percent versus 8.5 percent). Moreover, 119,957 (60 percent) of the 199,535 stunted children in the 10 Vietnamese provinces with the highest rates of stunting are from ethnic minorities.¹

Beyond these visible anthropometric differences, there are also inequalities in the less obvious category of micronutrient undernutrition—so-called hidden hunger. The highest rates of anemia are consistently found in the country's northern midlands and mountainous regions, which are home to 75 percent of ethnic minority groups. Forty-three percent of ethnic minority children are anemic, compared with the national average of 27.8 percent. Zinc deficiency, which increases the risk of preterm births and low birthweight, has also been reported to be more prevalent in mountainous regions (81 percent), compared with urban areas where the majority of Kinh live (50 percent).

Determinants of undernutrition among ethnic minority populations

The key determinants of undernutrition among populations with high rates of child undernutrition are multisectoral. First outlined in UNICEF's conceptual framework of child undernutrition in 1990, they have been placed in three categories: immediate, underlying, and basic. At the immediate level, a child becomes undernourished because of inadequate or inappropriate dietary intake, ill health, or both—these two factors often negatively affect one another. These immediate factors stem from household or community deficits in food security (for example, lack of access to a diverse diet); inadequate care and feeding practices for mothers and children; and inadequate access to health and environmental services. These three deficits or lack of access, often summarized as

“food, health, and care,” also interact and are themselves underpinned by more basic causes related to the amount, control, and use of resources in societies.

Although this study does not include empirical analyses to determine the exact contribution of these determinants to the high prevalence of childhood undernutrition among ethnic minority groups in Vietnam, an extensive literature review and interviews with key nutrition stakeholders suggest that almost all of these determinants are critically important to these population groups. These determinants can be summarized as follows:

- Immediate determinants
 - *Inadequate nutrient intake.* To meet their increasing nutritional needs after six months of exclusive breastfeeding, infants should receive nutritionally adequate complementary foods to achieve optimal growth. However, ethnic minority children do not. Overall, only 39 percent of these children ages 6–23 months are fed a nutritionally adequate diet,² compared with 69 percent of Kinh/Hoa children.
 - *Ill health.* Diarrhea and parasitic infestation from soil-transmitted parasitic worms have long been known to affect nutrition through the loss of nutrients from malabsorption. Vietnam’s 2014 Multiple Indicator Cluster Survey (MICS) described diarrhea as a common infectious disease that burdens ethnic minority communities disproportionately (GSO and UNICEF 2015). It found that 18.5 percent of ethnic minority children were undergoing an episode of diarrhea at the time of the survey, compared with only 6.5 percent of Kinh/Hoa children.
- Underlying determinants
 - *Access to health services.* Prenatal care services provide pregnant women with essential nutrition services, including iron–folic acid supplementation, energy and protein supplementation for undernourished women, and nutrition counseling to promote optimal infant and young child feeding practices. However, according to the MICS 2014, only 32.7 percent of ethnic minority women ages 15–49 who had given birth in the two years preceding the survey had made the recommended four prenatal care visits, compared with 82.1 percent of Kinh women, who were seen four or more times.
 - *Unhealthy household environment.* Childhood environmental enteric dysfunction has been linked to unsanitary physical environments and contributes to childhood stunting. According to the MICS 2014, only 2.4 percent of Kinh/Hoa households were practicing open defecation, compared with 26.8 percent of ethnic minority households. Furthermore, 81.7 percent of Kinh/Hoa households had both improved drinking water sources and improved sanitation, whereas only 38.7 percent of ethnic minority households had such facilities.
 - *Inadequate reproductive care for women.* Early marriage and adolescent pregnancy can lead to higher maternal and neonatal mortality, low birthweights, and stunting of children. According to the MICS 2014, 23.9 percent of ethnic minority women ages 15–19 years had begun childbearing, but only 5.1 percent of Kinh/Hoa women had done so.
- Basic determinants
 - *Poverty.* One of the most important basic causes of undernutrition, poverty, is concentrated among ethnic minorities, particularly those in the smaller groups and those living in the northern and central mountains. Although accounting for only 14 percent of the population, 73 percent of those living in poverty in 2016 were ethnic minority groups.

INVESTMENTS IN NUTRITION CAN YIELD HIGH RETURNS

The 2013 *Lancet* series on maternal and child nutrition, a comprehensive review of interventions to address undernutrition and micronutrient deficiencies in women and children, identified a package of high-impact, nutrition-specific interventions³ to accelerate improvements in nutritional outcomes. The interventions in this package are complementary and mutually reinforcing, with some addressing the prenatal period and others the postnatal period. It is therefore recommended that those living with a high burden of undernutrition benefit from delivery of the full package rather than bits and pieces of the package. In addition, delivery of these interventions as a package and at scale (with at least 90 percent coverage) will result in very high economic returns. In 2017 the World Bank estimated the rates of return of scaling up to 90 percent coverage of this package of high-impact, nutrition-specific interventions in 34 countries, which together account for 90 percent of the world's stunted children and which include Vietnam (Galasso and Wagstaff 2017).⁴ Based on these estimates, Vietnam would have one of the highest rates of returns from this nutrition package, reflecting the low per capita program cost of delivering the package, the high rate of return to education in the country, and the country's high GDP growth rate. Under a certain set of assumptions,⁵ for every U.S. dollar that Vietnam invests in this package of high-impact, nutrition-specific interventions, the increase in adult income is estimated to be \$48, compared with \$2 for Malawi and \$13 for Ethiopia.

POLICIES AND PROGRAMS TO TACKLE UNDERNUTRITION

The analyses conducted for this study established the government of Vietnam's commitment to nutrition as foundational to the country's economic development. Nutrition is one of the top 10 priorities of the government's Socio-Economic Development Plan 2016–2020 (Socialist Republic of Vietnam 2016). Various government ministries and bodies have also introduced numerous examples of multisectoral policies aimed at improving nutrition among ethnic minority groups.⁶ A key finding from this study is that some of these policies have yet to be implemented and remain at the conceptual stage, even though each of these intersectoral partners has policies and programs that have a direct or indirect impact on nutrition. Furthermore, the government has not allocated adequate financial resources to the integrated implementation of the country's national nutrition strategy. As a result, key nutrition-related challenges, such as stunting and micronutrient deficiencies, have not yet received adequate budgetary attention.

Overall, the government of Vietnam has initiated nutrition interventions targeting women and children, and yet the goal of improving the nutritional status of children in all of the country's regions and among its various ethnic minority and socioeconomic groups has only been partially successful. Interviews with key informants have revealed that the low coverage of these interventions and other government programs has not been able to achieve a significant impact on the nutritional status of children in ethnic minority communities. Human resources and institutional capacity are needed to implement the new strategies to increase the participation of ethnic minority families in government programs. Meanwhile, the government's ongoing implementation of interventions

that have not proven effective^z has not only failed to improve nutritional outcomes but also drained scarce resources from evidence-based interventions.⁸

THE WAY FORWARD: RECOMMENDATIONS

In line with the experience of countries that have successfully tackled childhood undernutrition, Vietnam can undertake the following policy and programmatic actions to address the development challenge of undernutrition among ethnic minority populations.

Build a strong and more coordinated partnership for nutrition

A comprehensive multisectoral intervention requires high-level government ownership and leadership by entities able to monitor and enforce convergence across ministries and interested stakeholders.

An improved coordination mechanism is therefore required to coordinate various multisectoral, nutrition-related activities in Vietnam. This could be achieved by reconvening the high-level national intersectoral nutrition steering committee and creating a specific subcommittee focusing on ethnic minority provinces. This committee would focus on coordinating and monitoring implementation of the following:

- The Communist Party's Resolution No. 20/NQ-TW/2017, which was issued in 2018 to specifically reduce stunting.
- The prime minister's directive 46/CT-TTg of December 21, 2017, on enhancing nutrition, including the request for inclusion of a stunting indicator in the Socio-Economic Development Plan at the national and subnational level.
- Government decrees 100/2014/ND-CP and 09/2016/ND-CP on the marketing and use of nutrition products for young children and food fortification.

Secure adequate financing for nutrition

Critical to tackling undernutrition at scale are better and higher levels of nutrition investments and adequate domestic financing for nutrition-related programs to achieve the nutrition goals for vulnerable populations. Advocacy by national and provincial nutrition stakeholders is needed to support this recommendation and should include:

- Advocating for fast-tracking government fund allocation on nutrition-specific and sensitive interventions and taking into account existing enabling legal documents, including the Communist Party's Resolution No. 20/NQ-TW/2017; the prime minister's directive 46/CT-TTg; the National Nutrition Strategy 2011–2020; and the National Plan of Action for Nutrition 2017–2020.
- Advocating for direct government funding at the provincial level to augment national inflows for a comprehensive stunting reduction package of interventions applicable to women and children in largely ethnic minority provinces.
- Advocating that the Ministry of Finance and other relevant ministries include in nutrition benefit packages integrated management of acute malnutrition services, micronutrient supplementation for pregnant women, and multi-micronutrient powder for children, which will be specifically operationalized under the national targeted programs.

Implement at scale well-proven direct nutrition interventions

Substantial progress has been made in developing policies and strategies for an integrated approach to nutrition, but an evidence-based package of nutrition-specific interventions needs to be defined and made available to all ethnic minority populations through government sector primary health care facilities and the relevant community platforms. Specific actions to support this recommendation should include:

- Adopting an evidence-based package of nutrition-specific interventions that can be made available to each ethnic minority household in all priority high-stunting provinces. This package should include promotion of breastfeeding; complementary feeding education; micronutrient and energy-protein supplementation during pregnancy; vitamin A and zinc supplementation in childhood; and management of severe acute malnutrition.
- Formulating a comprehensive social behavior change and communication strategy for nutritional improvement that can guide campaigns, media, and community educational materials and events to improve the nutrition of women and children from ethnic minority population groups.
- Reviewing the cost-effectiveness of including ready-to-use therapeutic food (RUTF) for moderately or severely undernourished children as part of the health insurance package.

Address determinants of nutrition through multisectoral approaches

Although it will be important to address the direct routes to optimal nutrition through the previous recommendations, success in improving maternal and child nutrition indicators will be enhanced and sustained by addressing the underlying determinants of nutrition through multisectoral approaches. Such multisectoral, nutrition-related actions for ethnic minority populations should include the following actions:

- Explicitly identify efforts to tackle undernutrition in ethnic minority populations as a priority for the National Target Program for New Rural Development (NTP-NRD) and the National Target Program for Sustainable Poverty Reduction (NTP-SPR), along with specific targets and reporting mechanisms, and earmark expenditures for NTP activities supporting nutrition.
- Expand the cash transfer program to effectively target and reach the poorest ethnic minority families with pregnant women, infants, and young children during the critical 1,000-day window of opportunity.
- Provide encouragement and, if needed, incentives for ethnic minority girls to enroll in and complete upper secondary school.
- Increase the access of ethnic minority populations to clean water, sanitation facilities, and hygiene promotion services.
- Increase the access of ethnic minority groups to a comprehensive package of adolescent, maternal, and child health services that are sensitive to their cultural beliefs and practices.

NOTES

1. These 10 provinces are Kon Tum, Lai Chau, Gia Lai, Lao Cai, Ha Giang, Son La, Cao Bang, Dien Bien, Dak Nong, and Quang Binh. Together, these provinces are home to 591,848 children under 5 years old.
2. In terms of the quantity (number of feeds) and quality (the number of different types of foods).
3. Salt iodization; multiple micronutrient supplementation in pregnancy, including iron-folate; calcium supplementation in pregnancy; energy-protein supplementation in pregnancy; vitamin A supplementation in childhood; zinc supplementation in childhood; breastfeeding promotion; complementary feeding education; and management of severe acute malnutrition.
4. The benefit-cost ratio was estimated for the whole country and not specifically for ethnic minorities.
5. The estimates account only for individual returns through improved health, education, and cognition, and not for market effects. The estimates also assume that once people accrue education and health, they will be valued in the labor market.
6. They include the Ministry of Agriculture and Rural Development (MARD); Ministry of Trade (MOT); Ministry of Culture, Sports, and Tourism (MCST); Ministry of Education and Training (MOET); Ministry of Labor, Invalids, and Social Affairs (MOLISA); and Committee for Ethnic Minority Affairs (CEMA).
7. For example, targeting children under 5 years old instead of those under 2 years old, as well as the school milk program currently being piloted in urban areas. These programs are not mentioned in the *Lancet* list of evidence-based interventions.
8. For example, weekly iron folate tablets for adolescent girls and pre-pregnant primiparous women.

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1 Introduction

COUNTRY CONTEXT

Background and history

Vietnam is a multiethnic country on the eastern coast of continental Southeast Asia. Its extensive S-shaped coastline is 1,650 kilometers long (map 1.1). The country is 40 kilometers wide at its narrowest part, in Quang Binh province—an area that has marked the historic and political divide between the northern and southern parts of the country. China borders Vietnam to the north and the Lao People’s Democratic Republic and Cambodia to the west. Its coastal borders are on the Gulf of Thailand to the south and the Gulf of Tonkin and the South China Sea to the east. The two major urban centers are located in two flat river deltas: Hanoi in the Red River Delta in the north and Ho Chi Minh City in the Mekong Delta in the south.

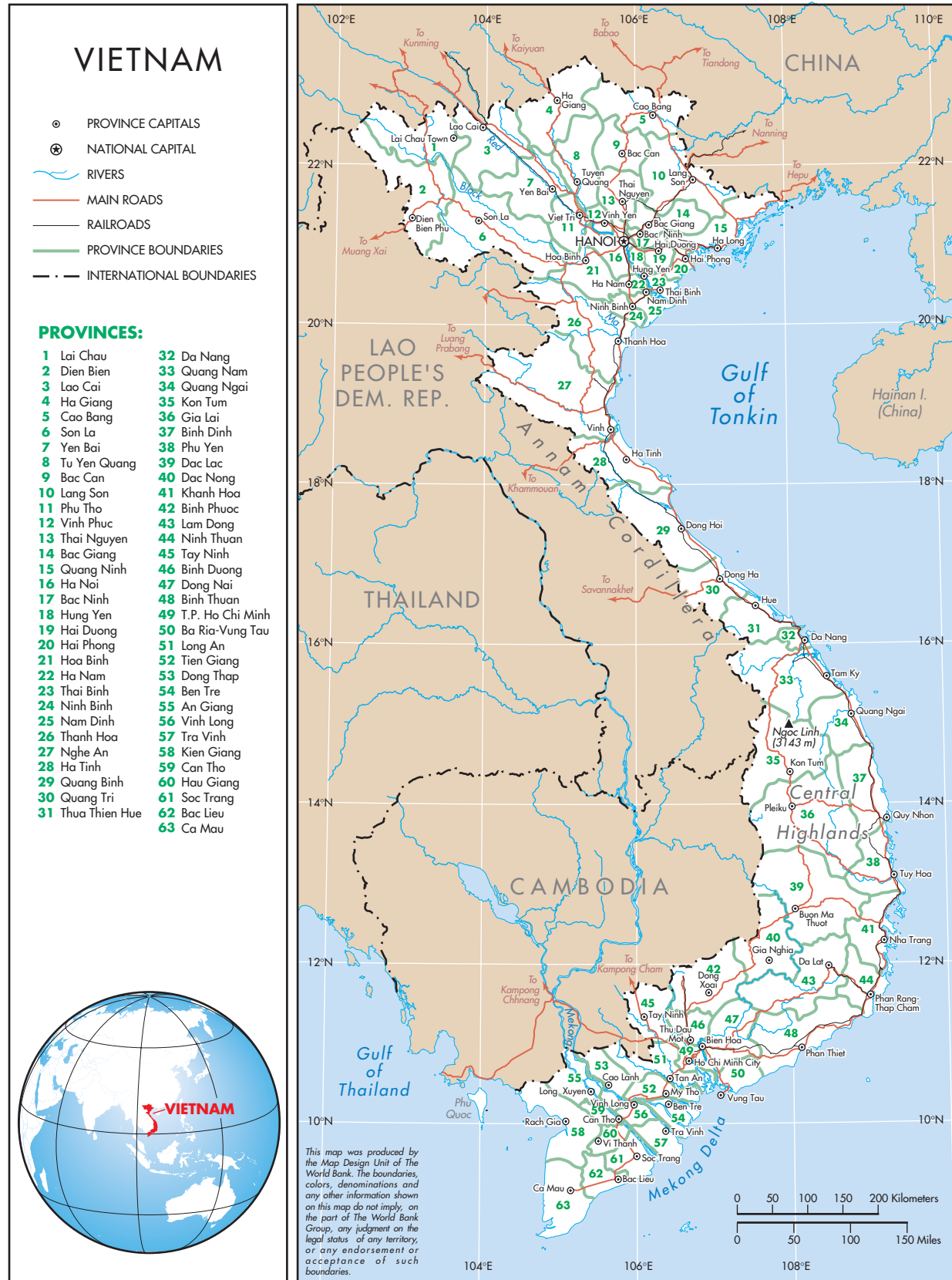
Vietnam is made up largely of hills and forested highlands, and tropical lowlands occupy part of the level land that covers approximately 20 percent of the country. It is divided into three major regions: the north, dominated by the northern midlands and mountainous area and extending south into the high plateau of the central highlands; the river deltas in the north and south; and the coastal lowlands that extend into the Mekong Delta in the south. Twenty-one percent of the land is arable with good conditions for agriculture. This land lies mostly along the Red River and other river valleys in the north, the coastal plains in the center, and the Mekong Delta in the south. The country’s pattern of rainfall and abundance of surface water allow two to three crops of rice a year, contributing to Vietnam’s place as the second-largest global exporter of rice.

The majority of the country’s 96.2 million people live in the deltas. Most ethnic minority groups live in the less densely populated areas of the northern mountain regions and the central highland plateau.

Population and demographics

Despite the effects of nearly perpetual conflict over more than a half-century ago, the population statistics of Vietnam have remained remarkably consistent.

MAP 1.1
Vietnam



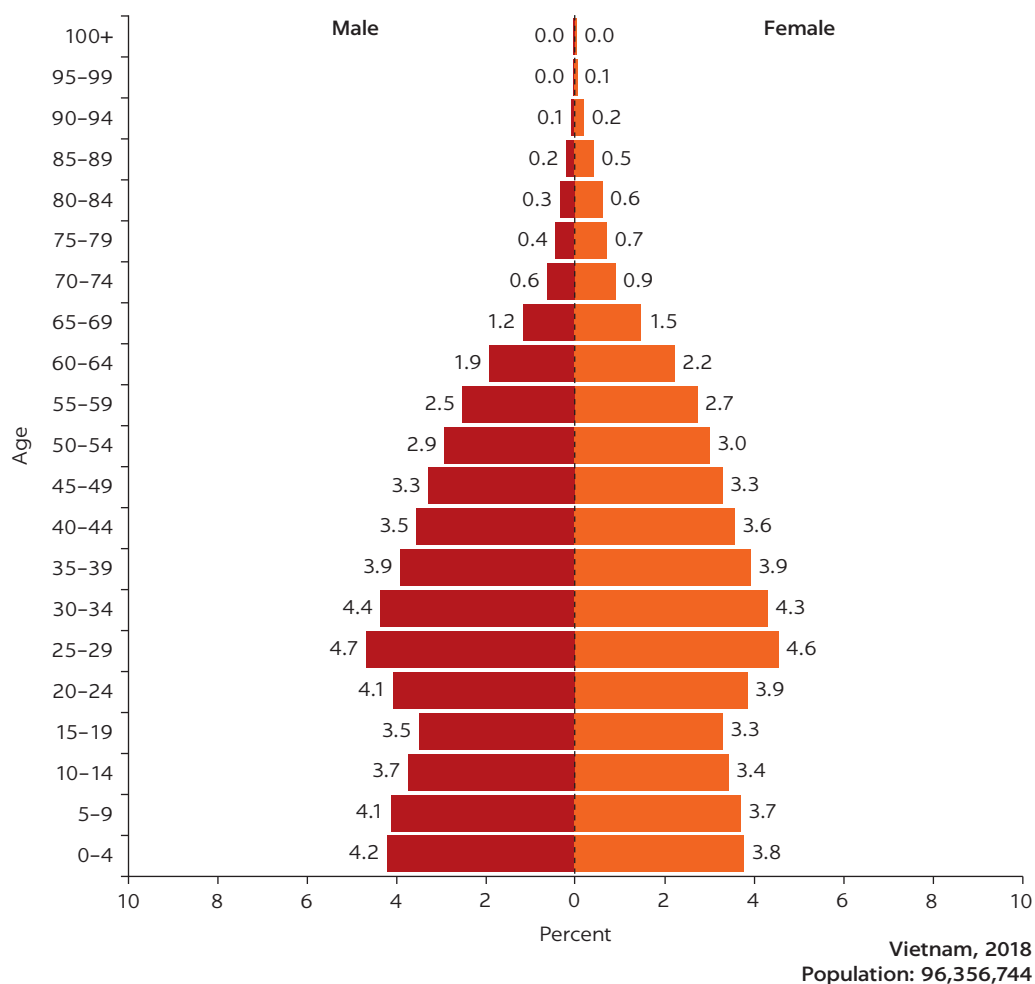
Source: World Bank, IBRD 33511R1, January 2010.

The population grew in an almost linear trajectory from 37.9 million in 1965 to 96.2 million in 2018, which led population density to more than triple, from 85.0 persons per square kilometer in 1955 to an estimated 291.3 persons per square kilometer in 2018. The linearity of population growth is reflected in a decreasing population growth rate, from 2.9 percent in 1965 to 1.2 percent in 2017 (Thuc 2016; World Bank 2019).

Estimates from 2017 show an age structure that reflects a stable fertility rate (below 2.0 since 2000), with low child mortality and a bulging population ages 25–54 (45.6 percent of the total population). Vietnam’s dependency ratio is low (42.5 percent), which is a reflection of its low fertility rate (1.96 births per woman in 2015, down from 6.48 in 1965) and the fact that only 14.6 percent of the population is older than 54. Vietnam is reaping the demographic dividend of low fertility and an increasing life expectancy.

The population pyramid in figure 1.1 reflects the male predominance in Vietnam. Men and boys outnumber women and girls in all age groups from birth to the age of 54 when differences in life expectancy (71 for men, 76 for women) are taken into account. The sex ratio at birth has now worsened to 115 males to 100 females (in 2018), which is equal to China as the worst in the

FIGURE 1.1
Vietnam’s population pyramid, 2018



Source: <https://PopulationPyramid.net>.

world (GSO 2010). The preference for sons is most common in the Red River Delta and the northern mountainous area and less common in the south, such as in the Mekong Delta. Nationwide, a woman with two daughters is twice as likely to have a third child as a woman with at least one son. Of families with two daughters, 57.9 percent of those in the Red River Delta and 37.4 percent of those in the Mekong Delta opted for a third child. In the Mekong Delta, 26.3 percent of families with two sons and 19.6 percent of those with a son and a daughter chose to have a third child (Becquet and Guilmoto 2018).

The phenomenon of increasing population density is not spread evenly over the country. Population density in the northern mountain and central highlands regions increased steadily from 2005 to 2016 (from 81.5 to 93.2 persons per square kilometer in the four northern provinces of Dien Bien, Lai Chau, Son La, and Hoa Binh and from 87 to 104 persons per square kilometer in the central highlands). Conversely, population density has decreased slightly in the highly populated coastal regions (from 210 to 207 persons per square kilometer), Red River Delta (from 1,218 to 994 persons per square kilometer), and Mekong Delta (from 435 to 433 persons per square kilometer). Population density has grown rapidly in the southeastern region around Ho Chi Minh City (from 387 to 697 persons per square kilometer) (see Thuc 2016). Shifts in population have affected the growth of the largest cities. From 2000 to 2010, the six major cities in Vietnam grew by an average of 3–4 percent, mainly from in-migration from rural and lowland areas.

Migration to cities to seek jobs and education favors an already more educated, higher-income group of people, largely men. This mobility does not extend as readily to ethnic minorities, who are much less likely than the Kinh to migrate. The reason for this lack of mobility is not clear. It may be related to supply-side variables (such as kinship ties, commitment to culture and ancestry, or lack of education) or demand-side variables (such as lack of skills employers need or discrimination against ethnic groups) (see Coxhead, Cuong, and Vu 2015). The end result is the same: ethnic groups are less likely to leave their villages, which may be an important reason why poverty persists in these communities unlike in the rest of the country (Coxhead, Cuong, and Vu 2015).

Vietnam is also undergoing epidemiological and demographic transitions that present a new set of challenges with direct effects on the demand for health and social services. Nearly all countries in East Asia are in the midst of or will experience rapid aging, and Vietnam's population is aging faster than those in most countries in the region. The share of the population age 65 and older is expected to increase rapidly, from 6.3 million (6.7 percent) in 2015 to 31.5 million (28 percent) in 2080. Population aging in Vietnam is occurring at a much lower income level than in other Asian countries such as Japan and the Republic of Korea, which raises the question of how the increasing cost of health and elderly care services will be financed. Therefore, promoting a healthy lifestyle in young people and reducing the prevalence of noncommunicable diseases in older adults are critical.

Origins of inequity in ethnic minorities in Vietnam

Although ethnic minority groups can be found in 45 of Vietnam's 63 provinces, 75 percent live in 13 provinces in the northern mountain and central highlands regions—regions known for high concentrations of poverty and persistent undernutrition. Each of the 53 ethnic groups in Vietnam has a distinct culture and language, divided into the five language families of Southeast Asia:

Austroasiatic, Austronesian, Thai-Kadai, Sino-Tibetan, and Hmong-Dao. The largest group is the Kinh, who account for 86 percent of the population. The Tay, Thai, Muong, Khmer (ethnic Cambodian), Hoa (ethnic Chinese), and Hmong constitute 10 percent of the population, and the remaining smaller groups make up roughly 4 percent (Dang 2012).

Vietnam's hills and forested highlands have influenced its demographics and the extent and persistence of inequity in poverty, health, and nutrition. The isolation that the geography of the country engenders and the inaccessibility of many of its towns and communities have preserved the cultural identities of various ethnic groups. As the country's population grew, the ethnic majority community settled in the more fertile lowlands and river valleys that made up the 20 percent of the country that was arable. And yet the Kinh account for 84.7 percent of the population of the central highland/northern midland and mountain regions, even though these two regions are usually described as "largely" ethnic minority regions.

During the second phase of the economic reforms initiated in Vietnam in 1986 with the goal of creating a "socialist-oriented market economy" (Đổi Mới), the lowland areas became the agricultural engines for Vietnam's remarkable increase in rice production that made it second in global rice exports and contributed to economic development that exceeded that of the highland areas. This advantage allowed the majority Kinh population to grow more rapidly and increase their population density (Marzin and Michaud 2016). As density increased, the demand for health services and education grew proportionately, and the government, intent on improving national indicators for health, nutrition, and well-being—many in line with the United Nations' Millennium Development Goals—responded, although access to and use of these services remained uneven.

The history of ethnic minorities has been characterized by a process of social exclusion that has prevented some groups from participating in the mainstream Vietnamese culture. Their inability or unwillingness to engage in government programs because of language or cultural barriers, the inadequate quality of services offered, or a reluctance because of historical barriers to trust on both sides (Minh Anh, Kim, and Ubukata 2016) has adversely affected the health and nutrition outcomes of the ethnic minority groups. The indicators reveal a low uptake in education, with a high proportion of minority families with no education or only primary education;¹ low rates of prenatal care and institutional deliveries,² despite receiving counseling on the benefits of each; and significantly less access to water, sanitation, and hygiene (WASH) services than the Kinh majority.

History also offers some insights into why differences continue between the ethnic minority groups and the Kinh/Hoa majority even though government programs and policies are aimed at improving the lives of ethnic minorities. Significant financial resources have been channeled to remote regions of the country, and many policies and programs have been directed at minority groups. The government's Committee for Ethnic Minority Affairs (CEMA) has representatives from the central down to the district level in some larger settlements of minority populations. Programs are directed at poverty reduction, resettlement and sedentism, forest land allocation, education, health, and communication. Cash subsidies are offered for house construction, land reclamation, drinking water, infrastructure development, and agricultural extension services. These programs have been directed at regions known for their concentration of poverty, but truly needy families from ethnic minority groups

have not always been the primary beneficiaries. As in other countries, better-educated, wealthier people have been better able to use the system to their advantage.

Economics

Vietnam has achieved a tremendous reduction in poverty in recent decades by distributing the gains of strong economic growth equitably.³ By 2016 the incidence of poverty had fallen to 9.8 percent (the poverty line of Vietnam’s General Statistics Office and the World Bank),⁴ down from nearly 60 percent in 1993. Inequality has remained largely unchanged, with the Gini coefficient even dropping slightly, from 35.7 in 1992 to 35.3 in 2016.⁵ From 2010 to 2016, the average consumption level of the bottom 40 percent in terms of poverty level grew by 5.2 percent a year. Vietnam’s success in reducing poverty is attributed to rapid economic growth and economic restructuring, accompanied by job growth and government investments to improve public infrastructure and service delivery. The economy has transformed from one that was largely closed and centrally planned to one that is dynamic, market-oriented, integrated, and connected to the global economy. Economic growth has also been fairly resilient to a challenging global environment, with recent annual gross domestic product (GDP) growth in excess of 6 percent and only moderate inflation. Vietnam reached middle-income status in 2009.

Broad welfare gains and improved living standards have accompanied poverty reduction because Vietnam’s achievement of most of the Millennium Development Goals occurred faster than targeted. From 1993 to 2017, infant mortality fell from 32.6 to 16.7 deaths per 1,000 live births,⁶ and stunting prevalence fell from 61 to 24.2 percent (MOH 2018; GSO 2017). Net primary school enrollment increased from 78 percent in 1992–93 to 93 percent in 2014 (GSO 1994, 2016).⁷ Meanwhile, access to household infrastructure has improved dramatically: by 2016, 99.4 percent of the population used electricity as their main source of lighting, up from 48.6 percent in 1993 (GSO 1994, 2018a); 77.0 percent of the rural population had access to improved sanitation facilities versus 33.8 percent in 1993 (World Bank 2018a); and 69.9 percent of the rural population had access to clean water (World Bank 2018a), up from 62.9 percent in 1996 (WHO and UNICEF 2015).⁸ Access to all of these services in urban areas is well above 90 percent. Vietnam has also closed gender gaps for a wide range of social and economic measures (including bringing female labor force participation within 11 percentage points of that of men),⁹ but the high and widening sex ratio at birth, 115 males to 100 females in 2018 (GSO 2018b), indicates that fundamental gender discrimination persists. The 2018 Human Development Index ranked Vietnam 116 out of 189 countries—that is, in the “medium” category—with a score of 0.694 (UNDP 2018), and the World Bank’s 2018 Human Capital Index ranked Vietnam 48 out of 157 countries, with a score of 0.67, exceeding the global, regional, and even upper-middle-income country averages (World Bank 2018b).

Vietnam is expected to go through further social transformation and may face mounting economic and environmental pressures. It is one of the most rapidly aging countries, and the size of the population age 65 and older is expected to increase by 2.5 times by 2050.¹⁰ In addition, although the population is still largely rural (64.8 percent in 2017),¹¹ it has been steadily urbanizing (by approximately 0.7 percentage points a year). The expectations of the population in terms of equity in access to quality public services are also changing because of

rising incomes, greater access to information, and more spatial integration (global and urban-rural). Risks to development include the fragility of poverty gains and the concentration of poverty in ethnic minority communities and rural mountainous areas¹²; environmental sources of vulnerability (for example, climate change, natural disasters, and unsustainable exploitation of natural resources); rising fiscal pressures, including a growing fiscal deficit¹³ and a debt-to-GDP ratio that, although having fallen back from its 2016 high of 63.7 percent to 61.4 percent, is still close to the 65 percent statutory limit; structural constraints in the growth model, including an overreliance on factor accumulation (rather than productivity growth); and limited private sector development. Balancing economic prosperity with environmental sustainability, promoting equity and social inclusion, and strengthening state capacity and accountability—all within a constantly evolving global and domestic context—will be challenging (World Bank and Ministry of Planning and Investment of Vietnam 2016).

The robust Vietnamese economy that led to higher incomes and a reduction in the poverty headcount also led to greater inequality (figure 1.2). Poverty has become concentrated in the northern mountains and central highlands, areas dominated by ethnic minority groups who, although they constitute only 14 percent of the population, accounted for 73 percent of the poor in 2016. The greatest driver of this inequality is in rural areas with their low nonagriculture incomes among the poor and the poor's limited participation in high-value agricultural production.

The same trend of improvements in economic indicators with widening disparities has been observed in child nutritional outcomes. Stunting affected 36.4 percent of ethnic minority children in 2010, dropping to 31.4 percent in 2015. Over the same period, stunting among Kinh children fell from 22.1 percent to 15.0 percent. Both groups improved, but the Kinh improved at a faster rate, with the gap between the majority and minority groups widening from 14.3 percentage points in 2010 to 16.4 percentage points in 2015.

FIGURE 1.2
Poverty rates by ethnicity: Vietnam, 2010–16



Source: World Bank analysis of household survey data.

Note: Poverty figures are based on the General Statistics Office–World Bank national poverty lines. Dashed lines indicate the interval of major revisions to the survey and measurement methodology.

Governance structure and customary law in ethnic communities

Historically, sociopolitical governance of society went no further than the village level and was generally organized around a council of village elders. These older men (and less commonly women) were chosen by the community through general acclamation (CIRUM 2012). In some villages, the council was formed from the heads of the lineages within each village. In most cases, governance was by the council as a whole; in others, the eldest, or possibly the wealthiest and most powerful, patriarch would be chosen to lead. The village elders discussed matters that concerned many households and made decisions on topics relevant to most, such as relocating the village (related to swidden agriculture or possession by spirits), settling conflicts between and within families, defining social norms on acceptable behavior, and assigning appropriate sanctions for violations of community custom. A distinctive characteristic of dispute resolution and conflict avoidance was community acceptance of customary laws.

With reunification of the country in 1976 after the U.S.-Vietnam War, the authority of village elders began to wane as changing demographics altered the monoculture of the villages.¹⁴ This shift culminated in the assignment of an official village headman to oversee implementation of community and household improvement projects. As the authority of the village headmen grew (facilitated by extensive knowledge of the system and often as a linguistic link between the ethnic minority populations and the state), the role of the patriarch was diminished to that of a ceremonial head who presided over cultural festivals or rituals. As the village went from a collective entity unified by culture, language, and common history to a union of individual households, state actors replaced the council of elders as the state assumed responsibility for administering land and law (Minh Anh, Kim, and Ubukata 2016).

RATIONALE FOR ADDRESSING MALNUTRITION AND DISPARITIES IN NUTRITION

Because malnutrition in early life significantly affects the physical and mental development of children, addressing malnutrition is fundamental to the development of national human capital. Economic development of the nation depends on the strength, resilience, and intelligence of its workforce. Governments dedicate millions of dollars annually to health and education, recognizing that individual losses in productivity may run as high as 10 percent of lifetime earnings and that as much as 2–3 percent of GDP can be lost as the prevalence and severity of malnutrition increases (Shekar, Heaver, and Lee 2006).

Vietnam's scores on global indexes of human capital (including health outcomes) confirm that, overall, Vietnam performs well for its level of income. As noted, the World Bank's Human Capital Project has given Vietnam a Human Capital Index¹⁵ score of 0.67, which exceeds the global average of 0.57, the East Asia and Pacific region average of 0.61, and the lower-middle-income country average of 0.48 (World Bank 2018b). Vietnam's average score also exceeds the upper-middle-income average of 0.58. On the health-related components of the Human Capital Index, Vietnam's performance also far surpasses that of other lower-middle-income countries: 98 of 100 children born survive to age 5 (versus a lower-middle-income country average of 96); 88 percent of 15-year-olds survive to age 60 (versus a lower-middle-income country average of 80 percent); and

75 percent of children are not stunted (versus a lower-middle-income country average of 73 percent). Nevertheless, similar to the stunting aggregates, it is likely that the national Human Capital Index aggregate masks wide disparities between the ethnic majority and minority groups.

As technology increasingly drives economies, reliance on intelligent application of knowledge, digital and traditional (Aikenhead and Ogawa 2007; Schmidt and Stricker 2010), is critical to lifetime well-being and economic success. The ability to acquire the necessary knowledge depends on access to and participation in a vibrant educational system that balances “Western” concepts with traditional understanding and definitions. Meanwhile, the success of any education system rests on the long-term health and nutrition of its students. When whole populations lack these developmental advantages, disparities arise, are sustained, and widen as the failures of early nutrition take their toll on children’s ability to adapt to the changing demands of their society.

Stunting is the result of nutritional deficiencies present at conception, throughout pregnancy, and into the first two years of a child’s life and is therefore used as an indicator of the nutrition and health of women before they conceive and during pregnancy and birth and of the care they provide to their newborns up to their second birthday. Research shows that height at age 2 predicts adult height (Shrimpton et al. 2001; Victora et al. 2010). The 1,000 days between conception and age 2 is a window of opportunity during which stunting can be prevented. Furthermore, because of the broad scope of its nutritional significance, it is a perfect indicator of the health and nutrition inequities that affect women and children.

During periods in which stature or brain development increase rapidly, the developing child (or fetus) is most vulnerable to inadequacies in nutrition. Stunting (or shortness) is a measure of height in relation to age. Children grow at different rates depending on their age—in utero and after birth. The most rapid period of linear growth is in the first half of pregnancy (Falkner, Holzgreve, and Schloo 1994). During pregnancy and in the months after birth, rapid growth requires total and simultaneous availability of the proteins, fats, carbohydrates, and micronutrients needed for cell membranes and cell nuclei to be constructed and the energy needed to link them together in the developing body of the child. An inadequate supply of even a small critical nutrient can cause lifelong problems in normal child development.¹⁶

The high rates of stunting in Vietnamese children, in particular of ethnic minority children, means that their development may be impaired, and that they will be less likely able to contribute fully to the development of their community or of the nation (see box 1.1). The presence of an entire generation in which preventable deprivation may affect one in three children, leading to limitations in physical and cognitive development, means that the potential contributions these children could make to a future Vietnam are squandered.

So that Vietnam can address undernutrition in its ethnic minorities, this study has undertaken a comprehensive review of the current nutrition situation in the country’s high-burden ethnic minority areas. This review covers the scope of existing nutrition-specific and nutrition-sensitive programs, program gaps, and opportunities for new or expanded interventions. The study also gathered secondary quantitative data, along with primary and secondary qualitative information from the various sectors and organizations involved in nutrition-related programs in Hanoi and affected provinces in the northern mountainous and central highlands regions.

BOX 1.1**Why tackling stunting is important for Vietnam**

The persistence of high levels of undernutrition despite decades of economic growth and poverty reduction leads to a staggering yet avoidable loss of human and economic potential. The chronic childhood undernutrition levels (leading to stunting) in largely ethnic minority regions in Vietnam remain among the highest in the world. These regions perform worse than some poorer countries in Sub-Saharan Africa—for example, South Sudan (31 percent),

Zimbabwe (27.6 percent), Namibia (23 percent), Senegal (19 percent), and Ghana (19 percent). The window of opportunity for receiving good nutrition is small—from conception through the first two years of life (the first 1,000 days). The damage to physical growth, brain development, and human capital formation that occurs with poor nutrition during this period is extensive and believed to be largely irreversible.

The study pursued the following objectives:

- Assess and analyze the state of maternal and child nutrition and development in the largely ethnic minority provinces of the central highlands and the northern midlands and mountainous areas and identify gaps in programs and policies aimed at reducing inequities in malnutrition in these areas.
- Understand why significant inequalities remain between ethnic majority and minority populations in Vietnam in view of the numerous government initiatives and policies that target poverty and malnutrition in ethnic minority populations and the dramatic improvements in nutrition seen in other segments of Vietnamese society.
- Based on the analysis, make recommendations for addressing gaps in policies and programs that have contributed to inequalities between these groups.

METHODS AND ANALYTICAL APPROACH

The overall analytical approach used in this multisectoral nutrition assessment and gap analysis (MNAGA) is based on a set of core pillars that are required for a well-functioning national nutrition system. The pillars were proposed by the Global Action Plan (GAP) for Nutrition in 2009 (the GAP eventually evolved into the Scaling Up Nutrition, or SUN, movement). The core pillars of the GAP methodology are the following:

- Pillar 1: Nutrition is recognized as foundational to national development.
- Pillar 2: Adequate local capacity is built and supported to design and execute effective nutrition policies and programs.
- Pillar 3: Cost-effective, direct nutrition interventions are scaled up where applicable.
- Pillar 4: Determinants of undernutrition are addressed through multisectoral approaches.
- Pillar 5: Coordinated support for nutrition is provided by development partners (including funding for advocacy, communications, and research).

This study examines the first four pillars in the context of Vietnam and with a special focus on ethnic minority populations (the fifth will be explored in future World Bank studies).

Three nonrelated conceptual frameworks are used in this study to respond to its different elements, each requiring a different organizing model:

- A modification of the UNICEF conceptual framework on the causes of child malnutrition (figure 3.1) is used to show the determinants of undernutrition at the immediate, underlying, and basic causal levels, with a focus on causality. Underlying and basic causes are expanded to show context-specific details related to (1) the nutrition of women and adolescents that is not evident in the more general UNICEF framework, and (2) augmented clusters of basic causes specific to ethnic minorities in Vietnam that arose from a complex system analysis. The latter places new emphasis on sociocultural barriers, issues surrounding land tenure, local governance, and institutional responsiveness.
- The adaptation of Bronfenbrenner’s Ecological Systems Theory (figure 4.1) seemed best suited to examine the relationships between the spheres of the health and nutrition system in Vietnam that affect individual and the household nutritional status. In this case, it is used to analyze the capacity and capability of each element of the system to deliver programs that could affect nutrition in ethnic minority communities, either directly or indirectly. It is not used to provide a causal analysis of malnutrition.
- Finally, the 2013 *Lancet* framework for action (figure 5.1) is often misunderstood as a tool for causal analysis, when in fact it is a summary of evidence-based interventions directed at various determinants in the UNICEF conceptual framework. Any causal element that does not have a matching evidence-based intervention does not appear in the framework. Thus this framework is useful for the correlation between interventions, quantitatively measured for effectiveness, and the particular causal determinants that the intervention modifies. Some of these interventions are considered “nutrition-specific” or direct; some are “nutrition-sensitive” or indirect. Both terms refer to interventions, however, not to causes. The *Lancet* framework is used in this analysis to assess the scope of interventions that are available and being implemented in Vietnam.

The data collection methods used in this study include the following:

- Quantitative information was gathered as secondary data through a systematic review of sources provided by Vietnam’s National Institute of Nutrition (NIN), ministries, and departments, as well as an extensive online search. Both published and unpublished documents were used. In some instances, primary data were reanalyzed for further correlations.
- Policies and programs in the health and nonhealth sectors that affect or could affect maternal and child nutritional outcomes were reviewed.
- Primary qualitative data were gathered from informant interviews with representatives of the Ministry of Health; Ministry of Education and Training; Ministry of Labor, Invalids, and Social Affairs; Ministry of Agriculture and Rural Development; Vietnam Women’s Union; and Institute of Social Sciences, along with provincial and district counterparts in Dak Lak province.
- Additional qualitative data were gathered from individual and group interviews in two communes in Dak Lak, along with observations from a field visit by the authors.
- A participatory process in which the World Bank/NIN team worked together on the study was used to identify causal elements and their interconnections to create a complex systems diagram of causality related to childhood stunting in ethnic minorities.

ORGANIZATION OF THE REPORT

This report is divided into seven chapters. Chapter 1 traces the origins of disparities in the context of Vietnam’s history and development. Chapter 2 analyzes the nutrition situation in ethnic minority provinces in the northern midlands and mountain areas and the central highlands. Chapter 3 assesses the determinants and causes of malnutrition using a causal framework and systems analysis. Chapter 4 reviews current commitments and policies directed at reducing disparities in malnutrition and the capacity of the system to reduce inequities. Chapter 5 examines the implementation of nutrition-specific interventions, and chapter 6 the implementation of nutrition-sensitive interventions, particularly those that require multisectoral coordination and collaboration. Chapter 7 then presents conclusions based on the analysis and recommends how programs could be strengthened to reduce inequities and fulfill the rights of all ethnic groups (majority and minority) in the northern midlands and mountain areas and the central highlands.

NOTES

1. Sixty-five percent of ethnic minorities in the first quintile had no education or only primary versus 48 percent of the Kinh and Hoa (World Bank 2012).
2. “Ethnicity is the most important circumstance for access to care for mothers, accounting for one-quarter of dissimilarities in receiving prenatal care and assistance at delivery” (World Bank 2012).
3. Unless otherwise stated, the statistics cited in this section are those reported in the World Bank Country Partnership Framework for the Socialist Republic of Vietnam for fiscal 2018–22.
4. World Bank, World Development Indicators (database), <http://datatopics.worldbank.org/world-development-indicators/>. Figure is for poverty headcount at the national poverty line (percentage of population), 2016.
5. World Development Indicators.
6. World Development Indicators.
7. For lower secondary school, net enrollment increased from 36.0 percent in 1992–93 to 84.4 percent in 2014, and upper secondary school net enrollment increased from 11.4 percent in 1992–93 to 63.1 percent in 2014. Unlike other indicators drawn from the Vietnam Household Living Standards Survey (GSO 1994), 2016 estimates for net enrollment are not yet available on the General Statistics Office (GSO) website.
8. Data based on Vietnam Household Living Standards Survey for 1992–93 and 1996 (WHO and UNICEF 2015); GSO (1994, 1996); and GSO and UNICEF (2015).
9. According to the second quarter 2018 Vietnam Labor and Employment Survey, the labor force participation rate was 82.0 percent for men and 71.4 percent for women (GSO 2018b).
10. The population age 65 and older in 2015, estimated at 7.1 percent of the total population, is projected to increase to 18 percent by 2049 (GSO and UNFPA 2016).
11. World Development Indicators.
12. Poverty is concentrated spatially, with nine of 10 poor people living in rural areas, especially mountainous ones, and in ethnic minority areas (World Bank 2018a).
13. The fiscal deficit averaged 5.6 percent of GDP from 2011 to 2015 versus 2.2 percent from 2006 to 2010.
14. Although villages were more likely to be more ethnically and economically homogeneous than communes (Kozel 2014, 140).
15. The Human Capital Index measures the amount of human capital that a child born today can expect to attain by age 18. It compares the productivity of the next generation of workers with a benchmark of complete education and full health (a score of 1). It is made up of five indicators: (1) probability of survival to age 5, (2) expected years of schooling,

- (3) harmonized test scores as a measure of quality of learning, (4) adult survival rate (fraction of 15-year-olds who will survive to age 60), and (5) proportion of children who are not stunted. It is constructed for 157 countries across the income spectrum.
16. For example, folic acid (vitamin B₉) is an essential micronutrient that, if absent or in short supply at conception, can lead to severe abnormalities of the spinal cord (such as spina bifida) or brain (such as anencephaly).

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2 Nutrition Situation in Ethnic Minority Populations

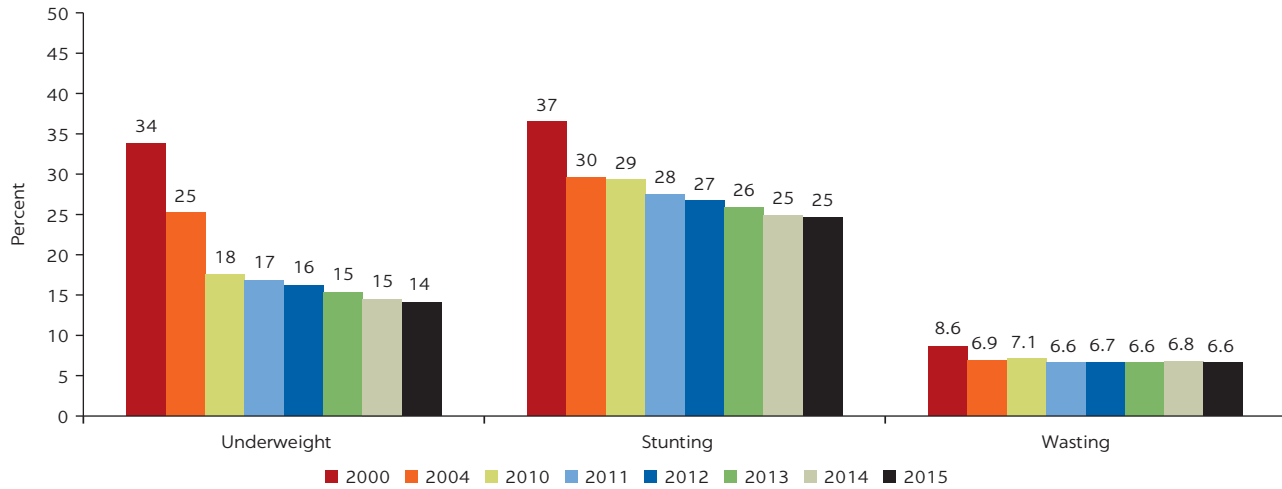
STUNTING PREVALENCE AND TRENDS

Stunting is considered the best indicator of undernutrition because it reflects the aggregate effects of disease and the nutritional sufficiency of mother and child from conception through late infancy (up to the child’s second birthday). Because at least 20 percent of stunting in children originates in utero (Black et al. 2013), stunting reflects the inadequacies in women’s diets and health before and during pregnancy, their child care practices, and feeding during infancy.

On average, Vietnam has achieved remarkable improvements in nutritional status in recent decades. Although the reduction in undernutrition has been significant, these improvements in national aggregates mask wide disparities and a persistent “very high” burden among disadvantaged ethnic minority groups (Kozel 2014). As shown in figure 2.1, between 2000 and 2010 national stunting rates dropped from 36.5 percent to 29.3 percent (GOVN 2018). The decrease from 2010 to 2015 was not as large, and when the 2015 data are disaggregated by ethnic group, the Kinh majority has a stunting prevalence of 17.5 percent, whereas the prevalence in other ethnic groups is 31.4 percent (figure 2.2). In fact, the gap in prevalence between the majority and minority ethnic groups even widened, from a 14.3 percentage point difference in 2010 to a 16.4 percentage point difference in 2015. There was less improvement in children from ethnic minority households, who showed only a 5.0 percentage point drop in stunting prevalence over five years, compared with a 7.1 percentage point drop among Kinh majority children. This pattern repeats itself for the prevalence of underweight—a significant drop nationally from 33.8 percent in 2000 to 14.1 percent in 2015, but underweight was prevalent in 9.7 percent of the Kinh ethnic group in 2015 versus 21.9 percent of other ethnic groups. Meanwhile, wasting decreased from 8.6 percent to 5.6 percent in national prevalence from 2000 to 2015, but with a 5.5 percent prevalence for Kinh versus 8.6 percent for other ethnic groups (World Bank 2012).

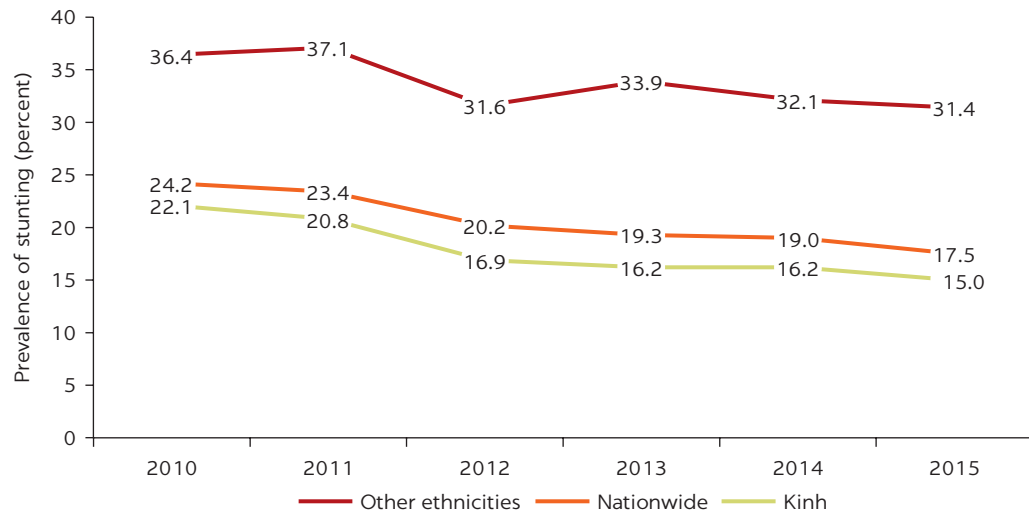
The undernutrition problem is also worse in the mountainous regions of the north and the central highlands, where malnutrition rates are highest. Data from the 2014 Multiple Indicator Cluster Survey (MICS) indicate that rates of

FIGURE 2.1
Trends in underweight, stunting, and wasting: Vietnam, 2000–15



Source: NIN/MOH.

FIGURE 2.2
Trends in stunting by ethnicity: Vietnam, 2010–15



Source: NIN/MOH.

childhood stunting in the northern mountainous (30.7 percent) and central highland (34.9 percent) regions remain alarmingly high (GSO and UNICEF 2015). Consequently, the ethnic minority groups make up the majority of the population in most (but not all) of the provinces with the highest rates of stunting among children under 5 years old (table 2.1).

Many factors are likely to have contributed to the national reduction in childhood undernutrition between 1990 and 2012. The success of the country’s family planning program, which lowered fertility rates from 3.1 in 1994 to 2.28 in 2002, may have created opportunities for families to better invest in child nutrition and health care. The effect of health care activities, including immunization, control of diarrhea, control of respiratory infections, and other

TABLE 2.1 Provinces in Vietnam with the highest stunting rates among children under 5 years old

PROVINCE	RATE OF CHILD STUNTING (%)	TOTAL NUMBER OF CHILDREN UNDER 5	NUMBER OF STUNTED CHILDREN	ESTIMATED PERCENTAGE OF ETHNIC MINORITY CHILDREN	ESTIMATED NUMBER OF STUNTED ETHNIC MINORITY CHILDREN
Kon Tum	39.3	54,800	21,540	53.2	11,439
Lai Chau	36.4	47,991	17,486	84.7	16,454
Gia Lai	35.3	132,460	46,758	44.0	20,637
Lao Cai	35.0	73,939	25,878	65.4	1,696
Ha Giang	35.1	79,300	27,854	86.8	21,177
Son La	34.3	210,392	73,164	82.4	61,122
Cao Bang	32.2	44,297	14,257	94.2	13,144
Dien Bien	31.9	66,386	21,171	81.6	17,275
Dak Nong	33.0	54,792	18,081	32.1	5,084
Quang Binh	30.5	62,742	19,130	2.4	459
Total		591,484	199,535		119,957

Source: Data from NIN, UNICEF, and Alive & Thrive 2014.

maternal and child health care programs also may have contributed to the reduction in childhood malnutrition. It is recognized as well that nutrition intervention activities in Vietnam played a critical role in the reduction of malnutrition in the past.

Income poverty is usually another important consideration when explaining improvements in nutritional outcomes. From 1993 to 1998, a 15 percent decrease in chronic malnutrition accompanied a period of rapid growth in the gross domestic product (GDP) that averaged 8.4 percent a year. Despite the assumption that the decrease in stunting was the result of strong economic conditions, no single factor emerged from analysis of the data. Because of the complex causality of stunting, this is not surprising. Higher household income and a strong economy account for some of the improvements in nutrition through, for example, a greater ability to afford a diverse diet and improvements in environmental cleanliness. However, based on calculations performed at the time using the 1993 and 1998 Vietnam Living Standard Survey, economic growth would explain only 3.5 percentage points of the 15 percent reduction in stunting (Glewwe, Koch, and Nguyen 2003; Ponce, Gertler, and Glewwe 1998), indicating that other factors, possibly indirectly related to the economy, led to nutritional improvements.

Three general conclusions emerged from these studies: “the gains in human development indicators can be greater than those predicted from trends in economic growth” (O’Donnell, Nicolás, and Van Doorslaer 2009); “the conventional determinants included in empirical models of nutrition may not fully explain the observed changes in the incidence of stunting” (Zanello, Srinivasan, and Shankar 2016); and the determinants that affect the nutritional status of severely stunted children may be different from those that influence the nutritional status of moderately stunted children. The first two conclusions suggest that the benefits of changes that improve many dimensions of life—not just monetary—can lead to a better quality of life and greater well-being. The third conclusion suggests that the multidimensional poverty that leads to severe stunting has components other than those that result in moderate stunting.

WASTING PREVALENCE AND TRENDS

Trends in wasting show patterns of improvement over the past 15 years similar to the improvements in stunting, although the causes are different. Wasting, or thinness (low weight for height) from acute malnutrition, can linger for months if the offending event—famine, drought, acute food shortage, or natural disaster—is not resolved or if effective treatment is not provided (Briend, Khara, and Dolan 2015). An analysis of trends in inequalities in child undernutrition in Vietnam that used findings from the 2000–11 MICS (GSO 2011) found that the overall prevalence of wasting declined over that period, albeit by only 1.7 percent. The significance of the finding is the degree of decline across socioeconomic quintiles. Although the decline extended across all quintiles, only the richest quintile showed a significant decline in wasting (3.4 percent). The significant reduction in the concentration indexes for all forms of undernutrition (underweight, stunting, wasting) indicated an increase in inequality from 2000 to 2011.

Wasting and stunting may have different causes, but they frequently occur in the same populations (such as poor ethnic minority groups), suggesting common associations and even synergy between them. Some studies have shown that a person grows taller only if the body has sufficient nutrients in reserve. In other words, until wasting has been corrected, height will not increase.

Wasting is an important indirect indicator of current food security. A sudden decrease in wasting that parallels a decrease in stunting suggests that, during that period, the food security of Vietnamese children improved significantly through availability, affordability, or accessibility and thus contributed to the increase in the height and weight of the population.

UNDERWEIGHT PREVALENCE AND TRENDS

As mentioned earlier, of the three commonly used anthropometric indicators of undernutrition, underweight (low weight for age) is the least specific and most difficult to interpret. Underweight can be the result of small body size (stunting) or small body mass (wasting). In general, underweight and wasting can be corrected with an accurate diagnosis of the cause and appropriate treatment, after which a child may resume a normal growth trajectory. Stunting beyond the age of 2 is largely irreversible (stature at age 2 predicts adult stature), regardless of the diagnosis of cause. As a result, the prevalence rates of stunting tend to stay high longer than the prevalence rates of underweight or wasting because once children are stunted, they tend to stay stunted, whereas underweight and wasted children tend to improve, reducing the prevalence.

Because stunting is a major component of being underweight, trends in being underweight align with stunting trends. The persistently high rates of stunting in poor ethnic communities in mountainous areas indicate similar trends in underweight, although the causes may be different. In other words, if a child is stunted, he or she would have been underweight for a long period of time. A child who is transiently underweight over age 2 is unlikely to become stunted as a result.

INTRAUTERINE GROWTH RESTRICTION AND LOW BIRTHWEIGHT

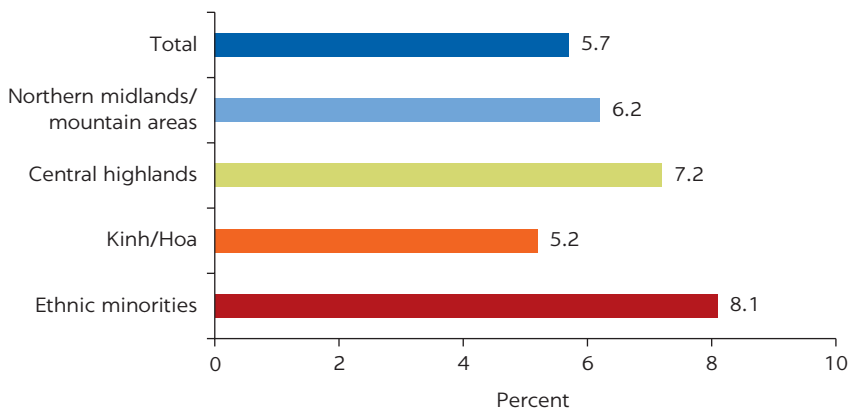
The prenatal equivalent of growth faltering is intrauterine growth restriction (IUGR), defined as poor fetal growth during pregnancy diagnosed through prenatal ultrasonic measurements or as a clinical definition applied to neonates born with attributes of malnutrition. It is usually associated with low birthweight (LBW), also called small for gestational age (Sharma, Shastri, and Sharma 2016). IUGR has many causes, but it usually stems from inadequate maternal macro- and micronutrition before and during pregnancy. Competition between the mother and fetus for nutrients (as in an adolescent pregnancy in a growing girl) is a known cause, as are frequent infections, including intrauterine infections. The low birthweight that accompanies IUGR has serious consequences for immediate child survival in the neonatal and infant period and serious consequences later in life as an associated finding in adult-onset diseases such as diabetes and coronary artery disease (Barker 1995).

Rates of LBW among ethnic minorities in the northern mountains and central highlands are difficult to establish because birthweight is not usually measured in remote areas or places where deliveries by a trained birth attendant are uncommon. Weight is usually not measured at birth after an unattended home delivery, and measurements taken later may not accurately represent birthweight because newborns tend to lose weight in the first week after birth. In Vietnam, 94 percent of women deliver their babies in the hospital or under the care of a skilled birth attendant, although this varies by location—91 percent of rural women have an institutional delivery—and socioeconomic level—72 percent of the poorest quintile of women have institutional deliveries (GSO and UNICEF 2015).

MICS 2014 (GSO and UNICEF 2015) data indicate that only 5.7 percent of all Vietnamese children weigh less than 2.5 kilograms (5.5 pounds) at birth (the cut-off point for LBW). These figures are based on reports on 94 percent of women who delivered in an institution, noting the exceptions just mentioned. These figures are credible, assuming that LBW children account for 20 percentage points of the 24.6 percent of children who are stunted because of IUGR (Black et al. 2013).

LBW rates among ethnic minorities and people living in the northern mountains and central highlands are higher than the national average or for

FIGURE 2.3
Percentage of live births weighing less than 2.5 kilograms: Vietnam, 2014



Source: GSO and UNICEF 2015.

the Kinh majority (figure 2.3). The LBW rate among ethnic minorities is 8.1 percent of babies weighed at birth, versus 5.2 percent of babies born to Kinh mothers. Of ethnic minority mothers, 14.6 percent who were not able to weigh their babies at birth estimated that their babies were very small or smaller than average. Only 8.7 percent of Kinh mothers made the same estimate. In the northern midlands and mountain area, 6.2 percent of babies are low birth-weight by weighing, and in the central highlands 7.2 percent are LBW by weighing. Overall, 85.6 percent of babies in the central highlands and 79.2 percent in the northern mountains are weighed at birth.

MICRONUTRIENT UNDERNUTRITION—“HIDDEN HUNGER”

Anemia

Anemia is a condition in which the blood has a lower than normal number of red blood cells, which carry oxygen from the lungs to all the tissues in the body (box 2.1). Thus the body does not receive enough of the oxygen-rich blood it needs for normal functions. Anemia has essentially three causes: (1) blood loss (such as from menstruation or internal bleeding); (2) deficient red blood cell production (such as aplastic anemia, when the bone marrow fails to produce enough new blood cells, or pernicious anemia or vitamin B₁₂ deficiency, which interferes with normal production); and (3) excess red cell destruction (such as that caused by thalassemia, sickle cell disease, or malaria). The most common type of anemia is iron-deficiency anemia, resulting from a lack of iron in the body and caused by blood loss, insufficient dietary intake, or poor absorption of iron from food.

The prevalence of anemia in Vietnam is reportedly 32.8 percent in pregnant women and 27.8 percent in children under 5 (GOVN 2018). These figures were calculated from data that the National Institute of Nutrition (NIN) collected during the National Micronutrient Survey 2014–2015 (MOH 2018), and reported in the National Plan of Action for Nutrition (NPAN) 2017–2020 (GOVN 2018). According to other sources, this prevalence of anemia in children is lower than has been reported for Thailand (31.8 percent in 2016) but higher than for China (21.4 percent).¹ The earlier General Nutrition Survey 2009–2010 (NIN/MOH 2010) disaggregated the data on the prevalence of anemia in children by ecological zone. The highest rates of anemia have consistently been found in the northern midlands and mountainous regions, where, for example, 42 percent of

BOX 2.1

Why is tackling anemia so important for women and children in Vietnam?

In pregnant women, anemia affects the mother, the growth of the fetus, and the future immunological and cognitive development of the child. Research in lower-middle-income countries has found that low birthweight, preterm birth, perinatal mortality, and neonatal mortality are associated with maternal anemia in the first and second trimesters. The risk of

preterm delivery is three times as high in a woman who is iron deficient upon entry into antenatal care (Allen 2000). In children, severe anemia can result in the loss of up to 25 IQ points (Lozoff, Jimenez, and Smith 2006). Infants of anemic mothers have been found to have low developmental test scores (Perez et al. 2005).

children ages 6–11 months are anemic. The goal by 2020, as articulated in the NPAN, is to reduce maternal anemia to less than 23 percent nationwide and less than 25.5 percent in mountainous areas. For children, the goal is uniformly less than 15 percent.

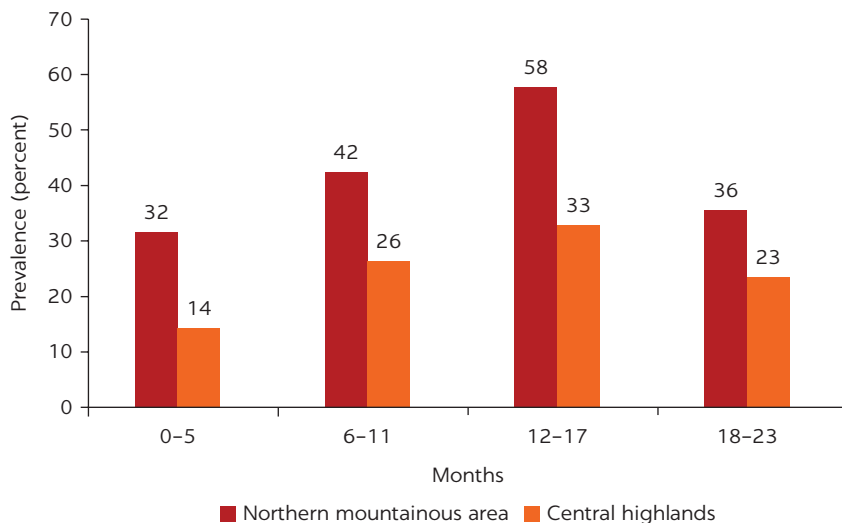
The prevalence of anemia in the northern mountain and central highland areas is approximately two times higher for children 6–17 months old than the national prevalence rate for children under 5 years old. The disaggregated regional prevalence in the national data is of great concern. Of equal concern is the extremely high rate of anemia in children younger than 5 months, reflecting significant inadequacy in maternal iron stores during pregnancy and in the immediate postpartum phase.

The difference in the prevalence of anemia in the northern mountainous area and in the central highlands (figure 2.4) is an indication that the ethnic groups and conditions in the two regions are not the same. Plausible causes of the difference include maternal anemia; land availability, quality, and use; personal and environmental hygiene; disease prevalence; and cultural food choices.

The similar poverty headcount rates in the central highlands (24.1 percent) and the midlands and northern mountains (28.0 percent) suggest that the difference in anemia rates between the two regions is attributable to something other than purely economic causes. This observation is supported by the fact that rates of multidimensional (beyond monetary poverty alone) child poverty are 82 percent in the northwest and 61 percent in the central highlands (UNICEF and UNFPA 2018). Further elucidation, however, would require a more granular analysis (World Bank 2018). Aggregating the rates of anemia of these two regions under the heading “mountainous regions” masks these differences and may mislead policy makers and program planners.

The cause of the high prevalence of iron-deficiency anemia in both regions that reaches a peak at the age of 12–17 months reflects limitations in the adequacy of maternal iron stores and the complementary foods given to children in the first and second years of life. Throughout the first year, children depend on the

FIGURE 2.4
Prevalence of iron-deficiency anemia in children in mountainous regions by age: Vietnam, 2009–10



Source: NIN/MOH 2010.

iron transferred from their mothers during pregnancy and childbirth (such as during delayed clamping of the umbilical cord) and in breast milk. A mother's inadequate supply of iron will affect the quality and quantity of that exchange. In most cases, stores of intrauterine iron transferred from mother to infant have been exhausted by 4–6 months of age. The high rate of anemia in women in Vietnam thus contributes to this pattern of iron-deficiency anemia because these stores run out sooner. After a child reaches the age of 6 months, women in ethnic minority households with food insecurity are likely to prioritize staple foods for feeding their children rather than the more expensive foods that are rich in protein and fats or their own garden produce, which may be minimal if land has been converted to cash crops that are not dietarily diverse. However, this is not always the case. In a study of the Tay and Ede communities (two of the largest minority groups in Dak Lak province), households with food insecurity used more diverse complementary feeding practices than the Thai-Muong community. The other cause of lack of diversity in the first two years could be attributed to sociocultural beliefs and taboos of the different ethnic minority groups (Nguyen et al. 2016).

Why anemia decreases in the second half of the second year is unclear. In many families, by the time children reach age 2 their dietary diversity has improved because the taboos related to infant and young child feeding are no longer applied, and the children are allowed to eat a wider variety of foods from the family diet.

Zinc deficiency

In Vietnam, the National Institute of Nutrition has reported a prevalence of zinc deficiency of 80.8 percent in under-5 children living in mountainous regions and 80.3 percent in pregnant women (figure 2.5) (GOVN 2018). It is estimated that as much as 17.3 percent of the global population is at risk of zinc insufficiency, which is associated with stunting. Many problems have been attributed to zinc deficiency, including low birthweight, premature delivery, and maternal mortality. In terms of its effect on pregnancy outcomes, a recent Cochrane review² found an association only between zinc and preterm birth.

In other studies, zinc supplementation resulted in significantly greater height (see box 2.2), 13 percent less diarrhea, and 19 percent less pneumonia. It was not found to have any significant effect on maternal mortality or on the mental or psychomotor development of the children (Bhutta et al. 2013).

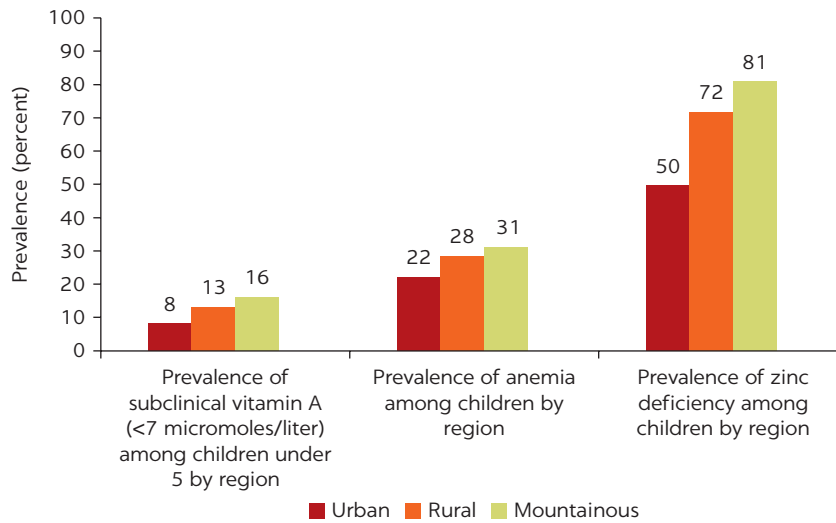
BOX 2.2

Zinc and preterm births

The evidence of a 14 percent relative reduction in preterm births for women receiving zinc supplementation versus placebo was uncovered primarily in trials involving low-income women. This finding has some relevance in areas of high perinatal mortality. Meanwhile, there is no convincing evidence that zinc supplementation during pregnancy

results in other benefits. Because the preterm association could reflect poor nutrition, studies to address ways to improve the overall nutritional status of populations in impoverished areas, rather than focus just on micronutrient or zinc supplementation in isolation, are urgently needed (Ota et al. 2015).

FIGURE 2.5
Prevalence of micronutrient deficiencies by region: Vietnam, 2014



Source: Nga and Van 2017.

Vitamin A deficiency

In Vietnam, the prevalence of subclinical vitamin A deficiency is 8.2 percent in urban areas, 13.1 percent in rural areas, and 16.1 percent in mountainous regions (figure 2.5). However, this is likely an underestimate of regional disparities because majority groups with low vitamin A deficiency still live in rural and urban areas. Vitamin A deficiency is 9.1 percent in the Red River Delta, 19.4 percent in the northwest mountains, and 20.9 percent in the central highlands (NIN/MOH 2010).

A pooled analysis of population-based surveys from 1991 to 2013 showed a significant decline in vitamin A deficiency, particularly in East and Southeast Asia, from 42 percent to 6 percent, which matches Vietnam's urban prevalence (figure 2.5). Where deficiency was higher—in Sub-Saharan Africa (48 percent) and South Asia (44 percent)—it accounted for 1.7 percent of all deaths in children younger than 5, although deaths from vitamin A deficiency have all but disappeared from most continents other than those noted (Stevens et al. 2015).

GAP ANALYSIS

Success in reducing inequity depends on accurate identification of families who are affected and living under conditions known to contribute to undernutrition. This approach calls for a targeted, evidence-based approach, which requires a mix of quantitative and qualitative data. Gaps in the kind of data collected and the way they are collected are discussed in this section.

Quantitative data with multiple sources: Occasionally conflicting

Data from multiple sources collected by national and subnational nutrition surveys at different times using different methodologies and producing different results cause some confusion. Each survey offers a slightly different

view of the nutrition problem. This report presents nutrition data from the General Nutrition Survey 2009–2010 (NIN/MOH 2010), Multiple Indicator Cluster Survey 2014 (GSO and UNICEF 2015), National Micronutrient Survey 2014–2015 (MOH 2018), National Nutrition Strategy 2011–2020 (GOVN 2012), and National Plan of Action for Nutrition to 2020 (GOVN 2018), along with other smaller studies.

Quantitative data: Insufficient data

Data have not been disaggregated by ethnicity for some nutrition indicators, and thus it was not possible to determine which of these groups of ethnic minorities was better or worse off. In the MICS data, most indicators are disaggregated by region, education, and economic quintile, with ethnicity as a separate category. The General Nutrition Survey 2009–2010 (NIN/MOH 2010) is more specific; major anthropometric indicators are disaggregated according to 11 ethnic groups in addition to the categories in the MICS. Nevertheless, in both surveys the important categories of micronutrients such as iron and vitamin A, food consumption, and nutritive value are disaggregated by region, poverty and nonpoverty commune, or urban versus rural location but not by specific ethnic group. Unfortunately, such a method does not provide an accurate description of the difference between the majority and minority ethnic groups or of the difference between the ethnic minority groups themselves.

More data are needed on the nutritional status—such as body mass index (BMI) and anemia—health, and pregnancies of adolescent girls, focusing on those ages 10–24 and according to their ethnicity. Adolescents are vulnerable to nutrition depletion because of the demands of rapid growth for micronutrients and protein. The most comprehensive profile comes from the General Nutrition Survey 2009–2010 (NIN/MOH 2010), which gives anthropometric values by age, sex, ethnicity, location, and economic status, although the data are not always easy to interpret. For example, Kinh women have one of the highest rates of low BMI—18.6 percent or less than 18.5 kilograms (weight) per square meter (height)—and yet one of the lowest rates of LBW babies. A useful addition would be measures of anemia in adolescent girls and women disaggregated by ethnicity.

The rural–urban difference in stunting should receive more attention. The urban advantage in many indicators of health and nutrition, including those for height and weight, is clear. This advantage is not new, nor is it unique to Vietnam; it is part of a global trend. The urban advantage in child anthropometric indicators is greatest in Latin America and the Caribbean, some African countries, and Vietnam and China (Paciorek et al. 2013). In Vietnam, the gap between urban and rural communities in height-for-age z-scores is 0.6–0.9, meaning that stunting is significantly less prevalent in urban centers in Vietnam. This finding accompanies the rapid urbanization found in many of these countries.

In Vietnam, 34.9 percent of the population is urban. However, with an annual urban growth rate of 2.9 percent,³ the urban population will double in less than 25 years (assuming the growth rate remains stable). Migration to cities is not common among the most vulnerable ethnic groups living in the highlands because of lack of education, lack of language skills, and cultural barriers. Thus the increase in urbanization and intensification of the urban advantage will leave highland populations further behind. The reasons for the rapid urban growth and the exclusion of most ethnic minority groups from that advantage should be

investigated. At the same time, despite the overall advantage of well-off families in urban settings and the preponderance of Kinh households, poor urban neighborhoods can be found in the cities as well.

Quantitative data: Dilution of ethnic minority data affecting interpretation

Provincewide or regional data are less useful in understanding the true disparities between ethnic minority households and the majority population of Kinh households than data for ethnic minority groups. Ethnic minority households, scattered widely across the nation and the provinces, are necessarily a small part of randomized samples. In some surveys such as the MICS, the provinces believed to have large concentrations of ethnic minority groups were over-sampled to compensate for this aspect of surveys. (Nevertheless, only 1,200 ethnic households were sampled in the national survey.) It may therefore be difficult to determine whether inequity gaps are growing, shrinking, or staying the same given the ongoing migration of the majority group into even remote areas of provinces.⁴ Under these circumstances, regional and area data may not accurately depict conditions affecting ethnic minority groups.

Quantitative and qualitative data: Transition to multi-indicator measures and composite indicators

Needed are composite indicators (such as a multidimensional poverty index) that account for the aggregate and interrelated deficiencies defining the most vulnerable populations. Such indicators would also inform program planners about which interventions must be provided if change is to occur. Examples of the information needed are the number of households with multiple micronutrient deficiencies, poor sanitation and environmental hygiene, food insecurity, more than three children, little or no education, and led by a single parent, as well as evidence of poor health care (Målqvist, Hoa, and Thomsen 2012). Quantifying these multiple deficiencies and reporting them as a single composite indicator could provide a more accurate description of the effects of malnutrition and highlight the most vulnerable members in each community.

Significant information could be gained from more qualitative research. Despite occasional gaps in quantitative data quality, completeness, and clarity, there is enough information from multiple sources to provide a general picture of the overall nutritional status of individual ethnic minority households in Vietnam. The available data indicate very generally who is most affected (majority versus minority), where the problem is (regionally and provincially), how big it is in general terms, and the extent of the inequity. Quantitative data thus provide a bird's eye view of the problem. Missing are the details that qualitative data could provide on each of these topics by probing the status of entire communities. Such data could create a more complete picture by revealing differences in attitudes and behaviors that could change perceptions of the problem and answer questions that the quantitative input raises: Who is missed from the "counting"? Are large clusters of the community not participating in service delivery and thus omitted from the assessment? What is the strength or weakness of social capital?

Is ethnicity the only (or most important) factor associated with deprivation and inequity? What is the role of gender? Qualitative data are also often associated with uncovering causality: why something happens or why people behave the way they do.

NOTES

1. See prevalence of anemia among children (percent of children under 5), <https://www.indexmundi.com/facts/indicators/SH.ANM.CHLD.ZS/compare?country=la-country=cn:kr:la>.
2. A Cochrane review is an in-depth systematic review of primary research in human health care and policy. Internationally, the reviews are considered the highest standard in evidence-based assessments of the effects of interventions for prevention, treatment, and rehabilitation. An independent global network of researchers, professionals, patients, caregivers, and people interested in health create and update the reviews regularly. They seek to promote the use of high-quality information in making health decisions. See <https://www.cochrane.org/about-us>.
3. See Central Intelligence Agency (various years).
4. Even in Lao Cai, one of the northernmost provinces on the border with China, the Kinh account for 35.9 percent of the population, whereas the Hmong (the dominant ethnic group in Lao Cai) account for only 22.2 percent.

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3 Determinants of Undernutrition in Ethnic Minority Provinces

CAUSAL FRAMEWORKS OF UNDERNUTRITION

UNICEF conceptual framework

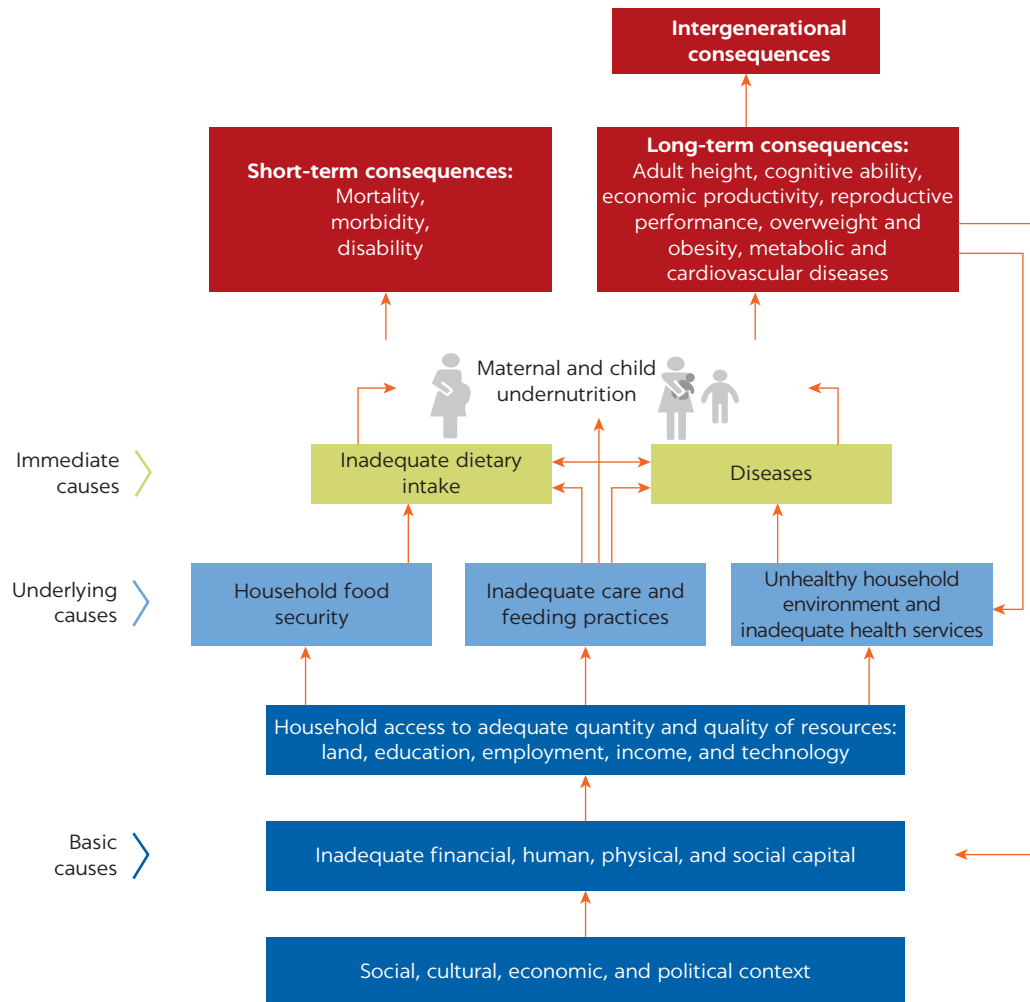
The UNICEF conceptual framework for maternal and child undernutrition (figure 3.1) is an internationally recognized framework for understanding the determinants of undernutrition. It divides causality into three tiers: immediate, underlying, and basic (UNICEF 2013). The immediate causes (nutrition-specific) include two conditions with a direct effect on malnutrition: inadequate dietary intake and disease. The underlying causes (nutrition-sensitive)—poor access to food, inadequate care of children and women, insufficient health services, and unhealthy environments—are the basis for the immediate causes. The basic causes of undernutrition include the political decisions that determine resource allocation; access to and control of resources; organizational strengths and weaknesses that affect the human and financial resources needed to support good health and nutrition; and cultural, religious, and social practices that limit community and household actions.

Individually, each determining factor is necessary but not sufficient for ensuring adequate nutrition. Actions at each causality level (figure 3.1) should be identified based on an analysis of each country's situation. The UNICEF framework is not intended to offer a prepackaged set of technical interventions. Rather, it provides a way for countries to analyze their undernutrition problem and identify the appropriate realistic interventions, ordering them in a logical sequence.

The strength and the limitation of the UNICEF conceptual framework are its simplicity. As a schema or basic representation of the factors involved in nutrition—and to maintain its clarity in representation—it shows a linear relationship between each layer in the schema without the interconnections between elements characteristic of the complex system it represents.¹ In addition, it is conceived as a conceptual framework for undernutrition and does not really capture the causal components of overnutrition (overweight and obesity). Finally, in its focus on maternal and child undernutrition it does not address the nutrition of women and adolescents in the months before pregnancy, when establishment of micro- and macronutrient sufficiency is important for a successful pregnancy.

Twenty-five years ago, when the UNICEF framework was first published, attention to this subject was largely restricted to postnatal causes of

FIGURE 3.1
UNICEF conceptual framework for maternal and child undernutrition



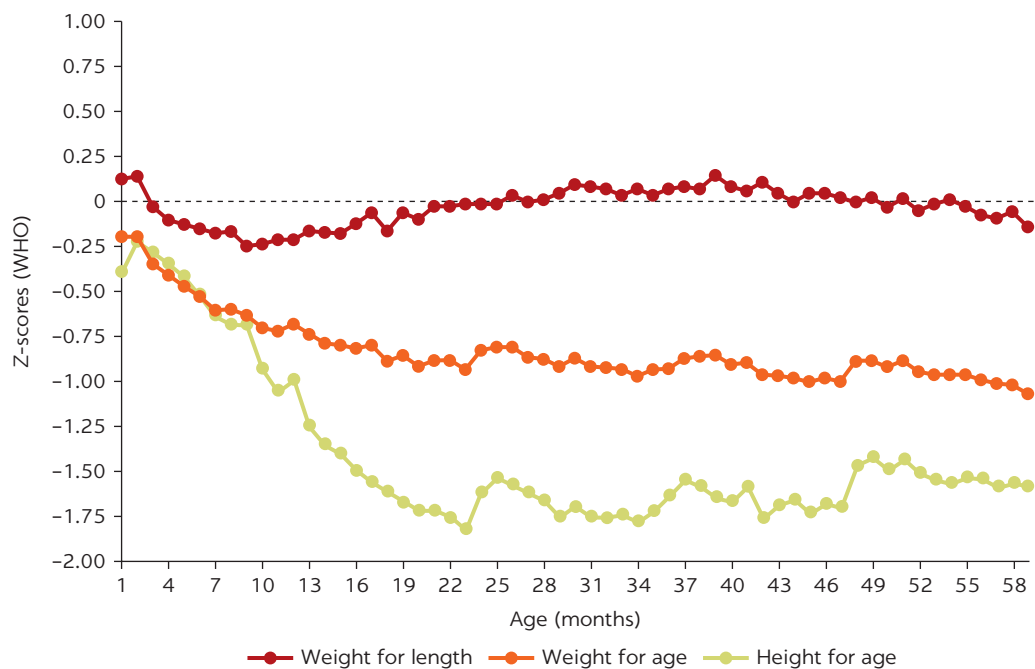
Source: UNICEF 2013 (CC BY 3.0 Unported).

undernutrition, as reflected in the immediate and underlying causes in figure 3.2. Since that time, the importance of the prenatal and the pre- and periconception periods have been recognized. This recognition arose with the realization that chronic undernutrition and the recurrent childhood diseases that lead to stunting begin much earlier than previously thought.

As shown in figure 3.2, stunting is present at birth in some infants, the result of poor intrauterine nutrition (Shrimpton et al. 2001; Victora et al. 2010). The vulnerable period of pregnancy that leads to stunting begins at conception and continues into the first trimester—the time of maximal fetal growth (figure 3.3)—but vulnerability is related to the health and nutrition of a woman even before she becomes pregnant. The prevalence of stunting increases until the fetus is 23–24 months old, after which it levels off.

It is estimated that 20–50 percent of childhood stunting has an intrauterine cause (Victora et al. 2010), with the rest arising from the previously understood postnatal causes as depicted in the UNICEF conceptual framework. Thus a woman's nutrition before and during pregnancy are of equal importance to the postnatal care of the child. To reduce the prevalence of stunting, both must be taken into consideration.

FIGURE 3.2
Timing of growth faltering, postnatal



Source: Victora et al. 2010.

Note: WHO = World Health Organization.

Complex systems analysis

A complex systems analysis uses a participatory process involving stakeholders from all levels of a project (commune to central level) to identify the causal elements of stunting in children and show their interconnectedness. Causal elements are defined and then interlinked. The number of interconnections they have with other elements indicates their importance. Those that are more connected are identified as causal nodes or hubs, offering a leverage point where a single intervention could have far-reaching effects throughout the entire causal diagram (Meadows 1999).

Folks who do systems analysis have a great belief in “leverage points.” These are places within a complex system (a corporation, an economy, a living body, a city, an ecosystem) where a small shift in one thing can produce big changes in everything.

Donella Meadows,
 “Leverage Points: Places to Intervene
 in a System” (Meadows 1999)

For this report, a modified complex systems analysis was used to unpack the underlying and basic levels of causality in order to define a more expansive number of causal elements. These were then used to analyze interconnections and identify causal nodes² where actions could leverage change over a wide range of causes. This approach also customized the causal frameworks to Vietnam-specific elements not necessarily found in other frameworks. Five nodes were identified, each interconnected, and improvements in all five will lead to a reduction in stunting. The value of the detail in the modified causal pathway is that it shows more clearly where intersectoral action is needed.

A “MODIFIED” CAUSAL FRAMEWORK FOR CHILDHOOD UNDERNUTRITION

Immediate causes of undernutrition

As a modification of the UNICEF conceptual framework, a third immediate cause of undernutrition is added to the diagram in figure 3.4: intrauterine growth restriction (IUGR). This factor reflects research published since development of the UNICEF framework in the 1990s that shows that children can be born already (growth) stunted and also addresses in utero causes and maternal health and nutrition before and during pregnancy (figure 3.3) (see Shrimpton et al. 2001; Victora et al. 2010).³

The immediate nutrition-specific causes of undernutrition in children are those with a direct effect on the mother’s and child’s nutritional well-being. They include problems with early, exclusive, and extended breastfeeding; micronutrient insufficiencies of mother and child; lack of dietary diversity, with suboptimal feeding; and infectious diseases. Differences in each of these between women and children in ethnic minority households and those in Kinh majority households are examined here to determine the immediate causes and correlates of persistent malnutrition in ethnic minorities.

Inadequate dietary intake

Adequate dietary intake for children involves household food security plus optimal infant and young child feeding practices: breastfeeding, age-appropriate introduction of complementary food, and minimum acceptable diet that includes dietary diversity and appropriate frequency. Some of the same factors apply to

FIGURE 3.3
Intrauterine and postnatal growth in crown-heel length, males



Sources: Falkner, Holzgreve, and Schloo 1994; Tanner 1990; Winick 1971.

Note: Non-dashed line is the observed/measured crown-heel length velocity. Dashed line is the projected/modeled crown-heel length velocity.

TABLE 3.1 Breastfeeding indicators

Percent

BREASTFEEDING INDICATOR	MICS 2011		MICS 2014	
	ETHNIC MINORITY	KINH/HOA	ETHNIC MINORITY	KINH/HOA
Breastfeeding initiated within one hour of delivery	54.7	36.7	36.3	24.4
Exclusive breastfeeding at 6 months of age	31.9	14.0	44.0	19.7
Appropriate complementary feeding at 6 months	46.4	37.0	71.9	50.5
Still breastfeeding at 2 years	54.0	13.4	37.0	18.8

Sources: GSO 2011; GSO and UNICEF 2015.

Note: MICS = Multiple Indicator Cluster Survey.

have higher rates of exclusive breastfeeding (without interruption with infant formula) is believed to be related to the cost of breast milk substitutes and the fact that poorer families cannot afford it. Another factor may be related to geographic isolation from the massive advertising by the manufacturers of infant formula.⁴ The depth of cultural practices may be another reason.

Among the ethnic minority groups, breastfeeding practices vary by ethnicity. For example, a qualitative study found that Hmong, Ta Oi, and Bru Van Kieu mothers stay home for only about 10 days after giving birth (MOH 2018). After this short period, they usually travel to distant fields to work, usually leaving infants at home with the father or grandmother. Women thus can only breastfeed their babies when they return home, usually in the afternoon. Therefore, after the first 10 days babies are fed other types of milk or food.

The positive performance of ethnic minority children in breastfeeding extends to the introduction of complementary foods. Vietnam's Multiple Indicator Cluster Survey (MICS) 2014 revealed that 72 percent of ethnic minority children were currently breastfeeding and receiving solid or semi-solid foods at 6 months of age, compared with 50 percent of Kinh household children. Meanwhile, 64.3 percent of ethnic minority children and 43.4 percent of Kinh majority children were found to be appropriately breastfed (GSO and UNICEF 2015).

The advantage that ethnic minority children have in early, exclusive, and extended breastfeeding with the appropriate introduction of complementary foods disappears in all subsequent indicators of adequate infant and young child feeding (IYCF). According to the 2014 MICS, Kinh households adhered better to the IYCF guidelines than minority households by sizable margins. In 2014 only 50.4 percent of ethnic minority children were receiving foods from at least four of the seven food groups,⁵ compared with 81.8 percent of Kinh/Hoa children. Although not specified in the MICS, other research suggests that the deficit in the ethnic minority community is in the (more expensive) higher-protein and fatty foods, although the research was from a 2004 source (Thang and Popkin 2004).

“Minimum acceptable diet” is a composite indicator that combines minimum dietary diversity and minimum meal frequency. For nonbreastfeeding children, it requires at least two milk feedings and a guarantee that measurement of minimum dietary diversity does not include the milk feedings. Children ages 6–8 months with minimum meal frequency who are currently breastfeeding receive solid, semisolid, or soft foods at least twice daily. For children ages 9–23 months, the frequency must be three times or more daily. Nonbreastfeeding children ages 6–23 months should eat at least four different types of foods at least four times a day.

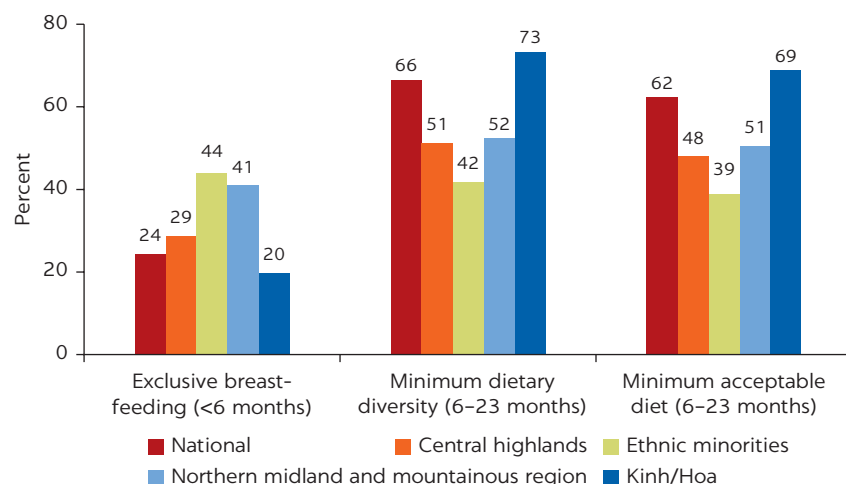
Overall, 80.2 percent of ethnic minority children and 92.4 percent of Kinh/Hoa children ages 6–23 months achieved a minimum meal frequency, and 39 percent of ethnic minority children and 69 percent of Kinh/Hoa children consumed a minimum acceptable diet (figure 3.5). For ethnic minority children, these figures might indicate tremendous vulnerability and a lack of food security in a country that is listed as food secure. This lack raises important questions: What causes this food insecurity?⁶ Does this inequity stem from the unavailability of food, inaccessibility, or poor supplies and storage, meaning no surplus to sustain adequate nutrition through a lean period or a period of shock? The question of food insecurity must be addressed as an underlying cause of undernutrition. These figures also may reflect caregivers' lack of knowledge about the optimal infant and young child feeding practices, sociocultural beliefs related to child feeding, or lack of parental/caregiver time for optimal child care.

Inadequate maternal nutrition and poor health: IUGR

Women's nutrition is important because intrauterine conditions account for from 20 to 50 percent of stunting in children. Conception is rarely predictable, and once a woman becomes pregnant, her existing nutritional deficiencies are carried with her into pregnancy. Furthermore, most women do not come for their first prenatal care visit until the second trimester, at a median gestational age of 5 months, when the pregnancy begins to show. In Vietnam, only 4 percent of women overall come in the first trimester. Although a higher percentage of women from the northern mountains (16.8 percent) and the central highlands (8.9 percent) come for a prenatal visit in the first trimester, the median gestational age at first visit is the same as in other regions except the southeast and the Mekong Delta (4 months). To offset this delay in attention to a new mother's nutrition and health during the most important developmental months for her fetus, it is important that she be healthy and well nourished before her first pregnancy and in anticipation of future pregnancies (GSO and UNICEF 2015).

A woman's preconception weight can predict child size at birth and linear growth at age 2. One study of birth outcomes related to preconception was conducted in communes in Thai Nguyen province, in which 50 percent of the women

FIGURE 3.5
Infant and young child feeding practices: Vietnam, 2014



Source: GSO and UNICEF 2015.

were from an ethnic minority (Young et al. 2018). The study found a prevalence of undernutrition of 30–33 percent (body mass index, BMI, less than 18.5 kg/m², kilograms divided by height in meters squared). A maternal preconception BMI of less than 18.0 kg/m² and a preconception weight of less than 43 kilograms were significantly associated with risk of child stunting. Another study comparing the effect of iron and folate supplements with that of folate supplements alone on anemia and growth showed that preconception supplementation with iron and folic acid resulted in greater linear growth and better fine motor development at 2 years of age than with folic acid alone (Nguyen et al. 2017).

The quality, as well as the quantity, of the diet of Vietnamese women from poor households is important. A study that analyzed the changes in food consumption reported in the 1992–93 and 1997–98 Vietnam Living Standard Surveys revealed the shift after (Đổi Mới) in the composition of the diets of adults in Vietnam (Trinh et al. 2018). The difference between poor and nonpoor people in nutrient intake decreased, although the proportion of calories from high-quality protein and lipid-rich food for poor people was lower than for those who were not poor. Poor households consumed 5.8 percent less protein from meat and 9.6 percent fewer lipids from fats than nonpoor households. The gap was filled with cereals and other starches. These dietary patterns persisted over nearly two decades. In 2017 those living in the northern mountains and midlands areas consumed the smallest protein share of calories (13.4 percent). Not unexpectedly, the Red River Delta and the southeast had the highest consumption of animal-based foods, eggs, and milk, although the northern mountain and midlands populations had a high proportion of vegetables (leafy vegetables, edible flowers, and tuberous vegetables) in their diets, as did those in the Mekong Delta.

In a small survey of nonpregnant women in the northeast mountains (Yen Bai province), Pasricha et al. (2008) found the prevalence of anemia to be 37.5 percent and of iron deficiency 23.1 percent. The prevalence of hookworm infestation was high, affecting 78.1 percent of the sample. Although again not addressing ethnic specificity, the survey confirmed that the high prevalence of nutrition deficiency and infestation reflects the conditions of the region. A later study conducted in 2013 in the mountainous regions of the northeast (Thai Nguyen province) in which 49.5 percent of the sample were women from ethnic minority groups (2,466/4,986) found the prevalence of anemia to be 19.7 percent (Nguyen et al. 2015). The anemic population was characterized by insufficient iron stores, which was significantly associated with low education, low vitamin A levels, and high rates of hookworm infestation.

The 2013 study investigators examined the multifactorial etiology of anemia as it fit into their conceptual framework and identified an association between underlying factors (occupation, education, food insecurity, and socioeconomic status) that influenced a range of intermediate determinants (such as dietary behavior, sanitary practices, and access to health services). These determinants in turn affected underlying causes (such as access to adequate food and hygienic conditions in the home) and ultimately the immediate causes of adequate dietary intake (such as frequency of meat intake) and diseases (such as hookworm infection). All were on a pathway affecting iron stores and vitamin A status. The effect of hookworm was larger than expected because deworming is an important part of the national strategy to prevent anemia; more than 20 percent of the study sample tested positive for hookworm (although this was significantly less than the 78 percent just noted for Yen Bai province). Women who belonged to an ethnic minority group were 1.5 times as likely to be anemic as Kinh women.

Diseases and other health conditions

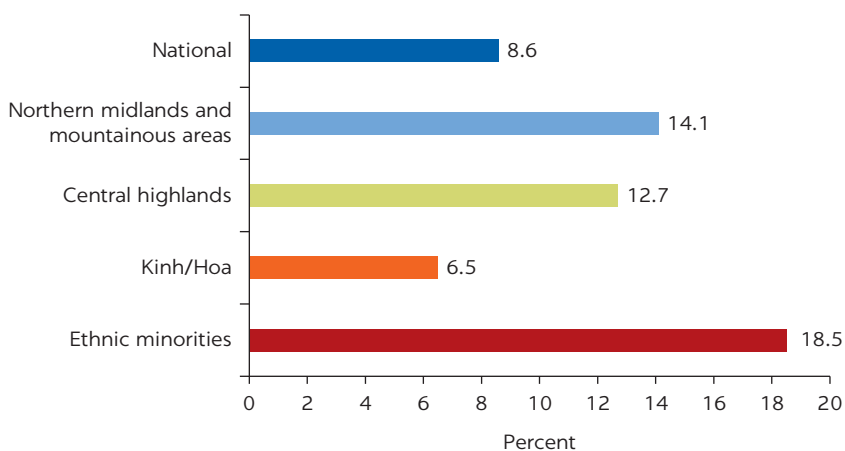
Intrauterine infections can have profound effects on mothers and their developing fetuses, leading to IUGR and LBW, congenital defects such as eye problems (including blindness), cardiac defects, deafness, short stature, and fetal and neonatal death. Examples of intrauterine infections that can cause IUGR and developmental delays of significance for Vietnamese women are described in this section. Ideally, these should be diagnosed before a woman becomes pregnant, but a simpler way to reduce their incidence is through improvements in environmental and personal hygiene.

Although these infections are equally a problem in the Kinh and non-Kinh groups, epidemiological characteristics suggest greater susceptibility in remote rural regions. Congenital toxoplasmosis⁷ thrives in contaminated environments, where people can become infected after eating raw or poorly cooked meat or ingesting oocysts in cat feces left in soil, food, or water. Dengue infections are more common; in 2015, 82,000 Vietnamese were infected with dengue, 25 of whom died (Tien Dat et al. 2018). Congenital rubella syndrome is a vaccine-preventable disease that can lead to multisystem anomalies involving hearing, sight, and cardiac disease, in addition to low birthweight and persistent growth failure. Populations with low dengue vaccine coverage are vulnerable. Sexually transmitted diseases such as syphilis can lead to LBW, stunting, and developmental delays. In a recent workshop,⁸ the deputy minister of health noted the challenge in preventing these diseases in areas of Vietnam where prepregnant and pregnant women lack access to health services (such as in remote and border areas).

Placental malaria occurs when malaria-infected red blood cells block the placental blood vessels and prevent nutrients from reaching the fetus. Malaria control in Vietnam is best in the cities, where the parasite has been virtually eliminated, but it is still endemic in poorer rural areas and found mostly in the forested areas of the central highlands where forest workers come into contact with mosquitos (Erhart et al. 2005; Goldlust et al. 2018). The most common parasite is *Plasmodium falciparum*.

Diarrhea and parasitic infestation from soil-transmitted parasitic worms, the result of fecal–oral transmission in young children, have long been known to affect nutrition through the loss of nutrients due to malabsorption. A more recent hypothesis has linked chronic and recurrent diarrhea to a malabsorptive condition formerly known as tropical sprue (Hillary 1759), now known as environmental or tropical enteropathy. This is a condition in which infections lead to malabsorption due to inflammation in the small intestine. The inflammation increases transmission of pathogens across the intestinal wall, reducing nutrient absorption. This condition may progress without obvious diarrhea after the initial acute infection. It limits the availability of critical nutrients during the time of rapid growth in developing children.

The MICS 2014 describes diarrhea as a common infectious disease that burdens ethnic minority communities disproportionately (GSO and UNICEF 2015). Diarrheal disease is linked to malnutrition, and stunting in particular, and probably contributes to the difference in stunting between the ethnic minority community and the Kinh majority. However, a snapshot of children incurring an episode of diarrhea in the last two weeks can testify only to the environmental conditions and hygiene in the ethnic minority communities that contribute to this disease, not to the potential for short stature (figure 3.6). Access to health services is necessary (as well as improvements in environmental cleanliness) to prevent the chronic condition from developing and to interrupt the cyclical

FIGURE 3.6**Diarrheal diseases in children: Vietnam, 2014**

Source: GSO and UNICEF 2015.

nature of diseases that leads to poor nutrition, which in turn increases susceptibility to the disease. Safe disposal of children's feces is important because most soil-transmitted diseases are transmitted through young children who put their unwashed hands in their mouths after playing outside (figure 3.6).

Underlying causes of malnutrition

Household food insecurity

Although Vietnam is considered to be a food-secure country, data on household food security disaggregated by region, province, or ethnic group is difficult to find. Proxies can be used to indicate (though not prove) whether populations are food secure: levels of undernutrition, evidence of dietary diversity (macro- and micro-nutrient consumption), effects of price changes on consumption patterns, resilience to shocks, means of self-sufficiency (such as access to good-quality land, seeds, compost, or fertilizer), and availability of a variety of food in local markets.

Studies from Bangladesh, Ethiopia, Nepal, and Vietnam show a statistically significant association between food insecurity and stunting and underweight (Ali et al. 2013; Singh, Singh, and Ram 2014).⁹ A smaller study by Helen Keller International in Kailali District in Nepal failed to find a significant association between household food insecurity and malnutrition, although it found a significant association between household economic status; maternal education, height, and hemoglobin concentration; food security; and indicators of undernutrition (Osei et al. 2010). A nationwide study from Nepal based on Demographic and Health Survey (DHS) data also found a high prevalence of stunting (33 percent), wasting (10 percent), and underweight (23 percent) in food-secure homes, adding support to the observation that food security is necessary but not sufficient for good nutritional status in children (Singh, Singh, and Ram 2014).

As food production in recent decades has shifted to high-yield crops in Vietnam, greater use of costly chemical fertilizers and pesticides has accompanied increases in production (Kyeyune and Turner 2016). In addition, because increases in productivity depend on access to arable land, the effects of excessive chemical substances on the deterioration of the environment and land result in even more stress on small household land holdings. Although Vietnam as a

whole is food secure (producing enough rice to feed its population), national food security hides household food insecurity in ethnic minority and rural areas and conceals changes in household food quality that have accompanied national production increases (Thang and Popkin 2004).

As for food insecurity and dietary diversity, it is believed that household food insecurity is associated with undernutrition through the poor quality and low quantity of food available. Some studies have examined whether increasing dietary diversity can mitigate the effects of food insecurity by providing essential vitamins and minerals that could improve the quality of the food provided. However, the results have been mixed, and in the studies just described, there was no significant association between increases in children's dietary diversity and reduction of stunting associated with food insecurity. Nevertheless, Nguyen et al. (2013) found a strong association between the mother's dietary diversity and stunted growth of the child in data from Bangladesh, Ethiopia, and Vietnam.

Fungal infections of food with species of *Aspergillus* can lead to contamination with the mycotoxin aflatoxin, which causes stunted growth and delayed development in children and liver carcinoma and eventual death in adults, and these species are highly toxic to animals as well. Aflatoxins are toxic secondary metabolites of *Aspergillus* molds that contaminate foods such as maize, rice, and legumes. There is growing evidence of a relationship between aflatoxins and childhood stunting. Although only a small number of observational studies have been conducted, they have found a strong association between aflatoxin exposure and growth restriction (Leroy 2013).

Aflatoxins have been found in umbilical cord blood, indicating transplacental exposure in utero that is strongly related to a low birthweight and short stature for age. Although aflatoxins are transmitted in breast milk, the concentration is lower than in solid foods, and exclusive and extended breastfeeding can reduce aflatoxin exposure, possibly through dilution of the contaminant (Mukherjee 2013). Aflatoxins are among the more serious chemical food contaminants (such as dioxin aflatoxin, cyanide present in cassava, and peanut allergens) contributing to the burden of disease (Moy and Miller 2016). They are associated with the most global disability-adjusted life years ($n = 636,869$).

The ethnic minority groups living in the northern mountains are particularly vulnerable to aflatoxin contamination because of the environmental conditions of seasonal heat and high humidity interspersed with drought and the poor storage conditions that favor aflatoxin production and spread of fungal spores. In many areas, ethnic minorities depend on maize as a staple food or as food for animals. The animals can become infected and can store and transmit the mycotoxin to the humans who ingest the contaminated meat. In a National Institute of Nutrition study of dietary exposure to aflatoxin B₁ and other mycotoxins in Lao Cai province, adults and children from the Kinh majority were found to have the greatest exposure to aflatoxin B₁ because of their high consumption of affected rice (Huong et al. 2016). No correlation was found between their height for age and aflatoxin ingestion, but their level of consumption (63.6 nanograms per kilogram of body weight per day) was almost nine times as high as that of the Xapho ethnic minority group (7.6 nanograms per kilogram of body weight per day). The other ethnic groups were exposed, but perhaps because of their poverty they consumed less. Nevertheless, this would not explain the difference between the stunting rates for the Kinh and other ethnic groups. Another "protective" factor for the poorer groups is their low zinc levels, which are believed to protect against aflatoxin toxicity (Wee, Day, and Linz 2016).

Lack of dietary diversity is another risk factor because it does not offer dilution of the full effects of the aflatoxin-affected maize or rice. Yet another risk factor may be the use of high-yield hybrid maize crops, which a 2006 study in the state of Arkansas found to be susceptible to mycotoxin-producing fungi in particularly stressful environmental conditions characterized by high heat because of their generally compromised defense systems (Abbas et al. 2006; Majeed et al. 2017).

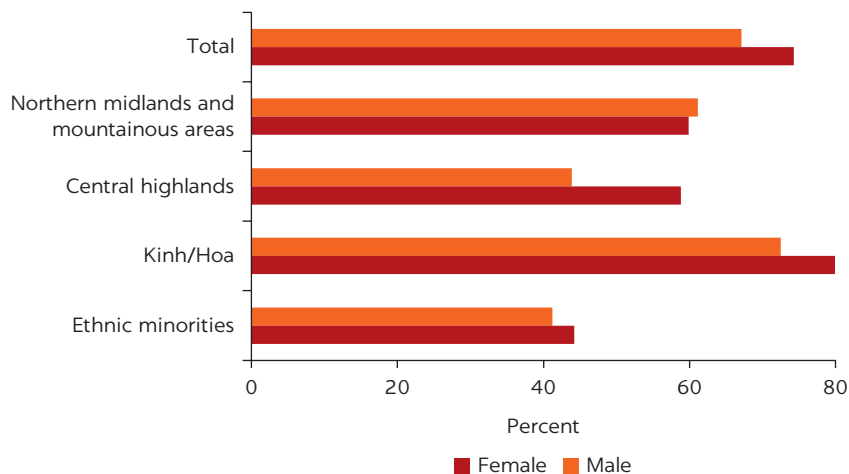
It is tempting to view aflatoxins as the single cause of the persistent stunting in ethnic minority populations in the mountainous regions of the north and as the reason for the inequity between poor minority groups and the wealthier Kinh majority. It may be that they are such an important causal factor in growth restriction that they should be urgently addressed, but they are not the only factor.

Care for women

Most ethnic minority households are organized around a patriarchal social construct, and so women do not enjoy the same status as men in society. Although some women, particularly in more economically advanced parts of Vietnamese society, enjoy greater freedoms than those in isolated areas without as much contact with new ideas and practices, overall boys and men have greater privilege than girls and women. The persistence of this thinking is evident in the growing imbalance in the sex ratio at birth, which widened from 107 boys per 100 girls in 1999 to 112 boys per 100 girls in 2014 (Den Boer and Hudson 2017). Gains have been made in women's rights, but they have predominantly affected the more educated majority. Any progress made by the ethnic minorities has been slower.

Girls have attained higher levels of education than boys, although girls from the ethnic minorities lag far behind Kinh girls (figure 3.7). Retention in upper secondary education is critical because it means those girls (ages 15–18) have avoided the early marriages and adolescent pregnancies that severely limit their future social and economic mobility. In 2014 nearly 60 percent of girls in the northern mountains and the central highlands attended upper secondary school

FIGURE 3.7
Upper secondary school attendance ratios: Vietnam, 2014



Source: GSO and UNICEF 2015.

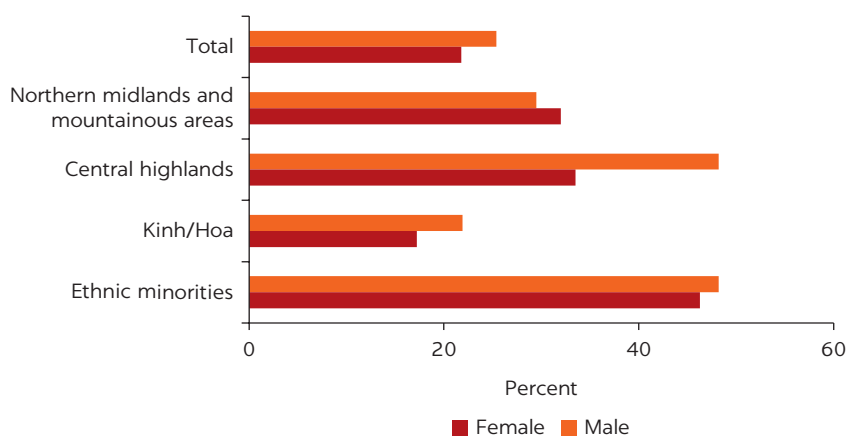
(GSO and UNICEF 2015). Establishment of boarding and semiboarding schools that serve children from remote villages in the mountainous areas has contributed to this result. In most cases, the girls board at school from Monday to Friday and return home for the weekend.

Upper secondary school-age children who are not attending school are vulnerable, particularly girls, who face possible early marriage and adolescent pregnancy (figure 3.8). Despite government efforts to increase the access of ethnic minority students to basic education, the gap between ethnic minority and majority students and families persists. The reasons for this are complex and include the socioeconomic status of the families, their distance from and the location of their school, language, and ethnic stereotyping (Chi 2009). In addition, the inequity observed between majority and minority groups also exists within the ethnic minority community.

The result (and sometimes the cause) of dropping out of school is that 82.9 percent of ethnic minority girls work from the age of 15 versus 70.2 percent of Kinh girls (UN Women and CEMA 2015). Only 37.9 percent of ethnic minority women are wage earners. The rest are self-employed or unpaid family workers in agriculture. When women have paid employment, they earn less than men. The lack of paid employment opportunities and failure to progress in school were among the reasons given in interviews with officials in Dak Lak for early marriage and pregnancy.

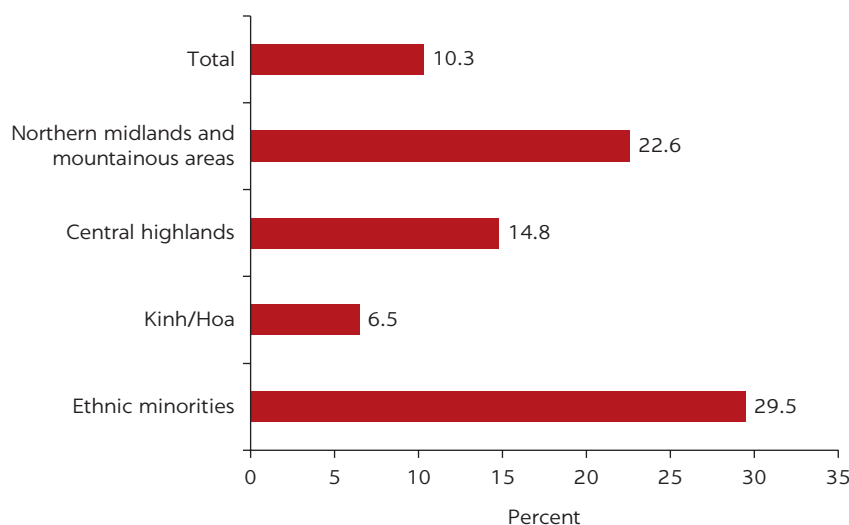
Early marriage and pregnancy are another cause of inequity between ethnic minority and Kinh women and one with a significant effect on stunting (figure 3.9). Early marriage and adolescent pregnancy lead to higher maternal and neonatal mortality, low birthweight and stunting of children, and undernutrition of the mother because the growing girl competes with the fetus for nutrients. Adolescent mothers also experience arrested growth from the effect of the hormones of pregnancy on the growth of long bones and postpartum weight loss due in part to the high energy demands of lactation (Rah et al. 2008). Adolescent girls who marry achieve less education and subsequently less earning capacity. They are also subject to high rates of intimate partner violence (Hong Le et al. 2014).

FIGURE 3.8
Upper secondary school-age males and females not attending school:
Vietnam, 2014



Source: GSO and UNICEF 2015.

FIGURE 3.9
Percentage of adolescent girls by ethnicity who are married: Vietnam, 2014



Source: GSO and UNICEF 2015.

Although national surveys in Vietnam reported a stable adolescent pregnancy rate of 4 percent from 2003 to 2008 (Nguyen, Shiu, and Farber 2016) and only a slight increase to 4.5 percent in 2014, these rates mask differences in minority groups. When disaggregated by economic status, education, ethnicity, or location, the data reveal a different picture: 18.3 percent of ethnic minority girls and 3.9 percent of Kinh/Hoa girls ages 15–19 had had a live birth; from the poorest wealth quintile overall, 10.8 percent had had a live birth, compared with 1.2 percent for the richest quintile; 23.5 percent of girls ages 15–19 with no primary education had had a live birth, compared with 2.3 percent of those with an upper secondary education; and 15.4 percent of adolescent girls from the northern midlands and mountain region had had a live birth, compared with 2.4 percent of those from the Red River Delta (GSO/UNICEF 2015). Gender discrimination prevents girls in traditional families from accessing contraception or obtaining treatment for sexually transmitted infections (OECD Development Centre 2017). Meanwhile, some child marriages occur within the same extended family to keep the property within the family.¹⁰

As noted, adolescent pregnancy is an important cause of stunting in adolescent mothers and their children. Normally nourished adolescent girls go through an adolescent growth spurt starting at about age 10, reaching peak height velocity at about age 12. Menarche occurs 1.3 years after peak height velocity, after which growth tapers off (Kaczmarek 2002). Chronic undernutrition in girls changes this pattern, and so they may not experience the same growth spurt but will continue to grow at a constant but lower velocity (with a two-year delay in menarche) until the age of 20 or even 21, when they will reach close to normal height (Rush 2000; Shah 2016). However, if these undernourished girls become pregnant while they are undergoing that growth, the release of pregnancy-related estrogen will prematurely fuse the growth plates in the long bones, and growth in height will stop, causing stunting (Shim 2015). Stunting and immature development of the pelvic bones in adolescents are linked to obstructed labor,

which would not cause problems in a modern obstetrics service capable of performing a semi-elective caesarian section, but it could easily lead to maternal death in the remote mountainous areas where many of these girls live.

Finally, patriarchy is associated with domestic violence and intimate partner violence (IPV) in these societies. A national survey in 2008 found the lifetime prevalence of any form of domestic violence against women in Vietnam to be as high as 82 percent (Hong Le et al. 2014). IPV is higher in ethnic communities, with lifetime prevalence ranging from 8 to 38 percent, and is twice as high in girls who marry before age 18 (GSO 2010). The 2010 Survey Assessment of Vietnamese Youth Round II also found that low socioeconomic status and exposure in early childhood to physical violence by a family member resulting in injury were associated with IPV in girls (Hong Le et al. 2014). The same year, the 2010 National Study on Domestic Violence against Women found the following risk factors to be associated with IPV: a husband's behavior as a demonstration of his male power (such as having extramarital affairs or fighting with other men), alcohol use, violence experienced in childhood, and a woman's *greater* financial contribution to the household. These are all signs of underlying gender and power imbalances (GSO 2010; Jansen, Nguyen, and Hoang 2016).

IPV is strongly associated with malnutrition in women and children, including stunting in children and anemia in women and children (Ackerson and Subramanian 2008). In a study in India, children of women exposed to IPV in the previous year were as much as 25 percent more likely to be stunted (Chai et al. 2016), and a recent Vietnamese study of IPV during pregnancy by Hoang et al. (2016) found a statistically significant association between IPV and preterm birth (five times as likely) and low birthweight (six times as likely).

Health services

Approximately one-third of Vietnam's population is 10–24 years old, and 16.3 percent is 15–24 years old—the highest percentage of young people in the history of the country.¹¹ Thirty-five percent of young people who are not married are unable to obtain contraception,¹² exposing them to unwanted pregnancies and illegal and unsafe abortions, especially those ages 15–19. The lack of access to contraceptives also points to a deficiency in the education of adolescents and young people in sexual and reproductive health.

For maximum change, it is important to provide services along with educational programs. Adolescents and women of reproductive age from ethnic minorities have a higher total fertility rate than women from the Kinh majority in the lowlands. The fertility rate for some ethnic minority groups is as high as 5.0 children. The problems in these communities include little availability of or access to contraceptives and education on their use; high rates of early child-bearing; low rates of abortion, largely due to strong ideological beliefs that oppose the practice; and fear of side effects of contraceptives (Amin and Teerawichitchainan 2009). The rate of married or unmarried couples not using any contraception is as high as 30 percent in ethnic minority groups and 23.4 percent in the Kinh/Hoa group. Young couples from these ethnic minorities receive no or little information about safe sex, changes during puberty, family planning methods, and protection from HIV and sexually transmitted infections (UN Women and CEMA 2015).

Part of the problem is the quality of the services provided; service providers in these areas are hard to reach and work in modest physical facilities with insufficient equipment and often inadequate human resources (MOH and Health

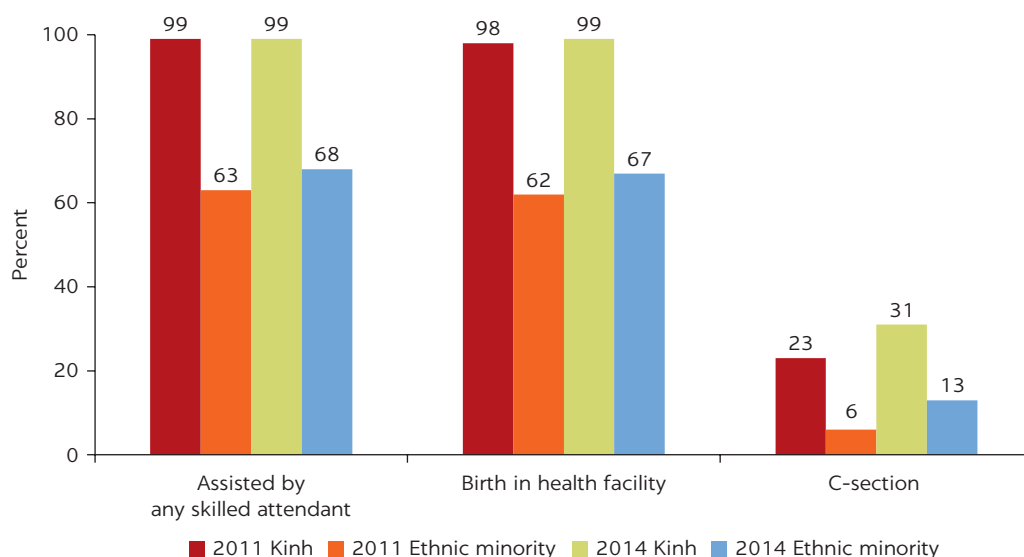
Partnership Group 2010). Although the Ministry of Health's *Joint Annual Health Review* (MOH and Health Partnership Group 2016, 2017) reported significant changes in policy aimed at improving health care delivery to ethnic minorities in remote villages, difficulties remain in providing trained staff consistently to these populations.

As noted earlier, according to the MICS 2014, in Vietnam only 4 percent of women overall seek prenatal care in the first trimester (the median gestational age for the first visit is five months pregnant). The difference between Kinh/Hoa women and ethnic minority women is more important. Kinh women seek prenatal care on average at four months, whereas the average for ethnic minority women is five months. A more worrisome statistic is the 20 percent of ethnic minority women who had no prenatal visits. In the MICS 2014, only 32.7 percent of ethnic minority women had the recommended four visits, whereas 82.1 percent of Kinh women were seen four times. In the midst of this discouraging information is the surprising fact that 20 percent of all pregnant ethnic minority women were seen in the first trimester, compared with 0.8 percent of Kinh women. The difference is the latecomers; 20.1 percent of pregnant ethnic minority women were first seen in the last trimester—too late for any monitoring or treatment of nutritional or health conditions such as anemia, IUGR, and micronutrient deficiencies (GSO and UNICEF 2015).

Strengthening human resource capacity improves quality of care, and in ethnic communities it can contribute to increased use of health facilities, acceptance of advice, and uptake of program outputs. Many ethnic minority women, particularly those from remote villages, report not seeking health care because of its poor quality. Their concept of poor quality goes beyond the ability to treat diseases or malnutrition and includes lack of female health care providers, language barriers encountered at health centers that make communication difficult and increase confusion, the stigma of seeming stupid because of different cultural beliefs that dictate behaviors or because of not being able to speak or read Vietnamese, and feeling inadequate because of not being able to pay for services (UN Women and CEMA 2015).

The capacity of the system for public health nutrition is also lacking. Discussions in villages and at local health centers revealed that training in public nutrition was lacking; only the doctor in the health center was aware of the importance of the period from conception to the child's second birthday (1,000 days). In schools and in the community, education on nutrition, where it exists, focuses on food, dietetics, and clinical nutrition. How nutrition can affect the economic development of communities is not communicated, and most people interviewed for this study, including health care workers, were unaware or had only limited knowledge of the possible causes of stunting and its importance for personal and national development (see chapter 4 for more on capacity development).

As for deliveries, ethnic minority mothers are more likely to deliver at home than Kinh women, although the percentage of institutional deliveries is increasing for ethnic minority women (figure 3.10). In 58.8 percent of deliveries for ethnic minority women, the person assisting is a medical doctor, and in an additional 9.5 percent the person is a nurse-midwife. By contrast, for Kinh women 92.7 percent of deliveries are assisted by a medical doctor and 6.3 percent by a nurse-midwife. Another significant difference is that ethnic minority women turn to a relative or friend 21.2 percent of the time for assistance with a birth, whereas Kinh women are less likely to do so.

FIGURE 3.10**Ethnic disparities in trained assistance at birth and caesarean section rate: Vietnam, 2014**

Sources: GSO 2011; GSO and UNICEF 2015.

The reasons given for delivering at home are similar to those for foregoing prenatal care: distance, cost, informal payments for treatment, language barriers, and negative attitudes of health staff. But other studies have found the reasons to be not so simple. The focus is often on the Hmong because they are the least likely group to choose institutional deliveries and most likely to deliver at home with family members or friends in assistance or occasionally a village health worker. Most of the explanations emerging from qualitative research are gender- or culture-based. In discussions with Hmong women, one of the explanations—that they will not allow a man to examine them—was disproved because women were willing to have a male village health worker insert an intrauterine device. In-depth interviews disclosed that many Hmong women give birth at home assisted by their husbands (UNFPA and MOH 2017).

Environment

An unhealthy environment is an underlying or nutrition-sensitive cause of childhood and maternal disease. An unsanitary physical environment has been linked to the contribution of environmental enteric dysfunction to childhood stunting; parasitic infestation and anemia; open defecation and childhood growth and development; and handwashing (figure 3.11) and childhood diseases such as diarrhea and acute respiratory infection.

Chronic and recurrent diseases that result from poor environmental hygiene can affect growth in the first two years of life. A 2014 UNICEF study in India examined the association between child stunting and household access to adequate sanitation, drinking water, and personal hygiene. The odds of stunting in children younger than 2 were significantly higher (16–39 percent) in the absence of good sanitation. There was no association with household access to an improved source of drinking water (Rah et al. 2015). Water quality is essential for disease prevention, particularly diarrheal diseases. It is also vital for personal

(and often environmental) hygiene—that is, handwashing and cleaning cooking and eating utensils. Therefore, its effect on stunting, if any, may be indirect.

The relationship between the environment and the physical development of children is an important factor in the postnatal environment. A critical feature of an unhygienic environment is open defecation and unimproved sanitation, and their association with high population density increases the likelihood of exposure of young children to enteric pathogens. The biological pathway that links the unhygienic environment and child growth is environmental enteric dysfunction, formally known as environmental enteropathy (Spears 2013).

The Kinh have the highest share (59 percent) of people using hygienic toilet facilities (flush toilet with septic tank or sewage pipes) and the lowest share (5 percent) of people without toilet facilities (table 3.2). For the other five ethnic groups, the proportion of people using hygienic toilet facilities is very low (less than 30 percent), particularly for the Hmong people, with only 3 percent using hygienic facilities and up to 79 percent without toilet facilities. The ethnic minorities live in insecure, unhygienic conditions (figure 3.11).

In part because of lack of access to basic health services, but also because of lack of use of those that are accessible, rates of diarrheal infection and parasitic infestation in the mountainous regions of Vietnam are high (Målqvist et al. 2013; Verle et al. 2003; World Bank 2015). These high rates are linked to the prevalence of open defecation, use of untreated human feces for fertilizer, a preference for raw fish and fresh uncooked salads, and lack of personal hygiene practices that could mitigate the effect of a dirty environment. This combination creates conditions that are conducive to environmental enteropathy and other recurrent and chronic diseases and subsequent development of poor growth and stunting in children younger than 2 (Ngure et al. 2014; Rah et al. 2015).

As for other causal elements of stunting described in this report such as aflatoxins, the Kinh majority was not spared parasitic infections (as noted in Verle 2003). The Kinh population was equally infected with hookworm, trichuris, and *Clonorchis*. Data were not available to determine differences in treatment with albendazole or mebendazole, both of which are available at the community level, nor was there a breakdown by ethnicity of families with latrines, which was the only factor that seemed to be associated with having fewer ascaris infections.

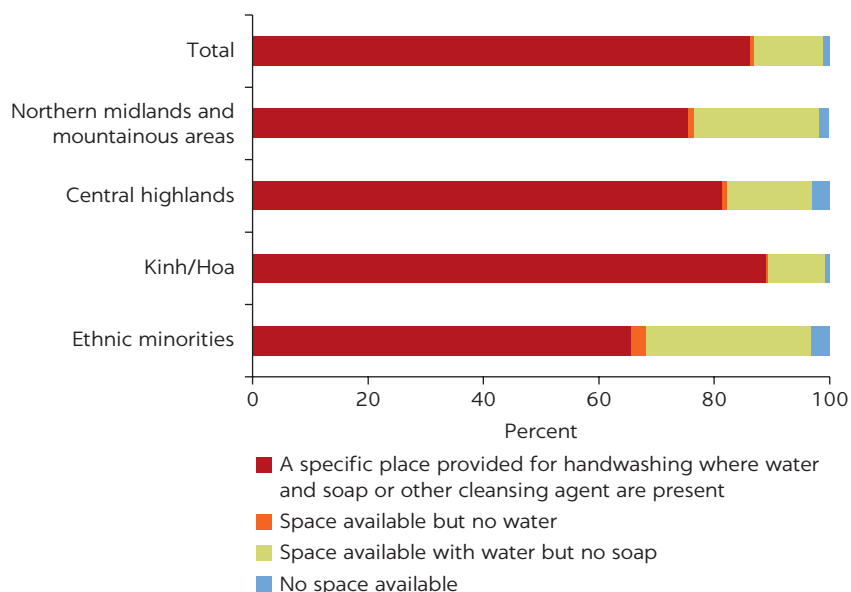
TABLE 3.2 Type of toilet facility used by ethnic group: Vietnam, 2009

Percent

ETHNIC GROUP	HYGIENIC TOILET FACILITIES	NONHYGIENIC TOILET FACILITIES	NO TOILET FACILITIES
Entire country	53	39	8
Kinh	59	36	5
Tây	21	67	12
Thai	11	75	14
Muong	15	76	8
Khmer	27	55	18
Hmong	3	27	70

Source: UNFPA 2011.

FIGURE 3.11

Handwashing conditions by region and ethnicity: Vietnam, 2014

Source: GSO and UNICEF 2015.

Vietnam Red Cross Headquarters has decided to provide initial support for mountainous provinces in the northern of Vietnam, including Ha Giang, Hoa Binh, Lao Cai, Lai Chau, Son La, Thai Nguyen, Dien Bien, in order to help affected families overcome the consequences of land erosion and flash floods as the result of the torrential and prolonged rains recently. 17 families losing their family member or having houses collapsed or swept away will receive VND 3 million each case. 28 temporary shelters have also been erected for affected communities to use before their houses are repaired or rebuilt.

ReliefWeb, “Vietnam Red Cross Society to Provide Initial Support of Nearly VND 180 Million to Northern Provinces Affected by Torrential Rains” (ReliefWeb 2017)

Climate change is another environmental factor, and Vietnam is one of five countries considered most prone to its effects (World Bank 2011). Although coastal populations are most vulnerable to changes in sea level, storm surges, and extreme weather events, the threat to those living in the mountains to drought, flash floods, mudslides, and erosion, particularly in the face of environmental degradation, is considerable.

Over the last 20 years in Vietnam, an estimated 13,000 lives have been lost and average annual damage of 1 percent of GDP has been incurred from severe weather events related to climate change (Rocklöv et al. 2014). Regardless of the source of the event, all Vietnamese feel the effects on agriculture, forestry, and fisheries, including on rice production, leading to high local and global prices on commodities.

Rising temperatures can affect environments in which the survival of pathogens and vectors are optimized, leading to increases in the incidence of some diseases, including their spread into new areas (Rozenberg and Hallegatte 2016). For example, malaria is being found in new areas—such as the high hill regions of Nepal—which is a cautionary tale for Vietnam (Dahal 2008).

Rising temperatures may also lead to reductions in nutritional intake. Mothers commented in a qualitative study from Tuyen Quang province in the northern mountains that their children ate more in the cooler autumn months because their appetites were affected by the heat and humidity of the summer, when ambient temperatures average 29°C (84°F) versus 23°C (73°F) in the autumn and average humidity is 85 percent (Huong et al. 2014).

Projections of the effect of climate change on people, particularly poor people, vary according to residence, type of work, sources of income, and access to some form of social protection. If the majority of the poor remain nonskilled agricultural workers, maintaining present levels of productivity in the face of rising temperatures will be a challenge. Poor families, who must spend more of their income on food, will feel greater pressure from rising food prices in the face of falling agricultural productivity, from gradual environmental change, or from a greater number of extreme weather events.

Basic causes of malnutrition

Poverty

In recent decades, Vietnam has made considerable progress in reducing poverty. The proportion of the population living below the national poverty line (General Statistics Office–World Bank poverty line) reached 9.8 percent in 2016, indicating that more than 43 million people had escaped poverty since 1993. A similarly strong trend is observed for people living on less than \$1.90 a day in 2011 purchasing power parity (PPP) terms; it fell to 2.2 percent in 2016. Poverty reduction has been coupled with significant improvements in shared prosperity. The average consumption level of Vietnamese in the bottom 40 percent has been growing by more than 6 percent a year since 2010.

Although poverty has fallen significantly across the country, high poverty rates persist in minority communities. In fact, poverty is concentrated among ethnic minorities, with the smaller ethnic minority groups and those living in the northern and central mountains being particularly affected (95 percent of poor people live in rural areas). Making up only 14 percent of the population, ethnic minorities accounted for 73 percent of the poor in 2016. Poverty reduction in these groups stalled between 2012 and 2014, but recent data show a significant decline of more than 13 percentage points between 2014 and 2016. Nevertheless, 44.6 percent of ethnic minorities still lived in poverty in 2016 (World Bank staff analysis of household survey data).

Underlying the concentration of poverty in poor, rural, and agricultural households is their low human capital, financial capabilities, and to some extent the unfavorable topography or limited access to land, which further limits their access to credit. In other words, the low endowments in education, financial, and natural capital of the poor are a disadvantage. Approximately 57 percent of adults in poor households have a primary education at most, and fewer than 7 percent have a postsecondary education. By contrast, one-third of adults in nonpoor households have a postsecondary education. Poor people also have limited access to financial services. Only 19 percent of adults in the poorest two quintiles and only 27 percent of rural adults held an account at a formal financial institution in 2014. In the coastal and inland delta communes, poor people have significantly less land. In both of these areas, the median amount of land cultivated by poor people is less than 20 percent of the median amount of land cultivated by nonpoor people, but most poor people reside in hilly and

mountainous areas, where the land is less productive. Hindered by limited finance, land fragmentation, and weak land security, poor people use their land suboptimally, concentrating on cereal crops rather than more profitable perennial crops. These three factors—low education and financial capabilities and the amount and topography of land—determine households’ earning potential and drive livelihood outcomes that separate the poor from the nonpoor.

Cultural differences

When ethnic minorities fail to use public services that are within reach physically and economically, there must be a reason beyond the need for better roads, lower costs, or more staff. In many instances, and particularly for the poor, health services are free under the National Health Insurance scheme, which covers about 70 percent of the population. However, some of Vietnam’s ethnic minority communities do not use government facilities because of cultural beliefs and language differences. This situation is exacerbated by the fact that health professionals generally perceive the main purpose of their communication to be information delivery rather than interpersonal interaction. For them, the effectiveness of their communication is measured by a woman’s ability to understand what they are saying, not necessarily on the relevance of the information or the way it is communicated. In addition, the audience for the health education literature that health providers (proudly) distribute does not always understand it, even though that audience values it as a document and something that a doctor gave to them. This is not always clear to the health professionals (McKinn et al. 2017).

“Sense of place” is relevant to understanding why ethnic minorities resist what may be perceived as the ongoing influence of outside actors on or interference in their way of life. It is the meanings and attachment to a setting that an individual or group holds (Tuan 1977). “Place attachment” implies an emotional bond between individuals or groups and their environment. “Meanings” are descriptive statements about a place, about what it is and what it is like—it is a more intellectual aspect of sense of place than the emotional one that comes from attachment (Masterson et al. 2017). Historically in Vietnam, violation of sense of place arose from the movement of ethnic minority groups into smaller areas through internal (or external) migration or movement into village environments that were alien to their culture and identity. Moreover, it was the selling off of once communally or ancestrally owned properties to private investors or previous attempts to reduce vertical inequity¹³ by assimilating individual families into the majority culture. In many instances, each of these factors created a sense of alienation and marginalization that may explain a reluctance to accept “outside” concepts of health care, nutrition, or childrearing, no matter how good they are and how much the government’s genuine desire to improve the quality of life of ethnic minorities drives them.

Inadequate multisectoral collaboration

Only through the collaboration of multiple sectors can Vietnam solve a problem as complex as the persistent undernutrition in its ethnic minority communities in the northern mountains and the central highlands. Multisectoral approaches are needed to raise incomes, reduce inequities, reduce maternal deaths, improve water and sanitation, and create a more nutrition-sensitive agenda (World Bank 2016). However, it is clear from interviews with key personnel in ministries and departments outside of the Ministry of Health (MOH) and with local workers in the field that many are not aware of what their role could be in combating malnutrition.

Cross-cutting challenges such as gender inequality are already bringing together ambassadors and heads of agencies from multiple sectors in the United Nations and national and international nongovernmental organizations to work with the gender equality departments of Vietnam's government institutions: the Ministry of Labor, Invalids, and Social Affairs (MOLISA), National Committee for the Advancement of Women in Vietnam, MOH, and the Vietnam Women's Union (VWU). These cross-cutting groups have achieved a common mandate—common goals that no single entity can achieve—and support from the highest possible political level to command accountability from each member. However, institutions have to be responsive to the needs of these ethnic communities for multisectorality to work.

ANALYSIS OF DETERMINANTS OF MALNUTRITION

Bivariate analysis of immediate and underlying causes of stunting

A bivariate analysis of immediate and underlying causes of stunting was derived from an analysis of National Institute of Nutrition (NIN) nutrition surveillance data and divided into characteristics of children and mothers that are statistically significantly associated with stunting (table 3.3). Of the immediate causes (inadequate food and nutrient intake; feeding, caregiving, and parenting practices; and low burden of infectious diseases), the NIN data showed a statistically significant association between the prevalence of stunting and low birthweight, vitamin A supplementation of children, and age of under 2 ($p < .0001$).¹⁴

There was less of an association between stunting and diarrheal diseases and fever as measured by whether the respondent recalled an episode in the two weeks before the survey (acute diseases are unlikely to affect height but may affect weight). Diarrheal disease frequency, which is more difficult to measure, is a more important marker.

The statistically significant association of stunting with low birthweight and with intrauterine growth restriction in general correlates with the intrauterine causes of stunting, which stem from nutritional deficiencies in pregnancy and link the child's health and nutrition with those of the mother.

Of the immediate maternal factors, poor nutritional status of the mother (height, 152 centimeters or less) and younger age (18 years or less) were strongly statistically associated with stunting ($p < .0001$). Maternal education, rural residence, and occupation as a farmer ($p < .0001$) were indirect or nutrition-sensitive causes of stunting.

In summary, because of its chronicity the prevalence of stunting implies a wider range of differences between ethnic minorities and the Kinh majority. Where differences in wasting implicate (with slight oversimplification) a household's lack of food reserves and greater vulnerability to natural and manmade disasters, stunting is intergenerational and multidimensional. As causes of the difference in stunting between ethnic minorities and the Kinh majority, the following are implicated (because each is greater in number or proportion in the ethnic minority groups): poor maternal nutrition (and social status) leading to IUGR, suboptimal infant and young child feeding, cultural beliefs and practices, food insecurity as measured by inadequate minimum dietary diversity, poor personal and environmental hygiene, poor access to essential maternal and child

TABLE 3.3 Prevalence of undernutrition in children (0–59 months) in 2013 from Vietnam nutrition surveillance data (*n* = 90,425): bivariate analysis

CHARACTERISTIC	PREVALENCE (%)	<i>p</i> VALUE
CHILD FACTORS		
Age (years)		<.0001
<2	17	
2–5	25	
Sex		<.0001
Male	23	
Female	20	
Breastfed (<i>missing</i> = 2,195)		.04
Yes	21	
No	23	
Diarrhea in last two weeks (<i>missing</i> = 521)		.001
Yes	21	
No	23	
Fever in last two weeks (<i>missing</i> = 521)		<.0001
Yes	21	
No	23	
Birthweight (grams) (<i>missing</i> = 5,112)		<.0001
<2,500	35	
≥2,500	18	
Vitamin A supplementation (<i>missing</i> = 1,812)		<.0001
Yes	23	
No	16	
MATERNAL FACTORS		
Education (<i>missing</i> = 2,092)		<.0001
None	44	
Primary	27	
Up to high school	20	
College and higher	11	
Maternal height (centimeters)		<.0001
≤152	27	
>152	16	
Residence		<.0001
Urban	14	
Rural	23	
Occupation (<i>missing</i> = 7,869)		<.0001
Farmer	30	
Salaried	14	
Small trader	14	
Housewife	16	
Age (years)		<.0001
≤18	25	
>18–30	21	
>30	21	

Source: World Bank staff analysis of NIN's 2013 National Nutrition Surveillance System data (database), Hanoi (accessed November 27, 2018), <http://chuyentrang.viendinhduong.vn/vi/so-lieu-thong-ke/do-thi-suy-dinh-duong-tre-em-duoi-5-tuoi-tren-toan-quoc-tu-1999-2017.html>.

Note: *n* = number of observations; *p* = level of significance.

health and nutrition services, overall poverty, and cultural differences. All of these encompass the immediate, underlying, and basic causes of childhood malnutrition.

This list makes clear that the causes of stunting in minority ethnic groups are multidimensional and linked to socially derived determinants of health that appear in the definition of multidimensional poverty, as well as in economic models that tend to link causal elements to monetary poverty. Economic models suggest that food and nutrition insecurity, degraded physical environments, poor health care, and poor health and nutrition education are primarily the result of inequitable distribution of wealth, leading to impoverished households that are unable to access health and nutrition services.

Gaps in determinants of undernutrition in ethnic minority groups

It is not clear what the levels of health and nutrition are for the poor members of the Kinh majority, some of whom live in the same areas as the ethnic minorities. Knowledge of their nutrition status could clarify the differences between the two populations by eliminating some variables common to both communities. It could also shed light on the lack of ethnic minority participation in the preventive and curative health services that could reduce malnutrition.

Behaviors are likely to play a critical role in improving child growth in the ethnic minority population. Therefore, it is likely that social and cultural factors influence the care, hygiene, and food consumption behaviors that affect malnutrition. Because strong enabling and inhibiting factors affect IYCF practices, particularly with regard to culture, formative research should be conducted to understand the processes at play and the best approaches to improving practices.

It was not possible to compare the effects of diseases and other causes of stunting over time by comparing MICS 2011 and 2014 databases because anthropometry was not measured in the 2014 MICS. Moreover, the available data sets were incomplete (they lacked full sets of determinants of undernutrition according to the UNICEF conceptual framework, as well as anthropometric measurements), thereby preventing complete bivariate and multivariate analyses of the determinants of childhood undernutrition in ethnic minority populations.

NOTES

1. For example, child care practices affect access to food, and inadequate access to food can make learning difficult and lead to a continuation of poor child care practices because education is associated with adequacy of child care practices (GSO/UNICEF 2015).
2. Points where many causal pathways intersect and where a single intervention could leverage change over a wider range of causes. This is a useful device for planning interventions.
3. Further research has also elucidated the association between low birthweight (LBW), stunting, and the later onset of adult noncommunicable diseases such as diabetes, coronary artery disease, and cerebrovascular disease (Barker 2007).
4. The infant formula industry spent more than \$10 million on advertising in 2009, making it one of the top five advertisers in Vietnam (Stocking 2009).
5. The food groups are (1) grains, roots, and tubers; (2) legumes and nuts; (3) dairy (milk, yogurt, and cheese); (4) meat, fish, and poultry; (5) eggs; (6) fruits and vegetables rich in vitamin A; and (7) other fruits and vegetables.
6. The Food and Agriculture Organization defines food security as existing “when all people, at all times, have the physical, social and economic access to sufficient, safe and nutritious

food to meet the dietary needs or food preferences for an active and healthy life” (FAO 2002). Food security therefore depends on the availability of nutritious food, accessibility (including affordability and acceptability), utilization, and sustainability (whether the household has enough stored food to maintain food security during a shock).

7. Toxoplasmosis is one of the infections screened for in the TORCH constellation of intra-uterine infections: Toxoplasmosis, Other (syphilis, varicella zoster, parvovirus B19), Rubella, Cytomegalovirus, and Herpes.
8. Deputy Minister of Health Nguyen Viet Tien, Consultative Workshop on Developing a National Action Plan to Eliminate Mother-to-Child Transmission of HIV, Hepatitis B, and Syphilis, organized by the Maternal and Child Health Department, Ministry of Health, and World Health Organization, Hanoi, May 22, 2018 (Viet Nam News 2019).
9. See <http://www.ifpri.org/topic/food-security>.
10. See <http://www.baolaocai.vn/xa-hoi/giai-phap-giam-thieu-tinh-trang-tao-hon-va-hon-nhan-can-huyet-thong-z5n20171109142611398.htm>.
11. Because of age grouping in most studies, the percentage of the population ages 10–19 (the actual adolescent population) is not available. See <http://vietnam.unfpa.org/en/topics/young-people's-need-sexual-and-reproductive-health>.
12. <http://vietnam.unfpa.org/en/topics/young-people's-need-sexual-and-reproductive-health>.
13. In vertical equity, the individual is viewed outside the context of his or her community. This effectively disassociates the data from any cultural roots and individualizes it so that particular characteristics of family behavior can be subsequently described but without understanding where they come from. Horizontal inequity surveys the entire community of which the household is a part. As such, it can differentiate the internal from the external causes, but it requires a deeper set of rigorous qualitative data that can lead to an understanding of the complex interactions within a culturally identifiable ethnic group and between that cultural group and another—for example, between the cultural ethnic minority and the Kinh majority.
14. The positive association between vitamin A supplementation and stunting could stem from programs—that is, more programs are implemented and staff are more apt to ensure that vitamin A is given in regions that have a high prevalence of malnutrition and poverty.

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4 Commitment, Policies, Institutional Arrangements, and Capacity for Nutrition Programming: A Systemic Approach

This study uses an ecological model to analyze and understand the multifaceted basis of Vietnam's capacity to address maternal and child malnutrition, especially in largely ethnic minority populations. In this model, the individual and the community exist within the workplace that is part of a greater organization or institution and part of an enabling (or inhibiting) environment formed by the system (Shrimpton et al. 2014).

This model is presented in figure 4.1, which depicts an adaptation of an ecological system of social analysis (Paquette and Ryan 2001). The four spheres of the framework identify the domains in which various components of the national nutrition program are nested:

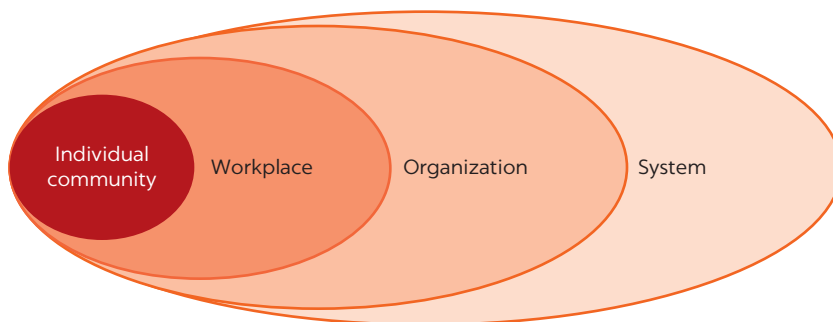
- *System domain.* Here, the government's commitment to nutrition programs is expressed through policies and strategies affecting ministries and other stakeholders involved in reducing undernutrition. It is also where budgetary decisions are made and intersectoral coordination is mandated.
- *Organizational domain.* Here, ministries and other institutions respond to policies and directives by establishing programs and projects, and the implementation of programs is designed and supported, including assessment of capacity (financial, infrastructure, and human resource).
- *Workplace domain.* Here, the programs that the organization prepares are implemented. The work environment (human, physical, and financial resources) is developed and dedicated to support of the workforce.
- *Individual and community domain.* Here, the individual in the community is assessed for the capacity to implement and monitor programs. Capacity needs, including knowledge and skills, are identified and addressed in an environment with the necessary components of support such as salaries, safety, and supportive supervision.

SYSTEM DOMAIN: POLICIES AND FUNDING

National commitment to reducing undernutrition

In Vietnam, nutrition is recognized as foundational to national development. Reducing undernutrition is one of 10 national priorities in Vietnam's

FIGURE 4.1
Diagram of ecological analysis



Source: Adapted from Bronfenbrenner (1979).

Socio-Economic Development Plan 2016–2020 (Socialist Republic of Vietnam 2016), which lays out an overarching five-year development agenda, including ambitious objectives and targets. The plan calls for reducing malnutrition (underweight) by 10 percent by 2020. Protecting people’s health has always been a concern of the government.

Since December 1992 when Vietnam joined 158 other countries in the International Congress on Nutrition in Rome, the government has committed itself to eradicating hunger and eliminating malnutrition as manifested in the first National Plan of Action for Nutrition (NPAN) 1995–2000 (GOVN 1995). NPAN assigned the relevant ministries and subnational governments responsibility for setting nutrition targets in their long-term and annual socioeconomic development plans. NPAN’s objectives have since always been mentioned in the Resolution of the Party (beginning with the Eighth Assembly in 1996 to the present) and the Resolution of the National Assembly for Socio-Economic Development. In Vietnam’s current five-year socioeconomic plan, nutrition indicators are among those that the Ministry of Planning and Investment sets and monitors. Undernutrition (underweight) reduction is also a critical social indicator in the current subnational socioeconomic development plans of Vietnam’s 58 provinces and five centrally controlled municipalities.

The most recent policy that affects nutrition is the Communist Party of Vietnam’s Resolution No. 20-NQ/TW issued October 25, 2017, at the sixth conference of the 12th Central Committee. The resolution addresses health problems, particularly stunting; the stature of the Vietnamese population; and the disparity of indicators across regions. The overall objective is “to improve both physical and mental health, stature, longevity, life quality of the Vietnamese,” primarily through nutrition interventions (Central Committee of the Communist Party of Vietnam 2017).

In January 2014, Vietnam joined the Scaling Up Nutrition (SUN) movement, which promotes the establishment of multisector, multistakeholder platforms to enable different sectors to collaborate to address malnutrition. The National Institute for Nutrition (NIN) represents the Ministry of Health (MOH) in the SUN movement. Because NIN is also responsible for implementing the National Nutrition Strategy (NNS), the SUN movement will be involved in implementation of the strategy.

On March 1, 2015, the prime minister of Vietnam passed a decree on the trading and use of nutrition products for infants as well as baby bottles and pacifiers.¹ The decree covers education, communication, and advertising

for, trading in, and use of nutrition products for infants and baby bottles in order to reduce malnutrition and promote and protect breastfeeding. It prohibits advertising and promotion of breastfeeding substitutes to babies younger than 24 months, does not permit the use of bottles and pacifiers, and defines the criteria for advertising complementary foods. The Ministry of Health was directed to guide and organize implementation of the decree.

Intersectoral policies affecting nutrition of ethnic minorities

Ministry of Agriculture and Rural Development policies

Agricultural policies developed by the Ministry of Agriculture and Rural Development (MARD) immediately after the economic reforms (Đổi Mới) of 1986 sought to increase production in order to end frequent food crises in Vietnam, encourage national food self-sufficiency by limiting the need for food imports, and reduce the income gap between rural and urban workers (MARD 2012). These goals were carried out by de-collectivization, land redistribution to farmers through the new land tenure laws, and linkage of income to production by establishing contract farming. Another development was support of privately owned enterprises as formalized in the 1992 constitution and support for domestic trade (Marzin and Michaud 2016).

Increasing productivity requires aggregation or defragmentation of land holdings to facilitate the mechanization and development of commercial farms by integrating family farms and enabling farmers to invest in nonagricultural activities. This diversification has increased the importance of nonagricultural industries such as textiles and electronics and, because of the greater value added per worker in industry than in agriculture, has increased the disparity between urban and rural workers.² It also may have a negative effect on household food security if income from cash crops does not surpass the funds required to buy quality foods for a balanced diet.

No single agricultural policy specifically addresses ethnic minorities. It is assumed that support for these households is part of agricultural policies for the general population, but the Committee for Ethnic Minority Affairs (CEMA), which has offices in each province, is in charge of supervising national development programs involving the welfare of ethnic minority populations. Nevertheless, government projects such as Programme 135 (P135)³ focus on infrastructure and public services in communes rather than identified ethnic minority households within a commune.

In addition, in June 2018 the prime minister issued Decision 712, which committed D 545 billion (\$24 million) to ending hunger by 2025 as the hallmark of the National Action Program on “Zero Hunger” (ISG and Viet Nam Standing Office on Zero Hunger 2018). The program was launched in December 2018 with a plan to develop and expand the model of linking nutrition and agriculture in the 800 poorest communes in Programme 135. Its goal is to reduce stunting to less than 20 percent nationwide and less than 25 percent in the northern mountains and central highlands (Vietnam Law and Legal Forum 2018). However, it is not a completely targeted program because it is designed to ensure enough food and nutrition to increase all people’s physical strength and stature. Nevertheless, it offers MARD an opportunity to become involved in nutrition-sensitive interventions.

Since 1980, many of the policies issued on land use have had a major effect on ethnic minority communities. Some of them are considered breakthroughs in land use law and policy, including implementation of a policy on farmland

contracting (allocating farmland to households), as well as promulgation of the Land Law in 1993, the Law on Forest Protection and Development in 2004, and the Revised Land Law in 2013. Some of the policies on land use, especially the policy on the five rights of land users, appear to have improved the conditions of ethnic minorities, increasing agricultural productivity in many of the areas in which they live. As a result of these policies, ethnic minority people have shifted from nomadic farming to settled farming; they have reportedly been empowered to protect and develop forests; different ethnic minorities have begun to share the same living places; trading and technical activities have been promoted; and gender justice has been improved (Tinh 2016; Tuan 2003).

Ministry of Trade policies

On January 28, 2016, the prime minister of Vietnam signed a decree intended to improve people's vitamin and mineral intake.⁴ Decree 09/2016/ND-CP on food fortification, issued March 15, 2016, regulates four micronutrients used in the fortification of foods that should meet national technical standards and food safety. The foods selected by the Ministry of Health for mandatory fortification—salt, wheat flour, and vegetable oil—are staples eaten by all Vietnamese, including vulnerable populations.

Salt and vegetable oil are used by all households for cooking. The decree requires the use of iodized salt in the production of processed foods, including powder seasoning, fish sauce, and fermented fish. Wheat flour is consumed in Vietnam largely in the form of instant noodles and bread. Although bread is not consumed in significant quantity by vulnerable populations, instant noodles is a common convenience food in poor communities. If properly implemented and enforced, Decree 09 is thus expected to significantly increase iodine, iron, zinc, and vitamin A intake among school-age children, adolescents, and adults.

Fortification is highly cost-effective and has been more successful at preventing micronutrient deficiencies in the general population (such as reproductive-age women) than other micronutrient interventions such as voluntary supplementation or dietary diversification. Mandatory fortification of complementary foods supplements other micronutrient interventions that target high-risk populations such as young children (for example, vitamin A capsules) and pregnant women (such as iron and folic acid supplements). However, this decree has not yet been implemented. Moreover, it is likely that vulnerable populations in the northern mountain and central highland regions would have limited access to these fortified foods.

Ministry of Culture, Sports, and Tourism policies

On April 11, 2011, the Ministry of Culture, Sports, and Tourism (MCST) proposed and gained approval from the government under Decision 641/QD-TTg for a master plan for 2011–30 to address the physical development and height of the Vietnamese people. The general goal was that “for 2020 that males age 18 years should reach an average height of 167 cm and females 156 cm; by 2030 males age 18 years on average should reach 168.5 cm, and females 157.5 cm” (MOH and Health Partnership Group 2011). This goal was to be achieved by improving the quality of reproductive health care, improving maternal and newborn health, and reducing malnutrition in children under 5 years old.

Part of the MCST program was related to education. The School Nutritional Program to Improve Nutritional Status in Order to Enhance the Stature of

Preschool and Elementary Preschool Students Up to 2020 was approved in Decision 1340/QĐ-TTg on July 8, 2016. The goal of the program is “to improve the nutritional status of preschool and primary students through the daily feeding of children with milk to reduce the rate of malnutrition and increase the stature and physical strength of Vietnamese children, contributing to the development of human resources in the future” (PMO 2016). Daily milk consumption is promoted through policy development, education and communication, and technical assistance. The Ministry of Health manages the program in cooperation with other relevant ministries. Resources for the program are being mobilized from the private sector, international and domestic aid, family and community contributions, and local government support.

Ministry of Education and Training (and related) policies

The Ministry of Education and Training (MOET) issued Circular 17/2009/TT-BGDĐT on July 25, 2009, for Vietnam’s preschool education program, with clear regulations on age-appropriate diets for preschool-age children. Circular 28/2016/TT-BGDĐT, released on December 30, 2016, amended and added to the program. The program has clear regulations on living conditions, as well as recommendations for an age-appropriate diet that includes energy demand and macronutrient requirements for preschool-age children.

The government of Vietnam recognizes the importance of early childhood care and education (ECCE) and has made it a core element of its agenda for education sector development. The Education Development Strategy 2011–2020 put forward by the prime minister and approved in 2012 promotes ECCE as one of its objectives: to achieve universal ECCE for 5-year-old children by 2015⁵ and to have by 2020 “at least 30 percent of children at creche age and 80 percent of children at kindergarten age . . . taken care of and educated at preschools” (PMO 2012). In addition, it calls for reducing the share of malnourished children in preschools to less than 10 percent. MOET has endorsed the preschool education program since 2009 and revised it in 2016. In its annual instruction to every school, it emphasizes the importance of good meal and care quality in kindergarten and highlights malnutrition reduction as a target of preschool education.

On January 16, 2017, MOET issued Decision 196/QĐ-BGDĐT on the use of browsing software to build menu nutritional balance. The software, developed in collaboration with the Japanese food manufacturer Ajinomoto Vietnam Co., was to be used in primary schools across the country. MOET subsequently issued Official Letter 576/BGDĐT-CTHSSV to guide departments of education and training in how to deploy the software in primary schools so that they could plan and prepare nutritionally balanced menus for school lunches in the absence of trained dietitians. More than 30 provinces and cities have deployed the software locally.

On April 19, 2011, the prime minister issued Decision 579/QĐ-TTg, approving the Vietnam Human Resources Development Strategy 2011–2020 for the physical improvement of manpower in the country. The strategy is aimed at lengthening life expectancy, increasing the average height of youth, and reducing malnutrition. The strategy focuses on “the school nutrition project that combines with physical education and physical and sport activities in schools” (PMO 2011).

Keeping children in school through the upper secondary level has been shown to have a powerful effect on low birthweight (LBW) rates and stunting because it prevents adolescent pregnancy. Vietnam’s Socio-Economic Development Strategy 2011–2020 also considers education development to be

the nation's leading policy and calls for universal primary and secondary education of increasingly higher quality, particularly in mountainous and ethnic minority areas (GOVN 2011). Currently, education is mandatory up to grade 9. Primary school participation and net attendance ratio for boys (98 percent) and girls (97.7 percent) is virtually equal, with 99.4 percent attending school until the last primary grade.⁶ Most public resources for early childhood and general education are drawn from the state budget; state support for education in Vietnam increased from 12.1 percent of the national budget earmarked for education in 2009 to 15.7 percent in 2014. Only primary education is free (since 1989). Although preschool (5-year-olds) and lower secondary education (grades 6–9) are universal, tuition is required. Nevertheless, children at ethnic minority boarding and semiboarding schools and children from very small ethnic minority groups, remote areas, or poor households are exempted, or the fees are reduced, and lunch subsidies are offered (UNICEF, MOET, and UNESCO Institute for Statistics 2018).

Social, welfare, and poverty reduction policies

Other sectoral policies targeting ethnic minority households and communities may have an indirect effect (nutrition-sensitive) on poverty reduction, agricultural practices, and food security. For example, the National Target Program for New Rural Development (NTP-NRD) supports agricultural production, health, and water sanitation investments that indirectly affect nutrition by raising incomes and improving the hygiene and sanitary environment. The National Target Program for Sustainable Poverty Reduction (NTP-SPR) not only includes Programme 135, but also includes a broader program that combines support of income-generating activities and social support programs targeting the poor. In terms of gross domestic product (GDP) growth in mountainous provinces, these programs have significantly reduced poverty communewide in ethnic minority areas (Vietnamese Academy of Social Sciences 2007), although within those communes it appears that non-Kinh ethnic groups have not fared as well (Singhai and Beck 2017).

Labor Law 10/2012/QH13⁷ stipulates that women shall be entitled to maternity leave of six months, beginning up to two months before delivery. The law also has special regulations that allow pregnant and lactating women to avoid exposure to heavy labor and hazardous jobs and guarantee job security for pregnant women, including after maternity leave.

The Joint Program of Action of the Vietnam General Confederation of Labor to implement the National Nutrition Strategy (NNS) supports breastfeeding for female workers, especially in industrialized areas where many female workers are concentrated. Vietnam's government also created a supportive environment for breastfeeding by banning advertising of breast milk substitutes marketed for children younger than 24 months, as recommended in the World Health Organization (WHO) International Code of Marketing of Breastmilk Substitutes. Many employers have set up lactation rooms.

The Law on Social Insurance 58/2014/QH13 defines the right of pregnant employees to take one day's leave for each of five prenatal examinations. Those who live far from a health facility, have evidence of pathology, or are undergoing an abnormal pregnancy are entitled to a two-day leave for each prenatal examination. Men paying social insurance premiums are entitled to five working days of paternity leave, seven days if their wife has a caesarian section or delivers a

child before 32 weeks of gestation, and 10–14 days if their wife delivers twins with or without a surgical procedure. A parent not wanting to take leave is eligible, for each child, for a lump sum payment equal to twice the parent’s basic salary for the month in which their child is born (NAV 2014). Women undergoing a contraception procedure are also entitled to leave when prescribed by a competent health establishment: seven days for an intrauterine device and 15 days for sterilization.

Needy families receive social protection through various mechanisms such as social insurance or health insurance for community-based and institutional care. According to Decree 136/2013/ND-CP (January 2014), these mechanisms include exemption from tuition and subsidies for school materials and school lunches (UNICEF, MOET, and UNESCO Institute for Statistics 2018). School meal programs may have their maximum effect on families as social transfer programs, offsetting as much as 10 percent of household expenditure for one child in school and contributing to enhanced enrollment in some cases. However, reaching the poorest children (who often have low enrollment rates) is a challenge, although Vietnam’s universal education up to grade 9 could help solve that problem (Bundy et al. 2009).

Water supply, sanitation, and hygiene

The prime minister’s 2000 Decision 104/QĐ-TTg ratifies a national strategy to supply safe water and rural sanitation by 2020, with the objective that “all rural populations will use national standardized water with at least 60 liters per person per day and a standard latrine and will practice good personal hygiene and have good sanitation” (PMO 2000). In recognition of the multisectorality of this decision, the government assigned the Ministry of Agriculture and Rural Development the prime responsibility for coordinating with the Ministries of Health; Science, Technology, and Environment; Education and Training; Construction; Planning and Investment; Finance; and other concerned ministries, as well as with the People’s Committees of the provinces. A national target program on water, sanitation, and hygiene (WASH) for the period 2012–15 was also implemented by MARD, giving priority to poor households and disadvantaged and ethnic minority areas. After 2015, all target programs on WASH were integrated into the NTP-NRD, as noted in Article 10 of Circular 05/2017/TT-BNNPTNT (2017) on guidelines on implementation of the NTP-NRD for 2016–20.

Policies and programs for ethnic minorities

In addition to nutrition-sensitive policies in critical sectors and ministries targeting the whole population, the government has formulated nutrition-sensitive policies specifically targeting ethnic minority populations. After Decree 05/2011/ND on ethnic minority affairs was released, the government approved the National Strategy on Ethnic Minority Affairs and the Plan of Action Toward 2020, which includes nutrition-sensitive objectives on education, capacity building, poverty reduction, infrastructure development, sociocultural development (including health care), security, and the environment. The government assigned CEMA the job of integrating these objectives in local and national five-year and annual socioeconomic development plans. The northwestern mountain, central highland, and southwestern regions will receive special attention. Many programs and projects have been proposed in the plan of action, but the one mentioned earlier from

MCST, in cooperation with CEMA and MOH, and directly related to nutrition (improvement of physical strength and stature of ethnic people for 2015–20), was never developed as a stand-alone program. In 2016 the government issued Resolution 52/NQ-CP, “Accelerating the Development of Human Resources of Ethnic Minorities from 2016 to 2020 with Orientation to 2030,” which included a reduction in stunting as one of its indicators (GOVN 2016).

Earlier, the government had asked the Ministry of Planning and Investment to allocate money for implementation of the local annual socioeconomic development plans developed to implement the National Strategy on Ethnic Minority Affairs and the Plan of Action Toward 2020 in midterm and annual plans following the budgetary decentralization of the state budget laws. Decision 1557/QĐ-TTg of September 10, 2015, “Approving Some Indicators for the Achievement of the Millennium Development Goals for Ethnic Minorities Linked to the Post-2015 Sustainable Development Goals” also has nutrition-specific and nutrition-sensitive indicators—for example, poverty reduction, child underweight reduction, pregnancy care, and water supply and sanitation (PMO 2015).

Budgetary allocations

Government health spending is high in Vietnam, contributing to high total health spending as a share of GDP.⁸ The government is committed to keeping the annual rate of increase in its health spending higher than the rate of increase of the general government budget (National Assembly Resolution 18/2008/NQ-QH12). As a result, health spending grew from 8.1 percent of general government expenditures in 2008 to 8.9 percent in 2016. As a share of general government expenditures, domestic government spending on health in Vietnam is higher than in any other low- to middle-income country in the region except China and Thailand. Combined with the growing out-of-pocket health spending, the rising public spending means that overall health spending has also increased steeply; per capita health expenditures more than tripled from 2000 to 2016, from \$98 to \$356, purchasing power parity (PPP)–adjusted. As a share of GDP, total health expenditures (capital and current) rose from 5.4 percent to 4.9 percent over the same period. This share is higher than in all other low- to middle-income countries in the region except Cambodia and Nepal.

Out-of-pocket health spending has been rising, but growing incomes and the expansion of health insurance coverage have mitigated the financial effect on households. From 2000 to 2016, real per capita out-of-pocket health spending tripled, from \$37 to \$159 in PPP terms, but as a share of the current health expenditure out-of-pocket spending also increased from 37 percent to 45 percent. GDP per capita rose almost as rapidly as out-of-pocket health spending, increasing 2.3 times from 2000 to 2016, with the result that out-of-pocket spending as a share of GDP increased from 1.8 percent in 1995 to 2.5 percent in 2016.⁹ Health insurance coverage has also grown rapidly, from 13.4 percent in 2000 (MOH 2007) to 87 percent by 2017 (MOH and Health Partnership Group 2017). A series of legal decrees have called for fully subsidizing the health insurance coverage of the poor (2002), children (2006), and other vulnerable or meritorious groups (such as social assistance beneficiaries or people who had participated in the revolution), and provincial decisions have led to partially or fully subsidizing the near-poor. Consequently, financial protection from health spending has been improving. The incidence of catastrophic health spending declined from 20.2 percent in 1992 to 9.5 percent in 2016 (when measured with a 10 percent

threshold defined in terms of total household spending), whereas impoverishment from health spending fell from 2.3 percent to 1.1 percent when using the \$3.20 per day poverty line and from 4.6 percent to 0.31 percent when using the \$1.90 per day poverty line (World Bank, forthcoming).

The prime minister's 2017 Decision 1125/QĐ-TTg approving the Target Program on Health and Population 2016–2020 gives details on the goals for child nutrition in the new environment of combined health (including nutrition) and population programs, but responsibility and resources are devolved to the provincial level. The goals are to reduce child malnutrition (reducing underweight to less than 10 percent) and stunting (to less than 21 percent) and to reduce micronutrient deficiencies in pregnant and childbearing-age women and children younger than 5. The decision outlines actions to be funded, including vitamin A campaigns; providing pregnant and breastfeeding women and malnourished children younger than 5, particularly from poor households, with emergency supplies of nutrition products; training and professional supervision on improvement of child nutrition; guidance for implementing techniques for processing food and providing nutrition care for the population that is malnourished (under- or overweight); and development of models for the prevention and control of malnutrition specific to each region.

The budget is not included in the decision paper, nor is it specified in the provincial plans of action¹⁰ for nutrition. The plans for nutrition interventions in the provinces include a detailed list of the difficulties and challenges that the provinces face—for example, uneven distribution of malnutrition between rural and urban communities, influence of energy and micronutrient malnutrition on development of height as adults, the growing double burden of overnutrition with undernutrition, and the inadequacies of school nutrition in meeting energy and nutrient requirements (Binh 2018). Sources of funding are listed as state budget sources in localities, nonbusiness funding sources to be provided by the government, funding from target programs on health population granted by MOH, communities, and domestic and international organizations.

The mobilization of local resources for implementation of the National Nutrition Strategy has been constrained. Of the seven projects and programs that the NNS identified, only one (for maternal and child malnutrition control) has been officially funded through the National Target Program.¹¹ Even with this small investment (D140 billion annually from 2011 to 2013 for the entire country), the program has been cut back by two-thirds since 2014, and the budget for 2017 and 2018 was D50 billion (\$2.2 million), mostly for activities at the central level, with instructions that local governments should invest in nutrition interventions from their own budgets.

No mechanism is in place to track investments from other sources, such as local governments and international aid. It is unlikely that local governments will make any contributions in ethnic minority provinces because spending in these provinces depends on the state budget.¹² Meanwhile, funding from international sources has not been coordinated and managed effectively, and implementation is in the form of pilot projects in terms of geographic area and duration, none of which have been expanded. An example is the Joint Program on Integrated Nutrition and Food Security Strategies for Children and Vulnerable Groups in Viet Nam, which the Food and Agriculture Organization (FAO) coordinated along with UNICEF and WHO. A two-year project (2015–17) in the One UN initiative, it targeted the provinces of Lao Cai and Ninh Thuan. After a

promising start, it was not expanded, although it did advance the concept of intersectoral collaboration (Daponte 2017).

The government of Vietnam has given priority to child health through free health insurance for children younger than 6 (Health Insurance Law), but the insurance scheme does not include any specific nutrition interventions. NPAN proposes developing a “health insurance policy to cover counseling and rehabilitation services for children with severe acute malnutrition in the community and hospitals” in addition to “adding legislation on health insurance” to cover expenses related to acute malnutrition. It mentions health insurance as a source of funding for the recommendations of the action plan (GOVN 2018).

An earlier MOH directive (39/TT-BYT, October 18, 2017)¹³ assigned nutrition interventions to the basic health package for primary health care, preventive health, and health promotion. The budget for these interventions is to be taken from the health target programs, social protection programs, local budgets, out-of-pocket funds, and social mobilization. However, the state budget for preventive health care is less than 20 percent of overall health spending and has not reached the target of the minimum 30 percent to be spent on preventive health, as mandated by the National Assembly resolution in 2008.

ORGANIZATIONAL DOMAIN: STRATEGIES, STRUCTURE, AND CAPACITY

Strategic planning

The National Nutrition Strategies for 2001–10 and 2011–20 have been formulated since the first NPAN, with the directive that nutrition activities involve multiple sectors under the guidance and leadership of the party and government at all levels (GOVN 2012). The most recent NNS prioritizes poor, disadvantaged areas and ethnic minority groups, mothers, and small children. Each NNS includes a five-year NPAN and subnational plan of action. The most recently concluded NPAN was for 2012–15. From 2015 to 2017, no valid NPAN was in place because of institutional and structural challenges, including lack of a committed budget for implementation of a plan, but in January 2018 MOH ratified a three-year NPAN (2018–20) to fill the gap to the end of the current NNS.

On February 22, 2012, the prime minister approved a new NNS for 2011–20 with the objective of continuing “to improve the diet of Vietnamese people, in terms of quantity and quality” (GOVN 2012). The NNS focused on the nutrition (under- and overnutrition) of mothers and children, improvements in micronutrient status, control of risk factors leading to adult-onset noncommunicable diseases, and reinforcement of the capacity and effectiveness of the network of nutrition services in the community and in health care facilities. To implement the strategy, MOH approved the NPAN to 2020 under Decision 1962/QĐ-BYT on June 6, 2013, as a follow-on to the strategy for 2011–15. The achievements of MOH in reducing child malnutrition were noted, and Vietnam was recognized for its overall reduction in child malnutrition of 1.8 percent, close to the reduction of 2 percent a year set out in the Millennium Development Goals, although the achievement was not equal in all parts of the country. Socioeconomic inequalities affecting ethnic minority groups had led to higher malnutrition rates in these groups in the northern midlands and mountains, and these differences had increased in Vietnam in recent years (Van Minh et al. 2016).

The NNS identifies MOH as the lead agency for implementation of the NPANs and the National Institute of Nutrition as the focal department. Other sectors such as agriculture, education, labor, planning and investment, finance, trade, and culture are assigned specific tasks according to their mandates, but no action plans or focal points are identified. In addition, because the nutrition interventions are integrated into the functional activities of entities, it is difficult to monitor their progress and investments.

For 2001 to 2010, a national steering committee was established for the NNS at the central level and chaired by the Minister of Health, with subnational steering committees created at the provincial and communal level. However, since 2010 this committee has no longer existed at the national level, and local committees were integrated into the Board for People's Health Protection at the provincial and communal level to reduce the administrative burden of too many steering committees. The current NNS prioritizes poor and disadvantaged areas and areas with ethnic minorities and emphasizes supportive policies, intervention programs, and nutrition capacity building for people living in disadvantaged areas.

At the national level, the institutional set-up for coordination is weak, although tasks are assigned to each ministry. MOH is charged with managing the NNS through coordination, direction supervision, and monitoring and evaluation. It is required to report periodically on progress and operational results. Although other relevant ministries, sectors, and organizations are supposed to submit annual reports to MOH on their progress and operational results in achieving sector-specific NNS objectives, this has failed to happen.

National target programs

A rural development strategy

Although it is difficult to list all of Vietnam's programs for socioeconomic development, the Institute of Social Sciences has identified more than 40 targeted programs and "big projects" for the development of ethnic minorities by 2010 (Tinh 2016). These include specific policies for poverty reduction, land use, investment, capacity development of public officials, education and training, health care, culture, ethnic minority regions, and particular ethnic minorities. From 2011 to 2015, the government sought to address the emerging social challenges identified in the five-year socioeconomic development plan of the National Assembly and to focus its resources by reducing the number of programs and projects to 16 National Target Programs. This move allowed prioritization of the following social challenges: poverty reduction, education and training, population and family planning, labor and work, health protection care and promotion, culture, and information. By 2016, although the NTPs had achieved some positive results, inequities remained, their stability was fragile, sustainability was difficult because resources were spread among so many projects, and the monitoring demands were excessive given the available capacity. Even where positive results were achieved, the challenge of maintaining results proved too difficult.

For 2016 to 2020, the 16 NTPs were restructured into the New Rural Development and Sustainable Policy Reduction programs. The NTPs that had completed their objectives were closed; others with routine sector-specific functions were moved to the relevant sectors; those related to the new NTPs were consolidated within those national programs; and the remainder became

sector-targeted programs. Of the latter, one contains nutrition-specific interventions (MOH Nutrition Improvement Project in Health and Population) and one has nutrition-sensitive interventions (MOET Education for Mountainous, Ethnic Minority and Disadvantaged Areas).

National Target Program for New Rural Development (MARD)

The problem of persistent inequity led to a reevaluation of agricultural policy, leaning toward a rural development approach—that is, shifting to bottom-up planning and people-oriented development to raise farmers’ incomes. The result was the National Target Program for New Rural Development, a multisectoral approach to rural development established in 2007 that went beyond relying on classic agricultural objectives for community welfare. The program—implemented under the Ministry of Agriculture and Rural Development—focuses on the economic, social, and environmental aspects of promoting rural development. It complements the Agriculture Restructuring Plan adopted in 2013 and renewed in 2017 by creating a foundation for farm and nonfarm activities in rural areas. The current phase of the NTP-NRD (2016–20) has four ambitious objectives: (1) 50 percent of communes to meet NRD standards (achieve 15 of the 19 preset criteria) and each province and each city under the central authority to have at least one district meeting NRD standards (all 19 criteria); (2) communes, on average, to meet 15 of 19 NRD criteria and no commune to meet fewer than five criteria; (3) basic production and quality of life requirements to be achieved for rural citizens in areas such as transportation, power and domestic water supply, schools, and health stations; and (4) income levels to rise by at least 1.8 times the levels in 2015. The program encompasses 11 activity groups linked to 19 economic and social criteria related to poverty, education, health, transport, water supply, irrigation, jobs, agricultural production, markets, culture, energy, environment, communication, and security.

Although nationally targeted multisectoral approaches have introduced a holistic view of rural poverty and poverty reduction, nutrition as a cause and an effect of poverty is not evident in the strategies. Indeed, it is not clear where in this strategic approach persistent challenges such as dietary diversity, inadequate diet, and stunting prevention fit. Nor is it clear whether stunting—or other forms of chronic malnutrition associated with the development of costly non-communicable diseases—is viewed as having a significant effect on personal and national development.

National Target Program for Sustainable Poverty Reduction (MOLISA)

The Ministry of Labor, Invalids, and Social Affairs (MOLISA) proposed and manages the National Target Program for Sustainable Poverty Reduction. NTP-SPR supports through five subprograms infrastructure, jobs, basic services (health, education, housing, tap water, hygiene, and access to information), and capacity building for the country’s 94 poorest districts and 310 communes in coastal areas. It also includes Programme 135, which supports the 2,240 poorest communes and the 337 poorest villages in ethnic minority and mountainous areas. The current phase of NTP-SPR (2016–20) has four ambitious objectives: (1) lower poverty by an average of 1.5 percent per year; (2) improve livelihoods and the quality of life of the poor by increasing the per capita income of poor households by 1.5 times from 2015 to 2020; (3) implement poverty reduction mechanisms and policies in a consistent and effective manner to improve living conditions and enhance access to basic social services for the poor; and (4) invest

in the infrastructure of poor districts, communes, and villages with special difficulties following NTP-NRD criteria.

Because the vulnerability of ethnic minority households to the shocks produced by climate change can push near-poor people into poverty, the government believes resilience is necessary to support its poverty reduction strategies. There is growing awareness that, as the inequity gap widens, the vulnerability of ethnic minorities to various climate-related shocks increases. Poor and near-poor households often respond to these shocks by reducing spending on health care, selling assets (including food), and taking children out of school—all of which affect the nutrition-sensitive causes of stunting and malnutrition. Consequently, the government’s goal is to earmark a portion of the social affairs budget for strategies to mitigate the effects of these shocks (Marzin and Michaud 2016).

In the present phase of NTP-SPR (2016–20), the objectives do not refer to nutrition, although food support is featured as social assistance to households on the MOLISA poverty list. However, only 5.2 percent of households on the list (19.1 percent of ethnic minority households) receive this assistance. As demonstrated in the earlier causal analysis, food is only a small part of the stunting problem. Access to subsidies and support in the other categories of assistance provided by NTP-SPR that are nutrition-sensitive may have a greater effect on the reduction of chronic malnutrition. It is also expected that, with multidimensional measures of deprivation and income poverty expanding the definition of poverty, more needy households will be targeted (Kozel 2014).

MOET nutrition initiatives

The early childhood care and education program is important because of its significance for early childhood nutrition. ECCE programs provide venues for nurturing, caring, and learning services for new mothers and young children from ages 3 to 59 months, which include the postnatal component of the 1,000 days strategy from conception to age 2. In the Vietnamese system, the ECCE crèche program covers children ages 3 months to 3 years, and kindergarten covers those ages 3–5 years (UNESCO 2006). Unfortunately, the description of the ECCE objectives for the crèches does not refer to nutrition (such as breastfeeding support) or counseling for women from enrollment to the child’s second birthday.¹⁴ The MOET Department of Early Childhood Education shares oversight responsibility with the Ministry of Health; the Committee for Population, Family and Children; and the Vietnam Women’s Union (VWU). All four entities have expressed an interest in focusing on children younger than 3 for whom there are few other good-quality programs. In discussions with Dr. Huyen, the head of preschool education at MOET, it was evident that, although the standard was from 3 months to 5 years, MOET does not feel it has the capacity to reach out to children or infants younger than 3 years.¹⁵

Completion of secondary education by girls is known to delay marriage and, as a consequence, prevent early pregnancy (Gennari 2013). The high rate of adolescent pregnancies in ethnic minority groups is correlated with dropping out of school at an early age and lack of gainful employment opportunities for adolescent girls. It is also correlated with intimate partner violence (Hong Le et al. 2014). As mentioned in chapter 3, distance and culture affect school enrollment in ethnic minority populations. In addition, school meal programs could serve as incentives to keep children in school.

Boarding schools for ethnic minority children

The government establishes and funds boarding schools for ethnic minority children living in difficult-to-reach areas. Eligible students who have a “travel challenge” and cannot go to and return from school in one day can stay at school during the week.¹⁶ The boarding school system has contributed significantly to the higher enrollment of school-age children, lower school dropout rates, better quality of education, and universal primary and secondary education in areas with socioeconomic difficulties. It helps create local human resources for ethnic minority and mountainous areas for sustainable development (MOET 2016).

In school year 2010–11, 127 boarding schools with 13,230 students (average, 100 students per school) were operating in two provinces. In 2015–16, 28 provinces had 979 boarding schools serving 145,998 students, but still not enough needed for all ethnic minority students. Meanwhile, the system has faced difficulties, including an infrastructure that does not meet the educational and care needs of boarding students. The government has issued a plan of action to reinforce and develop the boarding school system during the second phase of the initiative (2016–20) to provide boarding schools for ethnic minority children living in difficult-to-reach areas.¹⁷

In 2013 the government began to provide vulnerable groups with a cash subsidy for lunches for children under 5 in kindergarten (D 120,000 per month for nine months).¹⁸ There are three eligibility criteria: (1) parents of child live in boundary, high mountain, island, or extremely difficult communes (as defined by the government); (2) child is an orphan without any support or handicapped with economic difficulty; or (3) child is from a poor household (according to government standards). The subsidy is provided in cash twice a year to caregivers or directly to the kindergarten to cover the cost of meals (based on actual days) in preschool. Either way, it is not possible to cover the full cost of meals for these children. If the money is given to families, they often use it for other purposes, and if it is paid directly to the school, it covers only 10 days per month (the average meal costs D 12,000 per day per child in rural areas—D 10,000 for lunch, D 2,000 for snack).

National coordination mechanisms for nutrition (NNS/SUN)

The convening body for nutrition in Vietnam is the National Institute of Nutrition within the Ministry of Health. It is responsible for research, training, and implementation of activities in nutrition, food sciences, and clinical nutrition. The roles and responsibilities of each line ministry have been well defined. NIN reports directly to the minister of health, and it has a secretariat for implementation of the National Nutrition Strategy.

The Scaling Up Nutrition multistakeholder platform is the Vietnam Nutrition Cluster Group. Every six weeks, participants from various ministries (health, agriculture, social affairs, and disaster risk management), institutes, universities, UN agencies (UNICEF, WHO, and FAO), nongovernmental organizations (NGOs), donors, foundations, and global initiatives convene to work on developing a set of objectives and priorities. NIN and UNICEF cochair these meetings. The NIN director is also the SUN government focal point.

The health sector has decentralized coordination structures in the 63 provinces and municipalities. Recent efforts include reaching out to education, agriculture, and social affairs ministries to involve them in the nutrition agenda.

According to the 2017–25 NPAN, the government wants to reestablish a national nutrition steering committee. It recognizes that accountability to authority at the highest level is critical to coordination and multisector collaboration.

The standing body for intersectoral collaboration is situated in the Ministry of Health. Following government directives on decentralization, it coordinates intersectoral inputs to the country's nutrition problems. As the SUN and NNS focal point, NIN finds it difficult to track nutrition work in other ministries (progress and investment) so it can report to SUN and the upcoming NNS review. The Vietnam Nutrition Cluster Group brings together other sectors for coordinated action.

Despite the structure outlined in NPAN, which includes formation of a nutrition steering committee at all levels, the absence of an effective coordination mechanism makes intersectoral collaboration challenging in the present environment in which the priority is to simplify a cumbersome administrative system. Introduction of the concepts practiced in other countries, along with an extensive plan to strengthen capacity in all parts of the system, may offer the government choices that would satisfy the intentions of the new NPAN.

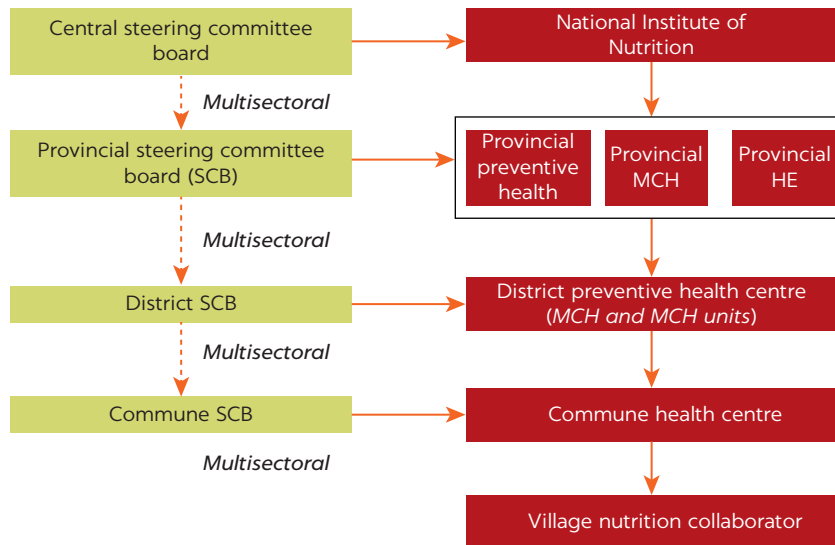
Currently, the most relevant committee for health and nutrition is the National Multisectoral Steering Committee on Food Hygiene and Safety. It investigates research questions and brings proposals to the prime minister on policies, mechanisms, and solutions for government management of food hygiene and safety. It also assists the prime minister by guiding and coordinating the relevant ministries, localities, and agencies to address multisectoral challenges in food safety and to monitor and report on implementation of the relevant programs.

WORKPLACE DOMAIN: JOB DESCRIPTIONS, CAPACITY, DISTRIBUTION, AND DATA MONITORING AND EVALUATION

Job descriptions and capacity needs

To manage and implement nutrition activities within the health and related sectors, Vietnam has generally hired medical doctors or individuals with a biomedical background but with little undergraduate or postgraduate training in nutrition (such as a master's degree or doctorate in nutrition). Until recently, Vietnam did not offer any specialized training for dietitians or public health nutritionists. However, Hanoi Medical University has now begun to offer a bachelor's degree in nutrition that includes dietetics, clinical nutrition, public health nutrition, and food safety. The first class of 50 students graduated in 2013. By 2018, five more medical universities were offering this area of study. Nevertheless, the only formal preservice training for nutritionists is the newly created bachelor's degree in nutrition (Phuong and Huy 2017).

Within the health system, personnel are working directly on nutrition from the central to the communal level (figure 4.2): at the central level at NIN and several departments at MOH and at the provincial level at the Department of Health, Center for Preventive Health, Center for Reproductive Health, and Center for Health Education. No job descriptions are available for each of these levels. People in charge of nutrition (nutrition focal points) work in areas related to nutrition within the health system from the central to the local level (vertical) or across sectors within the same administrative level (horizontal). Figure 4.2 shows the reporting and supervisory relationships of these personnel.

FIGURE 4.2**Implementation network for prevention and control of child malnutrition**

Source: National Institute of Nutrition, 2015. Used with permission; further permission required for reuse.
 Note: HE = health education; MCH = maternal and child health.

The Center for Preventive Health and Center for Reproductive Health are responsible for most nutrition activities. The former implements vitamin A supplementation, surveillance, and noncommunicable disease prevention, and the latter implements community nutrition-specific interventions. The Center for Health Education is involved in nutrition education, and the Department of Health coordinates all health- and nutrition-related activities. Competencies for staff working in nutrition in these centers should, however, be defined.

A movement is afoot to merge these centers into provincial centers for disease control. More than 40 provinces (out of 58) have plans to do so, but fewer than 15 provinces have actually merged and operationalized these centers.¹² Where they have merged, a department of nutrition encompasses all nutrition activities for the province. MOH called for the process to be completed by 2019.

Currently, staff in the new departments of nutrition have not received sufficient training on public health nutrition or even basic nutrition. This training will be needed for new staff or as a refresher for longer-serving staff, regardless of their previous experience. New information about public nutrition has been generated so rapidly that those trained more than 15 years ago will find their knowledge in many areas outdated. One of the objectives of the National Health Strategy 2011–2020 on capacity building is to have 100 percent of staff at the provincial level trained in nutrition by 2020. Some short training has occurred, but formal academic training has been offered to only a few.

In each commune, a network of village health workers with at least three months of training in community health (although not specifically on public health nutrition) is assigned to work as nutrition collaborators. Each village health worker is responsible on average for approximately 50 households with children under 5 years old. For their work in primary health care and health

promotion, village health workers receive 30 percent of the basic salary of government staff in normal regions and 50 percent in disadvantaged regions.

Nutrition surveillance

The government conducts an annual exercise to monitor implementation of nutrition policies. The National Nutrition Surveillance System (NNS) within the National Nutrition Program of the NIN tracks the implementation process of the NNS. Using a cluster sampling method, it is designed to detect changes in the prevalence of underweight in children under 5 years. To maintain seasonal consistency and interannum comparability, the survey is administered each year at the same time (June–August) by local health staff, supervised by the provincial preventive medicine centers. A general nutrition survey is administered every 10 years (the next will be in 2019–20) to evaluate the NNS/NPAN and to develop a new NNS/NPAN based on performance and priorities (Hajeebhoy et al. 2013).

Data on nutrition and related issues are collected through other channels as well. For example, data on food security are available from the Vietnam Living Standards Survey. Although a wealth of data are available, they are rarely triangulated in a manner that can inform nutrition-specific and nutrition-sensitive policies and programs. In addition, few surveys other than the NNS collect data on infant and young child feeding (IYCF), and even fewer use the WHO-IYCF indicators. For example, the 2010 Multiple Indicator Cluster Survey (MICS) did not report all the recommended complementary feeding indicators, notably minimum dietary diversity and minimum acceptable diet.

The current surveillance tool is a four-page questionnaire used in all 58 provinces. It enables collection and generation of the data necessary to construct state-of-the-art nutrition and IYCF indicators. In addition, the tool has the flexibility to generate data of interest for other nutrition activities (such as mass media interventions and food security) by revising the last page each year to reflect requests from planners and implementers. Data from the NNS have been used to compare trends over time and in different places for policy advocacy and planning at the national and provincial level and for capacity building, but good tools for tracking cross-sector collaboration are not available.

Basic causes for the delay in release of data analysis are the lack of skilled human resources able to analyze data and generate reports in a timely manner, coupled with the lengthy processes for review and approval of data for publication. In Vietnam, the lag between data collection and release is approximately 18 months. Although IYCF data are available in Vietnam, their use for decision making at the national and provincial level appears to be sporadic and inconsistent. This is partly the result of a limited capacity and incentives to use indicators effectively and partly the result of delays in data being communicated and disseminated, especially to provincial stakeholders. Because the WHO-IYCF indicators are relatively new, capacity is needed, especially at the subnational level, to interpret and use these data as indicators are incorporated into surveillance systems. In addition, incentives to use the data effectively would enhance the effect of these indicators on decision making (Hajeebhoy et al. 2013). Examples of incentives are allocating more resources if subnational plans are evidence-based or tracking plans to ensure data are used.

INDIVIDUAL AND COMMUNITY DOMAIN: HUMAN RESOURCE NEEDS, COMPETENCIES, AND STAFFING ADEQUACY

Training needs of nutrition staff

Effective implementation of nutrition programs and policies will depend on building capacity in the nutrition workforce, including preservice and in-service training. In preservice training, clinical nutrition (with a focus on the individual) is taught in the curriculum of medical universities and colleges for medical doctors, nurses, midwives, and those earning degrees in public health, but knowledge of nutrition knowledge has expanded rapidly over the last decade, and so most practitioners require continuing education.

Meanwhile, the focus of nutrition training has changed, from clinical nutrition suitable for fixed health facilities to public health nutrition suitable for communities and populations. The latter involves all aspects of multisectoral involvement because public health nutrition, as opposed to clinical nutrition, encompasses social, political, economic, behavioral, environmental, epidemiological, and preventive medical topics and communication methods and strategies.²⁰

As noted earlier, a missing human resource in the training pyramid in Vietnam is public health and clinical nutritionists and dietitians holding a bachelor's degree in nutrition and dietetics. The health staff available to address nutrition problems in the community have insufficient preservice training in nutrition, indicating that postservice (in-service) training will be a major undertaking for the health and nutrition system and reflecting the capacity gap in the educational institutions and in the service provision structure. Within the Health and Population Target Program, NIN has conducted for the last five years annual training for provincial staff, usually three days a year in the form of updating training rather than basic training, despite the frequent rotation of staff. Provincial staff are expected to roll out the training for district (district health center), commune (nutrition focal point at the communal health station, who is often the midwife), and village staff (village health workers). Because Vietnam has more than 100,000 village health workers, it will be difficult for this training cascade to equip each frontline worker with sufficient knowledge and skills to implement effective nutrition interventions, especially those related to behavior change communication (BCC), which are time-consuming and context-specific (Phuong and Huy 2017).

The capacity of village health workers in ethnic minority areas is below the standards required for delivering health- and nutrition-related social behavior change and communication. In addition, in disadvantaged areas health workers at commune health centers are often from the Kinh group, who are unable to communicate with minority groups because they do not speak the same language. Village health workers are mostly from the Kinh group as well, and most are men because they have greater access to higher education and transportation. Being male can lessen their effectiveness when counseling women on maternal health and nutrition care, particularly on sensitive topics related to childbirth, contraception, and the like (McKinn et al. 2017). As a result, many nutrition interventions in large-scale programs have not had impressive results. Some projects have developed specific nutrition models that use an integrated social BCC approach that is context-, culture-, and ethnicity-specific, but these are resource-intensive and time-consuming and therefore difficult to scale up.

In-service and refresher training has been conducted for staff at different levels. For example, provincial and district staff in charge of nutrition programs are updated on nutrition, advocacy skills, planning, supervision, budgeting, and financing. Nutrition training has also been offered to other relevant sectors in cooperation with international projects, organizations, and companies such as UNICEF, the European Union, A&T, FANTA, the Japan International Cooperation Agency, the Global Alliance for Improved Nutrition (GAIN), and the Queensland University of Technology. All training has focused on capacity building.

From 2011 to 2015, NIN administered preservice academic training to five classes of PhD students in nutrition with 33 candidates. Sixteen candidates received PhDs and became leading nutrition researchers in Vietnam. Others received PhDs from other research institutions and universities in Vietnam and abroad. During this time, NIN continued to cooperate with Hanoi Medical University to run a master's program in nutrition that has graduated 24 students, and other universities are developing master's programs in nutrition and public health with a focus on nutrition. A three-month course provided by the NIN training center since 2013 for in-service staff in hospitals has partially met the need for nutritionists in newly established hospitals.

Overall, government should define the required competencies for quality nutrition workers, leading to standardized capacity building; give priority in training to the community network, especially in disadvantaged areas for ethnic minority groups; expand programs for bachelor's degrees in nutrition, together with the development of nutrition competency standards (Hughes 2004); and promote innovations in training using technology such as e-learning and distance learning.

GAPS IN POLICIES, INSTITUTIONAL ARRANGEMENTS, AND CAPACITY FOR NUTRITION PROGRAMMING

Use of an ecological analysis facilitates identification of gaps in the connections between elements of the system.

Systems domain

An important gap in institutional coordination and ownership is the absence of leadership that will bring accountability for the cooperation and collaboration of other ministries in a multisectoral approach to improving the nutrition of ethnic minority groups. Experience from other countries has shown that bringing sectors together in an accountable way is difficult when the standing body for intersectoral collaboration is in one ministry. After a visit by the SUN movement coordinator in 2017, the deputy prime minister endorsed a plan for a high level of commitment and oversight, but in a last-minute change after government directives on decentralization were issued, the responsibility was left with a line ministry. This was followed by the prime minister's directive on strengthening multisectoral collaboration on nutrition issued in December 2017. However, so far no mechanism for operationalization of the prime minister's directive has been forthcoming. Other SUN countries have a national nutrition committee in the prime minister's office or in some high-level body capable of commanding accountability from various ministries. The Vietnam Nutrition Cluster Group

(the multistakeholder platform of SUN) has long advocated establishment of such a committee, and its importance is documented in the new NPAN.

A related gap is the lack of a clear understanding of where nutrition fits into target programs and in the definition of multidimensional poverty used by CEMA and MOLISA. This gap reflects the lack of a central steering group capable of viewing malnutrition from a broad perspective. The absence of nutrition and malnutrition from the two most important NTPs and from one of the primary measures of deficiency and inequity in the country reveals a major lack of understanding of the importance of this topic for individual, community, and national security and development.

Organizational domain

The institutional set-up for coordination is weak. The national steering committee for the NNS should be reinstated. The present situation in which a single line ministry is asked to create linkages with other ministries to address a problem of national significance presents an organizational challenge. It will take a multisectoral body, overseen by a high-level office, to ensure accountability.

Throughout Vietnam's health system—at both the local and national level—the resources invested in correcting malnutrition in minority communities have been inadequate. Related to this is the need for a system to track investments from other sources of funding, such as by local governments and international aid agencies.

Staff at the central, provincial, district, and commune level need to understand the importance of the 1,000-day period of vulnerability for growth and development. This is where intersectorality is especially needed, but it will occur only when this gap in knowledge is corrected. For example, only a few of the key informants interviewed for this study understood the connection between inputs to the education system and improved school sanitation for girls, lower school attendance and completion rates, and fewer low birthweight babies from adolescent pregnancies. This was particularly true of those serving minority communities in the northern mountains and central highlands, where attendance and completion rates are low. Related to this is the need to expand the ECCE program to include its target population of children from infancy (3 months) to 3–5 years.

Of equal importance is the ability to communicate new information in a way that is not directive or demeaning but that empowers community members. This is the essence of participatory processes that are foundational to research, project design, monitoring and supportive supervision, and community-based research.

Developing capacity in community-based participatory research will deepen understanding of the behavior, beliefs, and culture of ethnic minorities. If done in a truly participatory matter, it has also been found to restore trust (Christopher et al. 2008; Jagosh et al. 2015). Minority groups would have control over research questions, learn and practice participatory methods, analyze collected data, and apply it to local problem solving and decision making. Over time, communities would realize that the process is designed for them to identify and solve their own problems. It must be mutual—that is, there must be shared respect between caregiver and community, but as in most situations that start with an imbalance of power, it will be up to the more powerful people to make the first move.

Another gap is the lack of recognition of the importance of school meal programs as significant social transfer programs. School meals should be free to all

children living in the northern midland and mountainous areas and the central highlands. The requirement for out-of-pocket payments for food by some but not all students is less likely to succeed even where subsidies exist because the practice stigmatizes those receiving subsidies and can lead paradoxically to greater school absenteeism.

Workplace domain

The NNSS data collection process should be validated periodically in field visits from NIN to elevate its profile as the definitive source of community-level nutrition data. Meanwhile, the 18-month delay in the process of data collection, processing, analysis, and distribution of results from the NNSS has rendered the NNSS outdated and therefore less effective for informing relevant policies and programs.

The lack of qualitative data in the nutrition monitoring and evaluation system, which relies heavily on quantitative data, reflects an organizational capacity gap (as well as a gap at the workforce level) because institutions are accustomed to using only quantitative data for analysis and assessment. In fact, they tend to undervalue qualitative data, considering it to be secondary to quantitative data in the rigor with which it is collected and in the answers it can give to questions of why programs are or are not successful (McKinn et al. 2017). And yet the World Bank used qualitative data research methods in its participatory poverty assessments in 1999, 2003, 2008, 2012, and 2013. These assessments elicited responses from a wide range of respondents to identify factors leading to poverty reduction and income growth, along with perceptions of inequality in Vietnam and the unfairness of bribery and corruption (Kozel 2014). The lack of qualitative data and staff trained in qualitative research methods is an underlying gap that pervades all health and nutrition programs. If the gap is found in the monitoring and evaluation sections of the government, the Bank may be able to fill this gap with the expertise it has demonstrated in participatory poverty assessments.

Individual and community domain

The shortcomings of the institutional response to the problems outlined in this report are at the interface where the needs and demands of the community are not aligned with the services offered by local government or community nongovernmental agencies. Moreover, they represent a further breakdown in communication between ethnic minorities and service providers. When poverty in ethnic minorities persisted between 2012 and 2014 in spite of numerous government programs, the institutional response was to modify the concept, reduce the number of NTPs, and restructure them to match the revised context of poverty in these groups. Not much emphasis was put on the reasons for the lack of demand for these services.

There is also a significant shortage of staff trained in public health nutrition and of dietitians and clinical nutritionists. Achieving improvements in all aspects of nutrition will require at least district-level (and ideally commune-level) staff trained in the public health aspects of population-based nutrition. For example, nutrition collaborators in each commune with three months of training in community health need a review and update of their job descriptions as frontline workers in nutrition. The new job description should include the competencies

required for the position, estimate training needs based on gaps in competencies, and describe support to be provided through participation in an ongoing training program in public nutrition.

NOTES

1. Decree on the Trading in and Use of Nutritious Products for Infants, Feeding Bottles and Teats (*Official Gazette*), <https://vanbanphapluat.co/decreed-no-100-2014-nd-cp-on-the-trading-in-and-use-of-nutritious-products-for-infants-feeding-bottles-teats>.
2. The effect on ethnic minority communities is described in chapter 3.
3. P135 was established in 1998 to implement government policies targeting the most vulnerable communes, promoting production and access to basic infrastructure, improving education, training local officials, and raising people's awareness of better living standards and quality of life.
4. The Ministry of Health was the focal entity for drafting the government decree on food fortification.
5. "Universal Early Childhood Education for 5-Year-Old Children 2010-2015" (Prime Minister Decision 239/2010/QĐ-TTg). Universal ECCE has multiple criteria: 95 percent enrollment; 85 percent of 5-year-old children enrolled in full-day preschool; 90 percent attendance; incidence of underweight malnutrition at less than 10 percent; and physical infrastructure, material supplies, and teacher qualification in line with established standards.
6. See https://www.unicef.org/infobycountry/vietnam_statistics.html.
7. See http://moj.gov.vn/vbpq/en/lists/vn%20bn%20php%20lut/view_detail.aspx?itemid=2823.
8. Estimates in this paragraph are from WHO's Global Health Expenditure Database, 2018.
9. WHO, Global Health Expenditure Database, 2018.
10. The two plans of action provided were from Ninh Thuan and Quang Binh provinces.
11. Since 2016, nutrition interventions have been transferred to the Population–Development Project under the Target Program on Health and Population 2016– 2020, along with seven other projects in the health sector.
12. It is estimated that the matching budget from local governments was D 10–D 15 billion a year for the whole country.
13. See English translation at http://asemconnectvietnam.gov.vn/law.aspx?ZID1=10&ID1=2&MaVB_id=2620.
14. The objectives of ECCE (defined in Education Law 2005) are to help children develop physically, emotionally, intellectually, and aesthetically; to shape the initial elements of personality; and to prepare children for first grade (primary education).
15. From interviews and discussion at MOET, March 7, 2018.
16. Circular 01/2016/TT-BGDĐT, dated January 15, 2016, MOET, on the regulation of organization and operation of ethnic minority boarding schools.
17. Report of MOET at the National Workshop on Development of Boarding School System in Ethnic Minority and Mountainous Areas, June 10, 2016, Da Nang.
18. Joint Circular 09/2013/TTLT-BGDĐT-BTC-BNV, MOET, Ministry of Finance, and Ministry of Home Affairs, on preschool education policy regulations from 2011 to 2015.
19. Circular 26/2017/TT-BYT, dated June 26, 2017, regulating functions, responsibilities, power, and structure of the provincial center for disease control.
20. See <https://www.wphna.org/> for more information on public health nutrition.

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5 Nutrition-Specific Interventions and Approaches

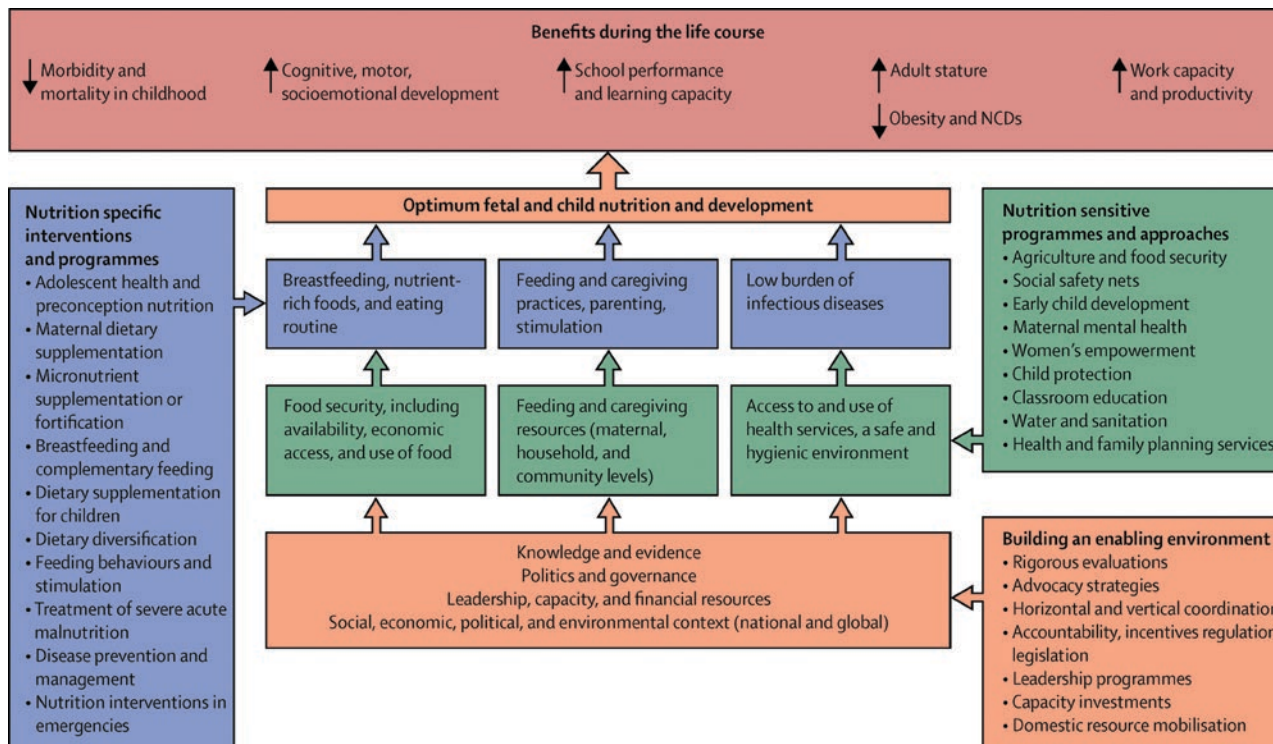
The 2013 *Lancet* framework for action outlines nutrition-specific and nutrition-sensitive interventions aimed at achieving “optimal fetal and child nutrition and development” (Bhutta et al. 2013; Black et al. 2013)—see figure 5.1. If implemented with 90 percent coverage in the 34 countries with 90 percent of all stunted children, the evidence-based interventions—termed *nutrition-specific*—would lead to a 15 percent global reduction in under-5 mortality.

Nutrition-specific interventions focus on the first 1,000 days of life—from conception until a child’s second birthday—and include maternal dietary supplementation and micronutrient supplementation or fortification, interventions for newborns such as delayed cord clamping and neonatal vitamin K and vitamin A supplementation, promotion of breastfeeding, dietary diversity, adequate and appropriate complementary feeding, multiple micronutrients, disease prevention and management, and prevention and treatment of severe acute malnutrition. They are aimed at improving the immediate nutritional input to the child. To be successful, they should be provided through a program of improved feeding and caregiving for the child from a responsive parent in an environment of low disease burden.

MATERNAL AND CHILD MALNUTRITION CONTROL PROGRAM

In Vietnam, the health sector implements nutrition-specific interventions mainly through the community-based health system. Under the draft National Plan of Action for Nutrition (NPAN) 2017–2020, seven projects were recommended for implementation: (1) the project for nutrition education, communication, and capacity building; (2) the project for maternal and child malnutrition control aimed at reducing stunting, increasing height, and attaining proper health and nutrition for pregnant women; (3) the project for micronutrient deficiency control; (4) the Program for School Nutrition; (5) the project for overweight and obesity and nutrition-related, noncommunicable, and chronic disease control; (6) the program for food and nutrition security and nutrition in emergencies; and (7) a nutrition surveillance project. Of these seven projects, only the project for maternal and child malnutrition control, titled the Protein

FIGURE 5.1

2013 *Lancet* framework for action to achieve optimum fetal and child nutrition and development

Source: Black et al. 2013, © The Lancet. Reproduced with permission from Elsevier; further permission required for reuse.¹

Note: NCDs = noncommunicable diseases.

Energy Malnutrition Control (PEMC) program, secured funding from the National Target Program (NTP) and has been implemented on a national scale. This program is the only one to include adolescent health and nutrition in its objectives (GOVN 2012).²

The PEMC program has gone through many changes since its inception in 1991. It was initially implemented by the Vietnam Committee for Protection and Care of Children, which no longer exists. The Ministry of Health (MOH) managed it from the central to the local level beginning in 1998. Since then, nutrition interventions have been incorporated into one of the 10 NTP projects for the eradication of some social diseases and dangerous epidemics (2001–10) and the NTP for health (2012–15) under the Project for Reproductive Health Care and Child Malnutrition Improvement.

In 2016 the NTP for health was incorporated into the Target Program on Health and Population 2016–2020,³ and nutrition became a component of the Project Population and Development Project, which was one of eight projects. The objective of the new program is “to reduce mortality and malnutrition in mothers and children, narrowing the disparity of maternal and child health indicators among regions of the country” and thus clearly identifying vulnerable ethnic minorities for special attention.

The interventions in the new NTP for health include:

- Training and supervision of work at the community level for nutrition interventions by community health stations (CHSs) and village health workers

- Practical instruction on food preparation and nutrition care for pregnant women and mothers with children under 5 years old who are under- or overnourished
- Development of malnutrition intervention models appropriate to each region
- Vitamin A supplementation and other nutrition promotion campaigns
- Supply of nutrition products⁴ for pregnant and lactating women and malnourished children under 5 years old in poor, marginally poor, and socially protected families and in regions with nutrition emergencies.

NUTRITION-SPECIFIC INTERVENTIONS FOR WOMEN BEFORE PREGNANCY

The following programs and projects target important elements of adolescent health and nutrition that directly affect low birthweight (LBW) and stunting. They do so by ensuring that adolescents do not enter pregnancy before they have stopped growing and that when they do enter pregnancy they are in good health with adequate nutritional status. Specifically, the focus on adolescents is on prevention of pregnancy and preparation for parenting when they reach their twenties.

Trials of weekly iron and folate for adolescent girls

An initial 12-month trial of weekly iron and folate supplementation in the Yen Bai province in 2005 and 2006 reduced anemia in women of all ethnic groups. Weekly iron and folate supplements and regular deworming treatments were provided free of charge and made universally available for women and girls of reproductive age over a 12-month period in two districts where anemia rates were high. The program reduced the prevalence and severity of anemia, iron deficiency, and hookworm infection (Casey et al. 2009). After this initial success, it was extended in 2006 to the entire province and continued for 72 months from 2006 to 2012. At the end of six years, 72.0 percent of participants reported still taking at least 75 percent of the weekly supplements, and 85.0 percent had taken the most recent deworming treatment. The results were dramatic; anemia fell from 37.8 percent to 14.3 percent, and hookworm prevalence dropped from 75.9 percent to 10.2 percent (Casey et al. 2017). Although the cost per person was low (\$0.76 per woman per year), the cost to the province of supplying weekly supplements ran as high as \$200,000 a year—well beyond the provincial budget. As a result, the project was discontinued, although it was included as an “unfunded” activity in NPAN 2020.

In 1995 Vietnam began an iron supplementation program for nonpregnant women ages 15–35 of one 60-milligram ferrous fumarate tablet plus 400 micrograms of folic acid a week for 16 consecutive weeks a year. This was coupled with a supplementation program for pregnant women with the same preparation and a dose of iron. More than 100,000 pregnant and reproductive-age women received annual supplements from the program, but in 2005 UNICEF stopped providing iron tablets for the program, leading to a temporary disruption in supply and coverage. After funding stopped, the National Institute of Nutrition (NIN) adopted a social marketing approach for the general population, along with some secure funding from the PEMC budget at the central and local level to provide coverage for targeted populations, but coverage and compliance have remained a challenge.

Programs to prevent adolescent pregnancies

Programs to prevent adolescent pregnancies in Vietnam are not well embraced by ethnic minority populations. Even if sexual and reproductive services are affordable, fears and cultural beliefs and practices create significant barriers to the unmarried youth who need them (Hoang, Nguyen, and Duong 2018; UNFPA 2008). A 2007 UNFPA report noted that adolescent sexual and reproductive health is not adequately covered and that materials are not generally available. This was a general comment and not specific to ethnic minority communities, where it is likely that access to this information is even more limited (UNFPA 2007).

From 2004 to 2010, a pilot project aimed at evaluating expansion of adolescent-friendly contraceptive services eventually reached 28 sites in 17 of Vietnam's provinces at the end of the six-year period. This was part of the pilot by the Ministry of Health (MOH) of a number of intervention models on the sexual and reproductive health of adolescents for girls in and out of school. A United Nations brief on young people in Vietnam (2012–16) noted that 35 percent of unmarried young people had an unmet need for contraceptives. However, it did not specify ethnic minorities in highland populations, who may have a higher prevalence of unmet needs. The brief also stated that approximately one-third face barriers when trying to access reproductive health information and services (UNV-WGY 2016).

NUTRITION-SPECIFIC INTERVENTIONS FOR PREGNANT WOMEN

Iron, folate, and multimicronutrient supplementation

As a program, health workers and communities support iron and folate supplementation. The supplements are available for sale at health facilities for use as recommended. In disadvantaged areas, the supplements can also be acquired through a flexible application of health insurance (which is free for poor people) or by mobilizing external aid from nongovernmental organizations (NGOs) and other agencies. Based on a 2015 national micronutrient survey conducted by NIN in six provinces, the self-reported coverage of iron supplementation was 62.7 percent (61.2 percent in mountainous areas) in pregnant women and 23.4 percent (25.1 percent in mountainous areas) in lactating women (Nga and Van 2017). More information was available from a previous survey, the General Nutrition Survey 2009–2010, which revealed that 57.6 percent of pregnant women had iron supplementation in the first trimester and 25 percent in the second and third trimesters and that 14.7 percent never obtained supplements (NIN/MOH 2010).

Multimicronutrient supplementation was implemented on a small scale before 2014, with the PEMC program providing supplies for women living in vulnerable areas. In 2015 coverage of multimicronutrient supplementation was 20.5 percent in pregnant women and 6.4 percent in lactating women, irrespective of funding resources—mostly from out-of-pocket payments by urban women (Nga and Van 2017). The survey was not a large enough sample to disaggregate by ethnicity or location and was administered in only six provinces, but it suggests the urban–rural difference noted earlier and slightly better uptake in mountainous areas (16.4 percent). However, these numbers must be taken with caution. The poor uptake was because of the expense and lack of a convincing behavior change communication (BCC) strategy to convince families of its effectiveness.

NUTRITION-SPECIFIC INTERVENTIONS FOR THE HEALTH AND NUTRITION OF CHILDREN

Disease prevention

Nationally, the full vaccination rate for infants, pregnant women, and women of reproductive age (box 5.1) has continued to be more than 80 percent, and more than 92 percent for the Kinh majority (GSO and UNICEF 2015). However, full vaccination coverage is reportedly less than 50 percent in many districts and communes in the northern mountainous area and less than 30 percent in a number of communes for individual vaccines such as hepatitis B (figure 5.2). Vaccination outreach at the village level has been curtailed where vaccines are given only at certified health clinics, making it difficult for children living in remote ethnic minority villages to access the service. Infectious diseases in the Expanded Program on Immunization (measles, diphtheria, pertussis, and hepatitis B) are still not sustainably eliminated because of the continued exposure of a host population that has been insufficiently vaccinated.

Although Vietnam has malaria under control, having reached the global target on malaria prevention,⁵ provinces in the central highlands are disproportionately affected, including by multidrug-resistant *Plasmodium falciparum*, which accounts for half of cases in the country. Vietnam is implementing the National Strategy to Control and Eliminate Malaria 2011–2020, of which the National Program for Malaria Control is within the scope of Project 1 of the Target Program on Health and Population, which is aimed at prevention and control of some dangerous infectious diseases and common noncommunicable diseases. The interventions include equipment, medicines, research and capacity building, and monitoring and supervision. As for other programs under the Target Program on Health and Population, the central budget of this program has been cut since 2014, although secured funding for malaria control is available from the Global Fund for TB, AIDS, and Malaria through an official development assistance project. The project is designed to intensify community-based malaria control, target key risk groups, and enhance the functioning and sustainability of Vietnam's malaria control efforts in 31 provinces, of which seven are in the north mountainous area and five in the central highlands.

Heavily forested areas and families living on the edges of forests in hilly areas in the southern and central provinces are targeted because these areas—many of them inhabited by ethnic minority groups—are affected disproportionately (Erhart et al. 2005). Migration, the growing resistance to antimalaria drugs, and

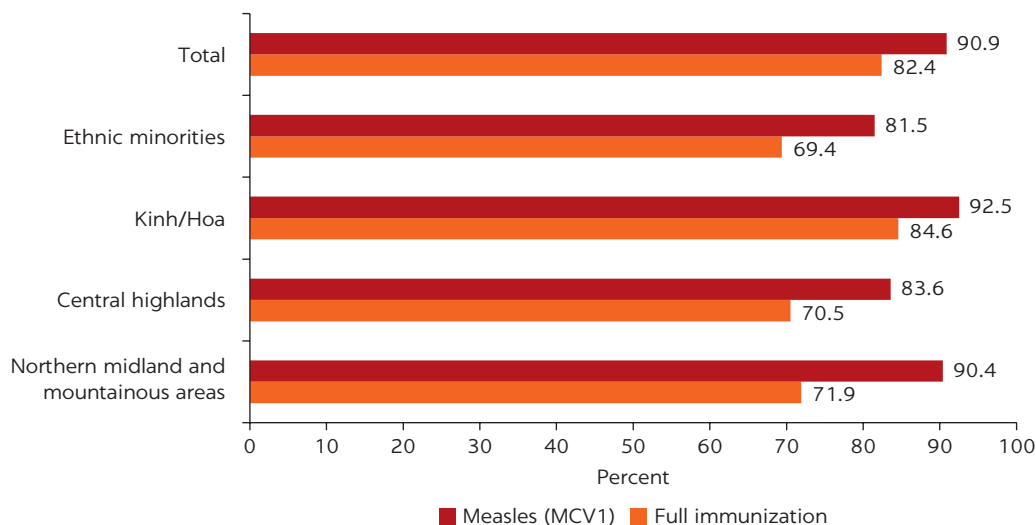
BOX 5.1

Malnutrition and vaccinations

Malnutrition has been described as the “most common immunodeficiency” disease in the world (Prendergast 2015). Malnutrition and vaccinations are inextricably linked, elements in a vicious cycle in which disease reduces a child's appetite and consumes calories and nutrients that the child's body needs to

defend itself. That in turn leads to greater malnutrition, immunodeficiency, and susceptibility to disease. Vaccinations can help break that cycle and prevent malnutrition—including stunting—by preventing disease onset or by lessening the effect of the infection and modifying the body's response.

FIGURE 5.2
Vaccination rates by region and ethnic group: Vietnam



Source: GSO and UNICEF 2015.

Note: MCV1 = Measles-containing-vaccine first-dose.

the changing climate are continuing challenges to addressing this disease. Furthermore, maintaining donor investment in a country that appears to have achieved its goals when other countries continue to have problems is necessary if malaria is to be completely eliminated (WHO 2018b).

The nationwide Community-Based Deworming 6116 Program was initially linked to the twice-a-year vitamin A distribution campaign for children ages 2–5. New MOH guidelines on community-based intestinal deworming in 2016 by the National Institute of Malariology, Parasitology, and Entomology recommend that deworming be conducted twice a year for all family members through the Community-Based Deworming 6116 Program.⁶ The 2015 NIN national micronutrient survey revealed that coverage of deworming was 12.5 percent in children ages 24–59 months (in the last six months), 13.4 percent in reproductive-age women, and 2.6 percent in pregnant women. Deworming of soil-transmitted helminths (particularly roundworms), along with low-dose beta carotene supplements, can significantly increase vitamin A absorption (Haque et al. 2010). A recent study based on a review of data from 325,114 children from 66 Demographic and Health Surveys from 2005 to 2016 showed a statistically significant albeit modest effect of deworming (a 1.2 percentage point decrease from average) on stunting in preschool-age children (Lo et al. 2018).

Worm infections are a problem in Vietnam, particularly in the northern mountain and highland regions (prevalence, 65 percent) and the central highlands (prevalence, 28 percent). The prevalence is highest among preschool- and primary-school-age children and women of reproductive age. The MOH Guidelines on Community-Based Intestinal Deworming⁷ recommend that deworming be conducted every one or two years and twice a year in highly endemic areas for those over the age of 12 months, except for pregnant women in the first trimester and lactating women.⁸ Depending on the situation, each province makes its own decision on the frequency of and target population for deworming.

Hygiene has been promoted in Vietnam since 2012, when the prime minister named July 2 as “Hygiene Day for Health Promotion” and launched “Patriotic

Hygiene for Improving People’s Health” in Directive 29/CT-TTg. The prime minister assigned the relevant sectors and all administration levels the task of implementing comprehensive approaches to raise the population’s awareness of the need to address hygiene, particularly changing unhygienic behaviors. In response, communication activities, training, and materials on hygiene promotion have been developed in community, school, and health facilities. The movement has been integrated into the National Target Program for New Rural Development (NTP-NRD) focusing on two hygiene practices—handwashing with soap and using hygienic latrines—although the awareness of the community and the interest of and investment by localities in sanitation and hygiene are limited. A recent MOH investigation revealed that only 23 percent of people wash their hands with soap before eating and 36 percent after going to the bathroom. More social BCC activities should be conducted because changing behavior will take time and requires strategic approaches, especially for ethnic minority groups.

Disease treatment

The Integrated Management of Childhood Illness was initiated in Vietnam in 1996, with the goal of reducing child mortality and morbidity by managing common diseases in children such as acute respiratory infection, diarrhea, malaria, measles, hemorrhagic fever, and malnutrition. The National Institute of Hygiene and Epidemiology manages this program, but it is no longer implemented on a stand-alone basis as initially planned. Activities for its three components (better management of illness in children, monitoring of the health system, and better family and community health care practices) have been integrated into existing community child health care programs. A review of the literature and discussion with members of the National Institute of Hygiene and Epidemiology reveals that the future of this program is not clear. Moreover, with the exception of a 2015 report of an evaluation of the knowledge, attitudes, and practices of some well-educated rural mothers in the southern provinces of Vietnam that showed positive findings on breastfeeding and newborn care but gaps in knowledge about diarrhea and pneumonia (Thac et al. 2016), it has been difficult to find a process or outcome evaluation of its effectiveness, particularly related to training in undernutrition and acute malnutrition.

Infant and young child feeding

Infant and young child feeding (IYCF) has been promoted mainly through nutrition education and social behavior change communication. Nutrition education and social BCC have been promoted in recent years, including by organizing annual nutrition communication campaigns (such as Micronutrient Day, Breastfeeding Week, and Nutrition and Development Week), developing nutrition education and communication materials, and enhancing nutrition education and communication activities through social networking and in the community through other successful models.² Communication activities have been conducted at different levels from the central down to the community level through the health system network with the involvement of social organizations and the mass media. However, in the last three years no budget has been allocated at the central level for nutrition education and communication campaigns, dissemination and publication of communication materials, or active broadcasting on mass media. Some communication activities are still being conducted

using resources such as international funding, local funding, and private sector support. Health- and nutrition-related interpersonal communication is being delivered at the community level under the umbrella of the PEMC program. Topics covered include IYCF, pregnancy care, and micronutrient deficiency.

More than half of pregnant women and mothers with children under 2 years old attend nutrition education sessions annually (Tuyen, Mai, and So 2017). All reproductive health centers at the provincial level have nutrition counseling activities. NIN, in cooperation with Alive and Thrive, a nutrition project funded by the Bill and Melinda Gates Foundation, established more than 1,000 standardized nutrition counseling centers (Little Sun Counseling Service) in 15 provinces¹⁰ from 2010 to 2014. NIN maintains these centers without any funds from the central government, although there have been questions as to whether this model, once very successful, can be sustained and function without secure financial resources.

Critical social BCC activities such as growth monitoring and promotion, food demonstration, and nutrition clubs that were very active before the 2014 central budget cuts are no longer being implemented regularly, thereby reducing significantly the frequency of health worker contacts with caregivers to deliver nutrition messages. In addition, the lack of capacity of village health workers who are now in charge of nutrition interventions and the lack of equipment and tools that the NTP once funded (for example, anthropometric measurement scales; growth charts; and information, education, and communication materials) are major constraints, especially in provinces where additional funding is not available from the local government for nutrition programs, especially those in largely ethnic minority provinces (Save the Children 2017).

Micronutrient supplementation

Since 1995, Vietnam has been recognized as xerophthalmia-free, but subclinical vitamin A deficiency still exists. The vitamin A supplementation program Vietnam has run since 1988 and was expanded to national coverage in 1993 (Khan et al. 2002). High-dose vitamin A supplementation is provided twice a year nationwide for children ages 6–36 months. In 22 disadvantaged provinces, children ages 6–59 months receive supplements. The national Micronutrient Day held yearly on June 1–2 has included activities for control of vitamin A, iodine deficiencies, and anemia. A second mass vitamin A administration campaign is held nationwide in December.

Postpartum mothers receive 200,000 international units (IU) of vitamin A supplements within the first month after delivery. Severely malnourished children and children with measles, diarrhea, and acute respiratory infection admitted to hospitals receive supplements of the same dose.

Although the government has maintained adequate vitamin A supplies since external support ended in 2005, there has been insufficient supervision and regulation of the distribution of vitamin A to sick children and postpartum mothers in hospitals and maternity wards. In the most recent micronutrient survey, coverage of vitamin A supplementation on campaign day was 76.7 percent of children (75.7 percent in the mountainous area) and 42.4 percent of postpartum mothers (49.5 percent in the mountainous area). The reported coverage from the PEMC system was greater than 90 percent for children and 70 percent for postpartum mothers.

From 2010 to 2013, with an adequate budgetary allocation, the PEMC program provided multimicronutrient powder for malnourished children in certain communes in 18 disadvantaged provinces (categorized by poverty and child malnutrition level), mostly in the northern mountainous area and central highlands. Since 2014, the poor populations in seven provinces have, however, exhibited limited uptake of NIN's micronutrient powder BIBOMIX for malnourished children because of its cost and lack of product acceptability (Turk et al. 2017). Therefore, although it is promoted and recommended in many technical guidelines, this product has never been made a mandatory component of nutrition interventions, but instead is one that could be provided when funding can be secured.

Zinc supplementation has also not become common practice, even though there are technical guidelines from the MOH on zinc supplementation after diarrhea for children. The many reasons for this include health providers' lack of knowledge of its importance and the unavailability of the supplements, especially in primary health care units. Recent data confirm that zinc deficiency is a public health problem (Laillou et al. 2012; Nga and Van 2017)—see figure 2.5.¹¹

Management of moderate and severe acute malnutrition

Vietnam has more than 200,000 cases of severe acute malnutrition (SAM) a year (NIN/MOH 2010). To accelerate the treatment of SAM, a community-based treatment with ready-to-use therapeutic foods (RUTFs) is recommended. In a joint effort by NIN, UNICEF, and the Institut de Recherche pour le Développement, a local RUTE, optimized for effect and acceptability, was developed and tested.

Meanwhile, national guidelines for the Integrated Management of Acute Malnutrition (IMAM) program were developed and approved by the Ministry of Health. The IMAM program was highly successful in treating children with SAM, with more than 90 percent of the children recovering. From 2013 to 2015, UNICEF, Plan International, and PEMC operated the IMAM program in more than 100 communes nationwide, mostly in the northern midland and mountain region and central highlands, where SAM rates were high. During that period, some 4,000 children with SAM were treated annually in the community. However, since 2016 there has been no external funding to maintain the program. UNICEF and NIN have worked together to advocate inclusion of the cost of IMAM in child health insurance, but RUTF was considered a food, not a drug, and so it could not be included on the essential drug list. Meanwhile, advocacy efforts are continuing to include the SAM treatment in the basic intervention package so that sustainable funding for IMAM treatment is available to expand the program.¹²

In 2016, in response to the nutrition emergency arising from a prolonged drought and saline intrusion in 10 provinces of Vietnam (two in the central highlands), UNICEF collaborated with the MOH and the Ministry for Agriculture and Rural Development (MARD) on a humanitarian assistance program that provided SAM treatment for 7,640 children, micronutrient supplementation for 83,569 lactating and pregnant women and for 62,279 children ages 6–23 months, and access to safe water for 78,000 affected households. Nevertheless, more calls for integration of nutrition into the National Plan for Emergency Preparedness are needed so that it can become a formal component of the government plan, not just part of aid initiated by UN agencies (Viet Nam News 2017a).

NUTRITION-SPECIFIC INTERVENTIONS FOR THE WHOLE POPULATION

From 2012 to 2017, NIN ran the National Food Fortification Project. With the support of the Global Alliance for Improved Nutrition (GAIN), the project reached a large percentage of the population, especially poor and vulnerable groups living in areas where a high prevalence of multimicronutrient deficiencies was expected. These groups were able to afford fortified food, and so edible oils fortified with vitamin A have reached a wide range of consumers (with 39 percent of surveyed consumers selecting fortified products). As a result, Decree 09/2016/ND-CP on mandatory food fortification was ratified toward the end of the NIN project. Nevertheless, food industry groups have objected to the decree, citing technical difficulties and possible problems of interactions between iodine and other ingredients and the difficulties in convincing their clients to accept products made with fortified wheat flour. This situation has led to a delay in implementation of the decree.¹³

From 1995 to 2005, Vietnam increased iodized salt coverage from 33.4 percent to 92.3 percent. Subsequently, because of the change in law to make salt iodization voluntary rather than mandatory and the phasing out of free KIO_3 supplies for salt producers, coverage fell to 60 percent in 2014 (National Hospital of Endocrinology 2017). The rate of goiter in children ages 8–10 years is 9.8 percent, and the median level of iodine is 8.3 micrograms per decaliter. Goiter prevalence in the mountainous areas is higher, 12.1 percent, and in the same areas 30.5 percent of the population has urinary iodine levels of less than 10 micrograms per decaliter (National Hospital of Endocrinology 2017). These levels probably reflect the fact that during the time of mandatory salt iodization, household coverage of iodized salt rose to 92.3 percent and iodine intake was adequate, but when salt iodization was made voluntary, household coverage of iodized salt fell and iodine deficiency returned. In its recent revision of the iodine deficiency disorder program and issuance of Decree 09 in 2016 on mandatory salt fortification, the government is attempting to address the problem.

Mandatory food fortification is pending for three food products: iodized salt (came into effect in March 2017), iron- and zinc-fortified wheat flour, and vitamin A-fortified edible oils (applied for in March 2018). Other fortification options are voluntary and are promoted using a social marketing approach, so they have mostly reached populations with better access to the modern market and rarely those in ethnic minority provinces with limited access and purchasing power.

GAPS IN NUTRITION-SPECIFIC INTERVENTIONS AND APPROACHES

Protein Energy Malnutrition Control is an umbrella program for interventions that target protein-energy malnutrition in women and in children under 5 years old. PEMC does not focus specifically on the interventions and age groups that have been the target of the 1,000-day window of opportunity approach and lacks some of the crucial elements of that strategy that would be more effective in preventing protein-energy malnutrition in women and children. However, it is a useful nutrition-specific intervention (Imdad et al. 2017). The gap is in the lack of programming for two periods when children are most vulnerable to malnutrition: the intrauterine period from conception to birth and the period from birth

through 2 years. As a result, PEMC administers and pays for interventions that may not be the most efficient use of resources such as food preparation courses.

The fragmentation of interventions that tends to occur with vertical programs that fall within other departments (such as disease prevention in Preventive Health or deworming in the Institute for Pathology) produces gaps in program content. The intent is to combine these interventions at the community level, where, for example, vitamin A campaigns are linked with deworming. As for the target population, PEMC would be improved by a greater focus on pregnancy and prepregnancy. For example, the vitamin A campaign (now managed by the Child Malnutrition Control Program or PEMC) focuses on children ages 6–36 months in general and children ages 6–59 months in 22 of the poorer provinces. A focus on children younger than 2, as the evidence from the 1,000-days approach supports, may prevent dilution of program resources, particularly in resource-poor areas, although NIN feels it is too restricted in areas where there is greater deficiency.

Food preparation classes may not play a significant role in preventing malnutrition, but if the community asks for them, they can provide an opening for community participation in a nutrition activity. Some of the interventions dropped from the previous project, such as micronutrient deficiency prevention, are now a part of PEMC because they reflected recommendations of the recent *Lancet* series that detailed evidence-based nutrition-specific and nutrition-sensitive interventions (Black et al. 2013).

Because the changes in PEMC are not in line with some of the published recommendations of evidence-based nutrition-specific interventions, it would benefit from a critical review of its components (Black et al. 2013). For example, targeting children younger than 5 years old instead of those younger than 2 years old may be popular in the community but, in a resource-constricted environment, it may not be the most effective use of funds. Similarly, food preparation courses should be evaluated to determine whether they improve community participation in other known nutrition-specific interventions.

The discontinuation of the National Intersectoral Steering Committee along with organizational changes at the provincial level have created uncertainty about the capacity of the health system to implement nutrition programs. Organizational clarity is needed, which could be provided by reinstating the National Intersectoral Steering Committee for Nutrition. As experience in other countries confirms, it is essential to clarify roles and responsibilities and unite all of the sectors involved in efficient collaboration in improving nutrition. The absence of an effective coordination mechanism has contributed to the confusion about the roles of agencies in the health sector. One example is the overlap between the former three centers: reproductive health, preventive health, and health education.

GAPS IN NUTRITION-SPECIFIC INTERVENTIONS FOR WOMEN BEFORE PREGNANCY

Gaps in programs

More data on adolescent health and preconception nutrition are needed. As noted in the nutrition-specific interventions and programs in the 2013 *Lancet* article, adolescent nutrition is recognized as being critical to the prenatal environment of developing children (Black et al. 2013). According to the Committee

for Ethnic Minority Affairs (CEMA), adolescent pregnancy is “the most important cause of malnutrition in the country today.” CEMA has found that early marriage and subsequent pregnancies (more than half immediately after marriage) have a major effect on child and maternal nutrition. This is particularly true of the effect of adolescent pregnancies on stunting.

Although at least 20 percent of stunting stems from intrauterine nutritional insufficiency (Black et al. 2013),¹⁴ there is insufficient emphasis on programs to keep girls in school longer to prevent early marriage and pregnancy as a child nutrition measure. Access to sexual and reproductive health education and contraception by adolescents from all, but especially ethnic minority, communities are not emphasized, and adolescent health in general is absent from these programs. As noted, adolescent pregnancy is considered one of the most important causes of persistently high rates of stunting in the country and may lead to an increase in the number of closely spaced pregnancies. Adolescent marriage and pregnancy are not found in all ethnic minority groups and may also be found in girls in Kinh majority households. More information is needed on the causes of this behavior (UNICEF and UNFPA 2018).

Adolescents and adolescent pregnancy (nutrition-sensitive effects)

There is a general gap in information on adolescents and on the very high rates of adolescent pregnancies. In addition to the nutrition-specific causes of intrauterine growth restriction (IUGR), nutrition-sensitive effects occur as well: early marriage, early pregnancy, and dropping out of school lead to limited life options for adolescents and a constricted space to develop their own personalities (UNICEF and UNFPA 2018). School dropouts have poor prospects for economic development, and low birthweight babies and children who are short are more likely to have poor cognitive development, leading to poor school performance (Aldermann, Hoddinott, and Kinsey 2006).

GAPS IN NUTRITION-SPECIFIC INTERVENTIONS FOR PREGNANT WOMEN

Deworming of pregnant women should be considered in highly endemic areas in the mountain regions of Vietnam, but it is not widely practiced. Although governments hesitate to give deworming tablets to pregnant women, the World Health Organization (WHO) recommends deworming twice in pregnancy (in the second and third trimester) and treating lactating women the same as women who are not pregnant (WHO 2018a). Other constraints may cause this gap, such as unavailability of deworming medicine or logistics in delivering it to pregnant women, but these can be addressed after the fear of unwanted effects is addressed.

The lack of weekly iron and folate supplements for young women and adolescent girls is another major gap in the program. Women do not begin receiving iron in pregnancy until they come to the health station for their first prenatal care visit, which may be late in the first trimester (20 percent of ethnic minority women) but is more often well into the second (57.8 percent) or even third trimester (GSO and UNICEF 2015). As a result, the developing fetus is deprived of this essential micronutrient, especially if the mother is anemic or iron-deficient. Research from Vietnam in 2005 revealed that weekly iron and folate tablets

starting at least three months before conception ensure that a woman enters pregnancy with adequate iron stores and hemoglobin concentrations. It also showed that weekly iron was safe and effective in preventing iron-deficiency anemia before and during pregnancy (Casey et al. 2017; Cavalli-Sforza et al. 2005).

Adequate levels of folic acid at conception can reduce the incidence of neural tube defects such as anencephaly and spina bifida by as much as 72 percent (Wald, Morris, and Blakemore 2018; Werler, Shapiro, and Mitchell 1993). However, in Vietnam foods are not currently being fortified with folic acid because of lack of strong evidence of folate insufficiency in the country. This remains the argument even though a GAIN study in association with NIN reported in 2012 that marginal folate status was found in 25.1 percent of Vietnamese women (Laillou et al. 2012). The authors also found vitamin B₁₂ deficiency to be a public health problem and raised concern that, combined with marginal folate levels, Vietnamese women in areas without adequate animal protein intake could put their pregnancies at risk for neural tube defects if daily supplementation¹⁵ was not provided in the months before pregnancy and the periconception period. This inexpensive micronutrient needs to reach all women, particularly the difficult-to-identify population of women intending to get pregnant soon. Fortification has been shown to be an excellent way of augmenting folate stores in the body leading up to pregnancy and can overcome barriers of poverty and lack of education (Crider, Bailey, and Berry 2011). However, the government is reportedly hesitant to institute the program, citing a lack of clear data showing a significant level of folic acid deficiency in the population, although in multiple studies within and outside of Vietnam use of an iron-folate mix before conception leads to children with better growth and fine motor development at 2 years of age (Casey et al. 2017; Smitasiri and Solon 2005).

The promising advances that the food fortification program has made recede when the government lacks a political commitment to monitoring and enforcing the program. The main difficulty in implementing this program is industry's resistance to mandatory fortification. Enforcement of fortification by the government is perceived as being in conflict with the government's priority of creating a positive environment for industry in the interests of economic development. Therefore, even though the government's mandate for food fortification is a step in the right direction, it will be effective only if it is enforced and resources are available to implement it. Mandatory fortification of salt as implemented in other Southeast Asia countries will serve as an important case study.

Another gap in the food fortification program is related to access and affordability and how these affect the reach of the program. Data are lacking on the extent to which fortified foods reach remote, underserved areas where the need is greatest and affordability is a significant actor. If only people in well-off communities who can afford these foods consume them, the primary purpose of fortifying them may be lost. In addition, fortification is not a complete solution for undernutrition and micronutrient insufficiency in children younger than 2 years old because their intake of any single food source is not likely to be sufficient to receive a full recommended dietary allowance of a micronutrient. As for women, fortification programs are aimed at those of all ages.

Meanwhile, it is not clear whether fortification programs can coexist with supplementation programs without exposing consumers to dangerous overloads of micronutrients. At least for folic acid supplements and fortification, studies from the United States indicate that this is not a problem (Bentley et al. 2006; Wolff et al. 2009).

GAPS IN NUTRITION-SPECIFIC INTERVENTIONS FOR CHILDREN

Gaps in programs and projects

Although the popular press has referred to Vietnam as “among five countries in the world to suffer the most from climate change,” planning for anticipated increases in infectious diseases related to climate change is lagging (Vietnam.net 2016). Many hard-won battles may need to be refought as the effects of natural disasters—floods, storm surges, drought, prolonged periods of higher-than-normal temperatures—increase vector populations and their spread. Rozenberg and Hallegatte (2016) used microsimulations to project an increase in stunting (as a marker of undernutrition) in the children of families earning less than \$8,000 per year and a 10 percent increase in the prevalence of diarrhea by 2030. The projected increase in stunting matched predictions in a WHO quantitative risk assessment that foreshadowed a 0.9 percent increase in stunting (0.6 percent in severe stunting) attributable to climate change by 2030 in Southeast Asia (WHO 2014). The increase in stunting is attributed to the effect of climate change on cereal production and its effect on food security, as well as increases in diseases such as diarrhea and their effects on food intake. Recognizing climate change as a nutrition-specific (affecting diseases) and nutrition-sensitive (affecting agriculture) cause of stunting will be critical to future plans for combating malnutrition in Vietnam.

Vietnam is not alone in having difficulties changing handwashing behavior and use of latrines to replace outdoor defecation. An inverse relationship between household hygiene (in particular handwashing with soap after defecation and before eating meals) and stunting has been demonstrated through research in India and other countries (Rah et al. 2015), but handwashing with soap and using latrines has remained a challenge in ethnic minority communities. Qualitative research from the northern provinces elucidate the cultural beliefs and attitudes that are in conflict with government-advocated and -supported actions for latrine use. Among the problems is the difficulty having soap and water available during extended periods for those working in the fields. In schools, the absence of soap rather than a reluctance to wash hands may prevent schoolchildren from handwashing with soap (Rheinländer et al. 2010; Thanh Xuan et al. 2013). Application of this type of qualitative research—particularly community-based participatory research—in program communication and strategy development is needed.

Budget-related gaps

Budget cuts are creating gaps in crucial components of nutrition programs. For nutrition education and communication, the cuts risk undermining programs that have been successful in providing nutrition counseling. Meanwhile, lack of resources has exposed the lack of capacity of village health workers to deliver on nutrition-related activities because they have no access to the externally provided training and information, education, and communication materials needed to promote nutrition-related topics. Measures by external donors and NIN may succeed in filling gaps for a short period, but without a steady supply of resources, these measures are likely to decay over time. For example, the government took over supplying vitamin A for national campaigns after UNICEF ended its supplies in 2005, but there are some questions about the supervision of distribution of these to high-risk children and postpartum mothers, with coverage figures varying.

Along the same lines, the government has not found a satisfactory solution to providing multiple micronutrient powders to high-risk children. Cost and acceptability are given as limiting factors. Research suggests that a child deficient in one micronutrient is likely to be deficient in many, and so the logical conclusion is that supplementation should be with more than one micronutrient, as in Vietnam. Sustaining the previous program through government funding rather than social marketing could remove at least one of the reasons for low uptake by poor families. This problem received national attention in the media in May 2017, when alarming levels of multimicronutrient deficiencies (particularly zinc) were discovered in young children and pregnant women (Viet Nam News 2017b).

The lack of social health insurance and other government funding for RUTFs puts the financial burden of humanitarian emergencies on external sources and thus exposes the vulnerability of the government to those providers. Recognition of the response to humanitarian emergencies resulting in acute malnutrition as a national public good would justify government investment in these interventions.

NOTES

1. Reprinted from *The Lancet*, Vol. 382, Black, R. E., C. G. Victora, S. P. Walker, Z. A. Bhutta, P. Christian, M. de Onis, M. Ezzati, et al. "Maternal and Child Undernutrition and Overweight in Low-Income and Middle-Income Countries," 427–51, 2013, with permission from Elsevier.
2. Only one other project (micronutrient deficiency control) mentioned adolescents as a target group.
3. Resolution 73/NQ-CP of the prime minister approved investments in 21 target programs from 2106 to 2020. The four previous health NTPs were consolidated into two target programs: one on health and population, including eight projects with a total implementation budget of D 20.4 trillion, and one on local health development, including three projects with a budget of D 22.5 trillion.
4. Including micronutrient supplements, multiple micronutrient powders, ready-to-use therapeutic foods, and other fortified foods according to availability of funding.
5. The incident of malaria is 18/100,000 and of mortality 0.003/100,000.
6. The name is derived from the recommended days for deworming of January 6 and June 1 (Vietnam Investment Review 2015).
7. See <https://thuvienphapluat.vn/van-ban/The-thao-Y-te/Quyết-dinh-1932-QĐ-BYT-huong-dan-tay-giun-duong-ruot-tai-cong-dong-2016-311914.aspx> (in Vietnamese).
8. Frequency depends not only on the severity of prevalence in the region, but also on the availability of funding.
9. See the following for models from the PEMC, Alive and Thrive, and World Vision: <https://www.youtube.com/watch?v=y14qqA1c8JM>, <https://www.aliveandthrive.org/resources/program-video-mat-troi-be-tho-franchise-model-in-viet-nam/>, <https://www.aliveandthrive.org/resources/program-video-iyfc-support-group-in-viet-nam/>, <https://www.wvi.org/child-health-now/vietnam-community-nutrition-clubs-proven-model-healthy-future>.
10. Only two of these provinces are in the central highlands; none are in the northern mountains.
11. In Vietnam, zinc deficiency affects 69.4 percent of children and 63.6 percent of women of childbearing age.
12. See <https://www.youtube.com/watch?v=lOukMpv98fg>.
13. See Vietnam.net (2018). The problems cited by the food industry groups in Vietnam have not been encountered in other countries, and no evidence has been presented on these difficulties.
14. An earlier study from Guatemala estimated that half are from intrauterine causes (Li et al. 2003).
15. All B vitamins are water soluble and thus require daily dosages because they are not stored in the body. Excess amounts are excreted in the urine.

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6 Nutrition-Sensitive Interventions and Approaches

Achieving sustainable nutrition security is fundamentally a challenge that requires, in addition to direct interventions, addressing the critical determinants of nutrition that reside across multiple sectors. Nutrition programs have traditionally focused on the delivery of nutrition-specific interventions—that is, those that target the immediate determinants of undernutrition and development such as inadequate food and nutrient intake—but global evidence has shown that nutrition-specific interventions alone cannot eliminate undernutrition. Scaling up 10 of the most effective nutrition-specific interventions to 90 percent coverage in the 34 countries with the majority of the global burden of stunting is expected to achieve only a 20 percent reduction in stunting prevalence (Bhutta et al. 2013). Thus multisectoral nutrition-sensitive approaches present an opportunity to also address the underlying and basic causes of malnutrition during the life course.

Multisector cooperation is a crucial component of the effective implementation of nutrition-sensitive activities and programs. In the current National Nutrition Strategy (NNS), the prime minister assigned the Ministry of Health (MOH) responsibility for working in collaboration with other ministries, sectors, and organizations, including international organizations, to provide guidance and develop, coordinate, and evaluate implementation of the NNS. Among other ministries and sectors at the central government level, nutrition focal units were designated to cooperate with the MOH to develop action plans to implement the NNS jointly. Many sectors and agencies integrated nutrition-sensitive interventions into their functional activities and National Target Programs (NTPs), including the Ministry of Education and Training (MOET), Ministry of Labor, Invalids, and Social Affairs (MOLISA), Ministry of Agriculture and Rural Development (MARD), Vietnam Women’s Union (VWU), Ho Chi Minh Communist Youth Union, Farmer’s Association, and Vietnam Federation of Labor.

NUTRITION-SENSITIVE PROGRAMS: MOH

The major goals and achievements of the health program are curative and preventive and include development of policies for better service quality, capacity building of staff at all levels, and enhancement of interventions for

nutrition, noncommunicable diseases, school health, vaccination, and medical products. Total spending from 2011 to 2015 was D 7,306 billion (about \$316.7 million), or 52 percent of the health budget.

Since Vietnam's ascension to middle-income designation, the health program has faced difficulties in mobilizing international funding because it is no longer eligible for the funding open to low-income countries. Meanwhile, despite its improved national economic status, the local budget for health has been limited, particularly in poor and mountainous provinces.

Population and family health services

Population and family health services can help limit population increases by reducing early pregnancies and lowering fertility rates. Birth spacing can reduce the incidence of maternal depletion syndrome,¹ which can lead to low birth-weight (LBW), anemia, prematurity, and greater neonatal mortality. This effect is found in high-, middle-, and low-income countries (Kozuki et al. 2013; Wendt et al. 2012) and may have particular relevance among some of the ethnic minorities in Vietnam, whose fertility rates are high.

Population and family health services organize behavior change communication (BCC) activities for population and family planning and promote family planning services, including diversification of contraceptives, reproductive health care, and family planning service delivery. Coverage of basic reproductive health care services has expanded at the district and commune level, particularly in lowland areas where the Kinh majority reside and where most population and family planning indicators have been reached or exceeded. Total spending on these services from 2011 to 2015 was D 4,354 billion (about \$188 million), or 44 percent of the health budget.

The effects of population and family health services has been considerably lower in mountainous, upland, and largely ethnic minority areas and among adolescents, youth, workers in industrial zones, and migrants, whose accessibility to population and family health services has remained low and unmet needs have remained high. Facilities, equipment, and human resources in district hospitals in many of these areas do not meet the demand for care and treatment of obstetric and neonatal emergencies. Thus access to and use of quality health care services before and after delivery in disadvantaged and ethnic minority areas are limited. The maternal mortality ratio and infant mortality rate are still high and declining slowly, and measures of stunting remain significantly higher than for the rest of the population.

Target Program on Health and Population

The Target Program on Health and Population includes interventions in the areas of infectious diseases and endemics, noncommunicable diseases, school health, food safety, HIV/AIDS, family planning, improved nutrition, and the health of elderly.² The program is managed by the MOH.

The main goals of this nationwide program from 2016 to 2020 are to complete 26 projects not implemented from 2011 to 2015 because of insufficient funding and to launch some new projects appropriate to the country's current context, giving priority to disadvantaged areas in the northern mountain, central highland, and southwestern regions. The priority given to some areas depends on component projects. This target program has eight projects: prevention of

dangerous infections and common noncommunicable diseases; expanded immunization; population and development (nutrition is one of its components); food safety; HIV/AIDS; blood transfusion safety; cooperation of residential and military medicine; and monitoring, supervision, and evaluation of program and health communication. The total budget is D 19,380 billion, including the state and local budget, lottery proceeds, and official development assistance.

School milk program

The goal of the school milk program is to increase the height of preschool and primary schoolchildren by 2020. The prime minister's Decision 1340/QĐ-TTg in 2016 ratified the program. Its main intervention is to promote daily milk consumption through policy development, education and communication, and technical assistance. The MOH manages the milk program in cooperation with the Ministry of Culture, Sports, and Tourism (MCST) and the MOET.

Resources for the program are mobilized from the private sector (20 percent), family and community contributions (50 percent), and local governments (30 percent). Few provinces have fully implemented the program because financial and human resources are limited, and technical guidelines for milk quality control are lacking. The exception is Nghe An, a poor province that receives donations from TH True Milk, a large dairy company that has a farm in the province.

Significant questions remain about the nutritional value of the program and its ability to achieve its goal of increasing the height of children because it is targeting children whose age exceeds the 1,000-day period when interventions are most effective.

NUTRITION-SENSITIVE PROGRAMS: MOLISA

National Target Program for Sustainable Poverty Reduction

The National Target Program for Sustainable Poverty Reduction (NTP-SPR) seeks to achieve the sustainable poverty reduction objectives that prevent poverty relapse by contributing to economic growth, guaranteeing social security benefits, increasing incomes (especially of people in poor regions), and facilitating access to basic social services.³ Through implementation of these interventions, the program is expected to contribute to achievement of the poverty reduction goal for 2016–20 under the National Assembly's resolution.

Managed by the MOLISA, this program targets poor households, nearly poor households, and households just above the poverty line nationwide. Poor households in ethnic minority areas and women in poor households are given priority. Additional targets include people and communities in poor districts and communes, in communes in extreme need because of natural disasters in alluvial and coastal regions and on islands or in safety zones, in border communes, and in ethnic minority and mountainous regions under decisions approved by the relevant authorities.

The major interventions of the program include investment in infrastructure—roads, health facilities, schools, water supplies, and irrigation systems—to encourage development of means of production and livelihood, income generation, vocational training, capacity building, and access to information.

The total budget for 2016–20 is D 48,397 billion: D 41,449 billion from the state, D 4,848 billion from local government, and D 2,100 billion from other sources. The program consists of Project 1 (Programme 30a—reinforced investment for poor districts), with four subprojects, and Project 2 (Programme 135—poverty reduction for poor communes), with five subprojects. The program has reinforced implementation of existing social policies that are nutrition-sensitive for poor and marginally poor households, such as health (insurance cards), education (tuition, fellowships, and boarding schools for ethnic minority students), favorable credit (such as for higher education, household water supply and latrine construction, or housing), electricity payments, agriculture and forestry promotion, production support, and poverty reduction.

NUTRITION-SENSITIVE PROGRAMS: MARD

National Target Program for New Rural Development

Managed by the MARD, the National Target Program for New Rural Development (NTP-NRD) aims to develop new rural areas in all communes to improve people’s material and spiritual lives. Doing this will require a socioeconomic infrastructure that integrates development of agriculture with industries and services that link rural with urban areas; a democratic and stable rural community that maintains its national and local cultural identity; a protected eco-environment; and maintenance of security and order.

The program has the following objectives: by 2020 half of all communes will meet the standards established for a developed community (28 percent in the northern mountainous area and 43 percent in central highlands), and an average of 15 criteria per commune will be met (13.8 in the northern mountainous area and 15.2 in the central highlands). Of 19 criteria, one on social culture and environment has specific indicators for reducing child stunting and achieving safe water and latrines, but there are no specific criteria for nutrition and, as noted earlier, no sense of the importance of nutrition for national development. The goals for 2016–20 are related to basic infrastructure, production promotion (restructured agriculture), environmental protection, and maintenance of safety and security. This program is being allocated D 193 trillion (D 63 trillion from the state budget and D 130 trillion from the local budget).

Zero Hunger

The National Program of Action on “Zero Hunger” is an important initiative to eliminate hunger in Vietnam. It supports the next socioeconomic development plan, especially the NTPs on sustainable stable poverty reduction and new rural development. The national steering committee for the “Zero Hunger” program in Vietnam for 2016–25 was established by Decision 804/QĐ-TTg on May 12, 2016, with the task of assisting the prime minister in directing plan development for the National Program of Action on “Zero Hunger” in Vietnam. Of the five pillars of the program, Pillar 2 is directed specifically at nutrition interventions, which will be integrated into the existing Target Program on Health and Population (but with no extra budget). Other interventions are temporarily integrated into current poverty reduction programs, sharing budget funds with central and local social welfare funding. More proposals for extra funding are being

developed in coordination with the MARD for the next phase of the program. Even though the whole program is not active, it is an opportunity to integrate nutrition-specific and nutrition-sensitive interventions into one holistic program.

Safe water and rural environment sanitation (WASH): MARD (rural water supply) and MOH (rural sanitation)

Total spending for this program for 2011–15 was D36,760 billion (about \$1.59 billion), of which 61 percent (D22,566 billion) was in the form of low-interest loans to families through the Vietnam Bank for Social Policies for construction of sanitary facilities.⁴ The program sought to increase target groups' access to and use of safe water, sanitation, and hygiene (WASH). However, the achievements have been modest. The 2014 Multiple Indicator Cluster Survey (MICS) revealed that 75.1 percent of households in ethnic minority communities (versus 94.8 percent in Kinh communities) used an improved source of drinking water (GSO and UNICEF 2015). This was an increase of 6.7 percentage points from the 2011 MICS (GSO 2011). The use of improved sanitation was not as high; 48.5 percent of ethnic minorities continued to use unimproved sanitation or no facility at all, whereas only 12.1 percent of Kinh households did so. Open defecation was still practiced in 26.8 percent of ethnic minority households (versus 2.4 percent of Kinh households) in the 2014 MICS, a number that was little changed from the 2011 MICS (27.7 percent).

The lack of separate latrines for boys and girls in secondary schools can contribute to adolescent girls dropping out of school once they reach menarche and have their first menstrual period. Lack of privacy and security, as well as embarrassment, can keep many of them home for the week of their menstrual period. They then miss a substantial number of school days and so fall irrevocably behind and drop out (Adukia 2017). MOET's nationwide school latrine design regulations have integrated UNICEF recommendations on separate latrines for boys and girls, which also accommodate the needs of children with disabilities (UNICEF 2015). A recent school survey of 52 schools in five provinces included Lao Cai, the only province in which the majority (54 percent) of those sampled came from ethnic minority communities. All 12 schools sampled from that province reported having separate toilets for girls and boys. The overall proportion of schools having separate toilets for boys and girls was 98 percent in the survey (Iyer, Azubuike, and Rolleston 2017).

NUTRITION-SENSITIVE PROGRAMS: MOET

Preschool education

Universal preschool education is a government priority. The MOET launched the preschool education program in 2009 and revised it in 2016 with clear definitions about the boarding scheme, especially diets appropriate to age groups. In its annual instruction to every school, it emphasizes the importance of healthy meals and quality of care in kindergarten and cites reduced malnutrition as a target of preschool education. A large project on promoting school readiness financed by an investment loan from the World Bank (2017) was aimed at raising school readiness for 5-year-old children, in particular those from ethnic minority groups most vulnerable to not succeeding in school. The project supported

selected elements of Vietnam's early childhood education (ECE) program from 2013 to 2017. The efficacy of the project's development objectives was rated as substantial. Indeed, the project played a significant role in increasing awareness of and support for ECE in communities and by the government. Government commitment and sustainability are high, as evidenced by the greater budget support for new ECE policies and the growing demand from parents.

Education for mountainous, ethnic minority, and disadvantaged areas

Managed by the MOET, this target program aims to invest in infrastructure for boarding schools for ethnic minority students, including through construction of kitchens and dining rooms. Its budget is D5,100 billion.

Follow-up is needed on this and other initiatives that have been put in policies to support the economic development of the northern midland and mountain provinces and whose interventions have a wide scope that are nutrition-sensitive. For example, Decision 27/2008/QĐ-TTg of February 5, 2008, proposed mechanisms and policies to support socioeconomic development in these provinces by 2010—and have an effect on nutrition-sensitive interventions. The expectation was that the target populations would be free of clinical or seasonal hunger, would enjoy universal lower secondary education by 2010, and would see an improvement in the learning and accommodations provided by boarding schools for ethnic minority pupils (Ha, Tuyen, and Truong 2016). It is not clear to what extent this policy was implemented, but it indicates that the government did have an interest in achieving improvements using an area approach.

SOCIAL WELFARE PROGRAMS FOR ETHNIC MINORITY GROUPS

For the period 2016–20, the government has issued many important policies for ethnic minorities and mountainous areas aimed at sustainably reducing poverty and improving living conditions. They include the NTP-NRD, NTP-SPR, and Programme 135 (P135).

The government has also issued many specific policies, such as a policy for 2016–20 to support socioeconomic development of ethnic minorities and mountainous areas; a project for 2016–20 to support the socioeconomic development of very small ethnic minority groups, which offers direct support for 12 ethnic minority groups in 93 communes of 12 provinces; and a policy to support students and schools in difficult communes by providing rice, meals, and boarding accommodations, among other things. In its mid-term planning, the government also allocated D6,000 billion for school infrastructure in ethnic minority regions. Other supportive policies have revolved around land allocation, production promotion, human resource development, job creation, favorable credit program, discouragement of early marriage, health insurance, and WASH.

Despite this considerable government investment in improving the conditions of these communities, as noted often in this report, the levels of childhood undernutrition have not fallen sufficiently or proportionately in ethnic minority communities. The reason is that some of these policies have not been implemented or, if implemented, not sustained if sufficient funds are not allocated (Ha, Tuyen,

and Truong 2016). Some policies require provincial or local government input to be implemented—a difficult requirement for ethnic minority areas where government revenues may be limited.

GAPS IN NUTRITION-SENSITIVE INTERVENTIONS

Multisectoral cooperation and coordination

Expanding the number of ministries and institutions involved in nutrition-sensitive interventions is justifiable. In addition to the ones interviewed for this survey—MOH, MOET, MOLISA, MARD, Committee for Ethnic Minority Affairs (CEMA), Institute of Social Science, VWU, Farmer’s Association, and Vietnam Youth Union—others manage components necessary for the advancement of any nutrition program. Examples are planning and investment, industry and trade, transport, construction, information and communications, science and technology, and natural resources and environment. Some of these ministries and institutes may not recognize their contributions to improving nutrition because their connection to traditional nutrition-specific interventions may be remote. But this, too, is a gap. This list reflects the broad scope of nutrition-sensitive interventions, but because of the difficulties in achieving full engagement of the present multisectoral partners in reducing malnutrition (or even mentioning nutrition in their objectives), structural changes should be considered, including reestablishment of central and provincial steering committees to facilitate motivation and accountability of all the sectors involved in reducing malnutrition.

Population and family health

This program’s successes in reducing inequities in nutrition nationwide have been highlighted more by observers than its shortcomings. The emphasis, however, should be on the latter. Reviews of the program do not mention the high fertility rates in some ethnic minorities, even though they can affect maternal deprivation syndrome, which leads to anemia, LBW, and higher mortality of infants, children, and women. Managing the fertility of specific ethnic minorities is a difficult, sensitive task that can be undertaken only with the understanding and voluntary cooperation of the ethnic minority communities themselves.

Agriculture

Using only food-based strategies to reduce malnutrition is not enough. Agricultural investments seem to be biased toward increasing the production and productivity of staple grains (especially rice), thereby undermining the potential of agriculture to deliver the diverse foods needed to reduce micronutrient deficiency and stunting in ethnic minority populations. Traditionally, food security in many East Asia and Pacific countries has been defined in terms of self-sufficiency in staple grains (primarily rice). And yet this approach is not only detrimental to staple food production within the country but also misaligned with shifting food demand and the need to produce greater quantities of nutrient-rich foods, including animal proteins, fruits, and vegetables. Indeed, rice-centric policies have failed to fully address the environmental, natural resource, nutrition, food safety, and food consumption considerations inherent

in feeding and providing growing, increasingly urbanized populations with adequate nutrition. Consequently, many projects claim to promote “nutrition-sensitive agriculture,” but the links between agriculture and improved nutrition are not strong. Since Đổi Mới, there has been tension between the conversion of land to monoculture cash crops to achieve economic development targets that will attract investors and the environmentally sustainable development of subsistence farmers in ethnic minority communities. This shift means that food security in ethnic minority households depends highly on the availability of cash to pay for seed, fertilizer, and food to feed the family—cash that many ethnic minority farmers may not have.

Persistent inequality in the face of pro-poor policies

The significant improvements in many health and nutrition (as well as economic) indicators in Vietnam have drawn international acclaim that tends to overshadow the equity concerns of some members of the government and the international community. Monetary poverty rates in some ethnic minority groups are as high as 61.5 percent, and multidimensional poverty is found in 81.1 percent of ethnic minority groups (UNICEF/UNFPA 2018). Economic and social inequity associated with many of the nutrition problems facing Vietnam (such as low birthweight, stunting, and disease rates) persists, despite numerous policies aimed at improving the welfare and nutrition of ethnic minorities.

Preschool education

Efforts to improve nutrition in preschool and reduce stunting should place more emphasis on children from 6 months to 2 years old. Although MOET has achieved universal preschool education for children under 5, this is not the age span covered by that program. The officer in charge of preschool education at MOET indicated that the program was initially mandated to reach children from 3 months to 6 years old, but for logistical and capacity reasons it covers children ages 3–6 years. During the critical years between a child’s first and third birthdays, there are few programmatic opportunities for parents to visit a caregiver from outside of the family—someone who could objectively monitor the child’s health and nutrition. This creates a gap in child development and nutritional monitoring and counseling that the preschool program could fill in part.

Such a shift would move emphasis to the crèche program for children from 3 months to 3 years old. During the discussions at the MOET, it was acknowledged that early childhood care and education (ECCE), although mandated to provide preschool education to children ages 3 months to 5 years, usually reached children from 3 to 5 years old. The period from 3 months to 3 years could be used to encourage and support prolongation of breastfeeding, emphasize appropriate stimulation of child development, teach nonviolent positive discipline, and detect neglected or physically abused children. This period would also offer an opportunity to monitor height. However, such monitoring would require identifying caretakers and teachers able to work with infants and toddlers and developing knowledge of public health nutrition in the crèche program.

Children of migrant workers who are extremely vulnerable to neglect could be cared for and monitored in an expanded preschool education program. It would require developing the capacity of caregivers to care for children living in these vulnerable environments.

Education and health—school milk, school meals

The school milk program may reflect a misunderstanding of the determinants of undernutrition, if that is the goal of the program. It misses the population of children under 2 years old who are most at risk of becoming stunted, as emphasized in the 1,000-day approach. (Children under 2 years old should be maintained through breastfeeding and complementary foods.) School milk programs can benefit educational performance, particularly if children are significantly undernourished, but improvements in stunting outside of the 1,000-day period are negligible. This applies as well to the nutrition supplements given to adolescent girls to enhance the adolescent growth spurt and their lack of effect on childhood undernutrition.

NRD and SPR

Nutrition is not mentioned as an outcome (or input) in the two NTPs, and tracking of critical nutrition indicators in ethnic minority provinces is not included in their monitoring system. This is a major gap and a missed opportunity because of the importance of these programs to the overall development of communities.

Education for mountainous, ethnic minority, and disadvantaged areas

More information on boarding schools is needed, including their locations (such as distance from home), whether boarding is just during the week or for the term, staffing, safety and security, potential for abuse, nutritional inputs, and the state of facilities (such as cleanliness and hygiene and privacy) because this is an important determinant of secondary school completion rates and one for which little information is provided. Unfortunately, boarding schools are often singled out as dangerous environments for children because of their association in specific cases with child abuse and neglect. More information and transparency could help remove that reputation.

Ethnic differentiation

The effect of “ethnic differentiation”—that is, unequal treatment due to ethnicity—is not widely acknowledged. Beginning with their early experiences in schools, ethnic minorities suffer from negative stereotypes (Chi 2009). Generalizations often assert that “ethnic minorities” are worse off than the majority Kinh population, while ignoring the significant differences between and even within ethnic minority groups.⁵ The difficulty is finding the data on these difficult-to-reach populations. Large-scale surveys cannot accurately capture the differences. The effect of ethnic differentiation should be considered a powerful factor in determining nutritional levels.

NOTES

1. A condition in which too-frequent pregnancies deplete many of the essential micro- and macronutrients needed for successful pregnancy.
2. One of 21 target programs in Vietnam.

3. However, nutrition is not listed as a basic social service.
4. As an example of funding sources, the breakdown of this figure is as follows: national government contribution, D3,625 billion; local government, D997 billion; international support, D6,579 billion; loans, D22,566 billion; other, D2,993 billion. Loans offered at low interest to families for construction of sanitation facilities are part of a program operated by the Vietnam Bank for Social Policies.
5. For example, although some ethnic groups promote child marriage, in others the elders actively discourage it and encourage girls to continue with their schooling. Meanwhile, adolescent marriage in the Kinh majority is overlooked (UNICEF and UNFPA 2018, 8).

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7 Conclusions and Recommendations

CONCLUSIONS

Despite achieving remarkable national improvements in poverty and nutrition outcomes, Vietnam lacks the uniform gains that would solve its growing ethnic inequities, especially those related to nutrition. The gap in stunting between its ethnic minorities and the majority Kinh increased from 14.3 percentage points in 2010 to 16.4 percentage points in 2015. This is a problem that is not only persisting but worsening and acting as a marker of inequities in nutrition and health care that affect ethnic minority women and children. The longer it persists, the more questions it raises for the government about the full extent of its achievements in other areas and the more questions it raises among ethnic minority families about their place in society. Meanwhile, this gap has served as the driving force for the government to identify the causes of inequity in its nutrition efforts at all levels.

Adequate nutrition in the first 1,000 days of life is the foundation for building the human capital required for Vietnam's ethnic minority population to compete in both the national and global economy. As Vietnam's economy has moved from a predominantly agricultural one to a mix of agriculture and technology, the requirements of the workforce have changed as well. Manual labor is still necessary but no longer enough. Needed are intelligent, highly educated, skilled workers. These characteristics depend on a healthy, well-nourished population. Although traditional economics saw the reduction of poverty as a precursor to nutrition and health, it is apparent that nutrition and health are also necessary for economic growth and a reduction in poverty. Deficiencies in the nutrition and health of Vietnam's ethnic minorities and their generally lower levels of education, lack of skills in the national language, and inability to migrate to jobs in urban centers have further hindered their ability to narrow the inequities, despite multiple government programs aimed at improving their health and nutrition and reducing their poverty.

The causes of malnutrition among ethnic minority populations are multisectoral. Malnutrition is an outcome of immediate, underlying, and basic causes. At the immediate level, nutritional status is ultimately determined by the availability of nutrients to the body to meet its requirements

and cope with illness. The underlying and basic causes are related to food security, maternal and child caring practices, water and sanitation, and personal hygiene. These determinants are heavily influenced by a host of inter-related causes including the social status of women, institutional and organizational factors, and economic as well environmental constraints. All key determinants of undernutrition are interacting to create the current situation among ethnic minority groups in Vietnam.

The multidimensional nature of the causes of malnutrition among ethnic minority groups calls for diverse actions across different sectors, ministries, and actors. Substantial global evidence has also shown that direct actions to address the immediate determinants of undernutrition (nutrition-specific) can be further enhanced by actions addressing the more distal or underlying determinants (nutrition-sensitive), which are the domains of ministries outside of the health sector. Multisectoral actions would strengthen nutritional outcomes in three main ways: (1) by accelerating action on the determinants of undernutrition; (2) by integrating nutrition considerations into programs in other sectors that may be substantially larger in scale; and (3) by increasing “policy coherence” through governmentwide attention to policies or strategies and trade-offs, which may have positive or unintended negative consequences for nutrition.

Currently, the programs that could have an impact on nutrition are fragmented, not implemented at scale, and not well coordinated, which means they are not fully effective. Moreover, the findings from this study suggest that the refusal (or reluctance) of ethnic minority groups to participate in the health system is related to internally derived constraints and externally created social exclusion. Many of the internally derived constraints are culturally based and have to do with constructs of a group’s identity that have evolved over generations, such as respect for the land, interpretation of natural events, and culturally evolved explanations of natural phenomenon that go beyond modern science. These beliefs are part of the culture and constrain family members’ behavior in order to maintain membership in that society. Communication challenges intensify the constraints so that they grow over time and widen the gap between the groups, leading to a loss of trust that is difficult to regain. These problems are at the heart of the basic determinants of child undernutrition.

Exacerbating these challenges is the absence of the routinely collected subnational, ethnicity-disaggregated nutrition data necessary for local decision making. At present, most decisions are made based on survey-collected data that may be up to five years old. These data are not system-sensitive enough to allow program managers to correct or revise programs to improve the results.

Tackling all these issues will require a policy environment that encourages and enables the necessary changes. Awareness at the policy level that the problem is serious may not be enough. Securing high-level leadership for nutrition in the form of nutrition champions, building strong and more coordinated partnerships with key sectors and stakeholders, as well as securing adequate financing for nutrition would all have to be assured.

The major systemic gaps that must be filled if Vietnam is to overcome its persistent undernutrition problems among ethnic minority communities are summarized in the following recommendations. They cover the entire spectrum—from national policy to institutional to operational.

RECOMMENDATIONS

Recommendations to address the gaps and opportunities identified throughout this report follow. Global experiences from countries that have successfully addressed childhood malnutrition such as Peru (see box 7.1) have also informed these recommendations.

These recommendations would benefit from further stakeholder consultations led by the government of Vietnam to determine the responsibility of its ministries and institutions, including short-, medium-, and long-term actions.

BOX 7.1

Peru's success story in reducing chronic undernutrition (stunting)

In 2000, more than one in three Peruvian children under the age of 5 was suffering from chronic malnutrition. These high levels of stunting remained virtually unchanged for the next eight years, during which they declined only 3 percentage points. From 2002 through 2010, Peru enjoyed 6.4 percent average annual economic growth, and hundreds of millions of dollars were invested in nutrition programs. Analyses confirmed the lack of correlation between the country's economic performance and fiscal spending and changes in undernutrition rates, but by 2014 stunting rates had decreased dramatically, to 14.6 percent in children under 5 years old. Although this prevalence was not as low as other nutrition indicators in the country (for example, underweight prevalence was 3.5 percent in 2013), the decrease reflected impressive improvements. In fact, it ranks among the most successful recent achievements in child nutrition in the world and could be attributed to three main factors.

First, Peru rallied strong political commitment and established a clear direction, expressed in measurable, time-bound goals. When Alan Garcia was elected president, he committed to the “5-by-5-by-5 goal” in his inaugural speech: reduce stunting by five points in five years for those under 5 years old. This ambitious yet feasible goal was turned into specific regional targets, and the government then focused on how to hit them.

Second, Peru adopted a multisectoral strategy supporting the demand and supply of nutrition services.

It empowered parents by providing them with information to make stunting and its consequences visible. In addition, the government leveraged the potential of conditional cash transfers to poor families through an existing conditional cash transfer program, Juntos. The goal was to reduce child malnutrition by strengthening incentives for families to take their children to nutrition and health service centers for growth promotion check-ups and early child stimulation. To respond to the increased demand, the government expanded maternal and child nutrition services and increased coverage of clean water and proper sanitation.

Third, the government used financing to produce results and targeted communities with the greatest need. Relying on results-based budgeting, the Ministry of Finance was able to ensure that demand and supply efforts worked together to achieve established nutrition goals through the evidence-based Articulated Nutrition Program. Each agency was held accountable for improving specific indicators, such as the number of poor children enrolled in the Juntos conditional cash transfer and the number of child growth check-ups and nutrition counseling sessions of poor families in the targeted communities.

Using this approach, Peru demonstrated that it was able to not only curb stunting rates, but also create strong commitment and collaboration across sectors to integrate nutrition into several sectoral programs and, in return, save millions of lives.

Source: Extracted from Marini and Arias 2016.

1. Nutrition leadership

High-level champions for nutrition

Recommendation: Identify, engage, and sustain high-level champions for nutrition at the national and provincial level. These champions should have convening powers and be able to enforce multisectoral nutrition convergence and accountability across government departments and interested development partners, especially in largely ethnic minority provinces.

The following actions by national and provincial nutrition stakeholders are needed to support this recommendation:

- Conduct stakeholder consultations to brainstorm potential champions and possibly classify them into categories such as decision makers (people with formal power or influence over nutrition policy and implementation, such as the prime minister and the deputy prime minister) or influencers (such as ethnic minority individuals with informal power or influence at local levels—for example, celebrities, sports persons, or traditional leaders)
- Develop a nutrition champion engagement plan to ensure strategic, long-term engagement that will be regularly monitored, evaluated, and updated. This will entail tailoring the engagement to match each champion’s seniority, influence, and platforms and ensuring that the plan specifies how to engage, support, and sustain the nutrition champions over time.

Nutrition champions are individuals who use their platforms and influence to position nutrition as a key political priority at the global, regional, national, and local level. They contribute toward raising awareness and changing negative attitudes and behaviors about nutrition and help foster collaboration. Although recognition of nutrition in critical policy documents and the existence of high-level food and nutrition committees indicate the government’s commitment to the food and nutrition agenda, the operationalization and functionality of these initiatives remain a challenge. At the moment, Vietnam lacks a high-level nutrition champion who will support the national nutrition agenda and lead resource mobilization efforts similar to those in countries that have succeeded in significantly reducing undernutrition, such as Peru and Senegal.

2. Policies

Effective multisectoral nutrition coordination and policy monitoring

Recommendation: Monitor the implementation of policies and regulations on nutrition through a high-level multisectoral nutrition steering committee, with a particular focus on coordinating and monitoring implementation of the following:

- Communist Party’s Resolution No. 20/2017/NQ-TW with stunting reduction as a specific objective
- Prime minister’s Directive 46/CT-TTg, dated December 21, 2017, on enhancing nutrition in the new context, including the request for inclusion of a stunting indicator in the Socio-Economic Development Plan at the national and subnational level
- Government Decree 100/2014/ND-CP on marketing and use of nutrition products for young children
- Government Decree 09/2016/ND-CP on food fortification.

Multisectoral interventions require high-level government ownership and leadership by entities that can monitor and enforce convergence across ministries and interested stakeholders. The strong global and domestic effort to address malnutrition had contributed to a proliferation of initiatives and stakeholders who sought to address the immediate and underlying determinants of malnutrition, but these efforts have been fragmented and lack focus. In the absence of strong government leadership and coordination, the stakeholders supporting policy development and program implementation tend to be driven by their institutional priorities. Thus a multistakeholder coordination platform for nutrition needs to be strengthened and given resources, strong government leadership, and a strong focus on ethnic minority regions and populations.

Financing for nutrition

Recommendation. Secure adequate domestic funding for target programs and expand social health insurance to cover expenses arising from nutrition emergencies.

The following advocacy actions by national and provincial nutrition stakeholders are needed to support this recommendation:

- Advocate fast-tracking government fund allocations for nutrition-specific and nutrition-sensitive interventions that take into account the existing enabling legal documents: the Communist Party’s Resolution No. 20/2017/NQ-TW; prime minister’s 2017 Directive 46/CT-TTg on enhancing nutrition in the new context; National Nutrition Strategy 2011–2020; and National Plan of Action for Nutrition 2017–2020
- Advocate direct government funding at the provincial level to augment national inflows for a comprehensive stunting reduction package of interventions applicable to women and children in largely ethnic minority provinces
- Advocate with the Ministry of Finance and other relevant ministries for nutrition benefit packages to include integrated management of acute malnutrition (IMAM) services, multiple micronutrient supplementation for pregnant women, and multimicronutrient powder for children that will be specifically operationalized under the National Target Program (NTP).

Better and more nutrition investments are needed to achieve human development and economic goals for vulnerable populations. The current level of resources at the national and provincial level has not been sufficient to deliver the government’s programs. Development partners have provided some resources, principally for nutrition-specific programs, and yet this support has not been sustained. Thus full coverage—nationally and specifically in the largely ethnic minority northern mountain and central highland regions—has not been achieved for almost any government and development partner programs. Sufficient domestic, donor, and private sector financing must be mobilized and made available, prioritizing interventions and programs with the greatest evidence of effectiveness.

3. Institutional

Stronger national and local institutions for improved nutrition programming

Recommendation: Build and strengthen national and local institutional capacities to deliver quality services at both the national and provincial level—with a special focus on ethnic minority provinces.

The following actions are needed to support this recommendation:

- Conduct a comprehensive assessment of nutrition capacity in Vietnam to guide efficient use of capacity-building resources
- Develop a competency-based capacity strategy for frontline workers in key sectors that incorporates nutrition-specific and nutrition-sensitive components
- Conduct in-service training and retraining of frontline service providers at the provincial through the commune level to deliver quality nutrition and nutrition-related services
- Review (and revise) the job descriptions of doctors, nurses, and midwives in primary health facilities (and extension workers in key sectors) to include important nutrition functions
- Increase the focus on implementing nutrition research and conducting rigorous program evaluations to improve service delivery in the ethnic minority contexts.

Institutional strengthening will be fundamental to achieving quality nutrition-specific and nutrition-sensitive services—delivered at scale—especially in the context of ethnic minority areas, where language and cultural differences are pervasive. Nutrition training and capacity building for frontline service providers are needed to maximize the investment that the government of Vietnam has made in the public sector. Stronger human resource management and supportive supervision are needed to support the skills (especially social behavior change communication, interpersonal communication, and qualitative research techniques) and ambitions of trained professionals, particularly at the lower levels. These skills, especially in community-based participatory research, have been found to be effective in reestablishing trust and cooperation between communities and strengthening lines of communication to improve mutual understanding and participation, both missing from many communities.

4. Operational

Enhanced engagement of ethnic minority communities

Recommendation: Empower ethnic minority families and communities with the knowledge and resources necessary to demand quality health and nutrition services and strengthen community-based platforms and institutions to support maternal nutrition and infant and young child feeding.

The following actions are needed to support this recommendation:

- Replace the one-size-fits-all approach to ethnic minority service delivery with more innovative ethnically responsive approaches
- Strengthen existing community platforms and groups for community knowledge sharing and conduct of health- and nutrition-related social behavior change and communication
- Establish community-based growth monitoring and promotion activities focused on children under 5 years old.

Families and their communities form the backbone of ethnic minority societies. Thus widespread improvements in nutritional status will be difficult without engaging the ethnic minority communities. Communities require support to reduce the normalcy of stunting, gain knowledge of malnutrition, and define solutions, building on existing community institutions. Appropriately crafted messages must reach communities through a variety of existing local

channels, supported by a cadre of motivated frontline workers and paraprofessionals who can facilitate the process of defining barriers and solutions.

Geographic convergence of critical sectors

Recommendation: Establish a geographic convergence of critical sectors in the ethnic minority provinces down to the household level that focuses on delivering a basic nutrition package to pregnant and lactating women and children younger than 2.

The geographic convergence of critical nutrition-specific and nutrition-sensitive programs in ethnic minority communities and implemented by ministries and groups would include the Ministry of Health (MOH); Ministry of Education and Training; Ministry of Agriculture and Rural Development (MARD); Ministry of Labor, Invalids, and Social Affairs; Committee for Ethnic Minority Affairs; and Vietnam Women's Union. These entities would ensure that sector interventions in agriculture; education; health and nutrition; social protection; water, sanitation, and hygiene (WASH); and poverty reduction, although delivered in parallel, reach the same households to maximize their contribution to reducing stunting. To ensure the uptake of services, it is critical to support the supply of and demand for these interventions.

Data collection and monitoring and evaluation

Recommendation: Ensure the availability of subnational, ethnicity-disaggregated nutrition and nutrition-related data for targeted policy advice and interventions.

Data for critical nutrition indicators have not been disaggregated by ethnic minority group in some of the major surveys, which leads to generalizations and inefficient use of resources, thereby missing the needs of some groups and providing unnecessary support to others. For example, in the Multiple Indicator Cluster Survey (MICS) data, most indicators are disaggregated by location, educational level, and economic quintile, with ethnicity as an added, separate category. Moreover, for important categories of micronutrients such as iron and vitamin A, food consumption, and nutritive value, disaggregation is by ecological region, poor versus nonpoor communes, or urban versus rural distinctions. Although these are important categories, they do not accurately describe the equity gap between majority and minority ethnic groups. Disaggregated data are essential to better inform policy makers, program managers, and practitioners so they can be held accountable, identify bottlenecks, and demonstrate progress.

Sectoral programs

Specific nutrition interventions

Recommendation: Define and then scale up the delivery of a comprehensive package of evidence-based, high-impact nutrition interventions (see box 7.2) focused on the first 1,000-day window of opportunity in ethnic minority provinces with the highest burden of malnutrition.

The following actions are needed to support this recommendation:

- Adopt an evidence-based package of nutrition-specific interventions that can be made available to each ethnic minority household in all priority provinces with a high stunting rate

- Formulate a comprehensive social behavior change communication strategy for nutritional improvement that can guide campaigns, media, and community educational materials and events to improve the nutrition of women and children from ethnic minority population groups
- Deliver mass media campaigns focusing on optimum child growth and nutrition in the first 1,000 days
- Produce written and audiovisual materials to help community health workers counsel women during antenatal care visits and on immunization days about improving their own and their children's nutrition and their personal and environmental hygiene
- Review the cost-effectiveness of ready-to-use therapeutic food (RUTF) for moderately and severely undernourished children as part of the social health insurance package.

Substantial progress has been made in developing policies and strategies for an integrated approach to nutrition, but an evidence-based package of nutrition-specific interventions needs to be defined and made available to all ethnic minority populations through the government's primary health care service. Specifically, the Ministry of Health needs to focus on achieving full coverage of the 10 evidence-based interventions recommended in the 2013 *Lancet* series on maternal and child nutrition, which if expanded to 90 percent coverage, could possibly reduce stunting by 20 percent (Bhutta et al. 2013). Establishing and strengthening the community-based and, where possible, community-driven delivery platforms for these interventions could accelerate attainment of higher coverage. Where new delivery platforms are needed (such as targeting nonpregnant women and adolescent girls with iron-folic acid supplements), these should be rapidly pilot tested and expanded.

National Target Programs (NTP-NRD and NTP-SPR)

Recommendation: Explicitly identify nutrition (childhood stunting) in ethnic minority populations as a priority, along with specific targets and reporting mechanisms, and earmark expenditures for National Target Program (NTP)

BOX 7.2

Nutrition-specific interventions with evidence of effectiveness recommended in *Lancet* nutrition series

Before conception

Preconception folic acid supplementation and fortification of key food commodities

Pregnancy

Maternal multiple micronutrient supplementation
 Maternal balanced energy and protein supplementation
 Maternal calcium supplementation

Early infancy and young childhood

Promotion of breastfeeding
 Social behavior change communication for improved complementary feeding and hygiene practices
 Vitamin A supplementation
 Preventative zinc supplementation
 Management and treatment of moderate and severe acute malnutrition
 Multiple micronutrient supplementation

Source: Bhutta et al. 2013.

activities supporting nutrition, which currently are at the discretion of planners.

The intended outcome would be to encourage local governments to spend more on nutrition-sensitive interventions than just infrastructure, as has been the case. As the country's principal poverty programs, the National Target Program for New Rural Development (NTP-NRD) and the National Target Program for Sustainable Poverty Reduction (NTP-SPR) should give some priority to nutrition, especially in ethnic minority communes.

Agriculture sector

Recommendation: Design nutrition-sensitive programs and actions aimed at improving dietary quality by increasing the demand for and production and market availability of diverse nutrient-rich foods, especially animal source foods, vegetables, and fruits, while ensuring their safety from contaminants such as aflatoxins.

The following actions are needed to support this recommendation:

- Build value chains and increase the market availability of nutrient-rich foods in ethnic minority provinces
- Target women with inputs and access to productive resources, promoting labor-saving technologies
- Reorient agriculture policies, subsidies, and research to support horticultural and livestock production
- Deliver messages on dietary diversity to stimulate demand for nutritious foods and increase household consumption of diverse food
- Establish a partnership between the Ministry of Agriculture and Rural Development and the Ministry of Health on testing and control of aflatoxins.

This recommendation may require rethinking how price, income, and other agricultural support can be shifted away from producing staple grains (rice) and to prioritization of nutrition-sensitive, climate-smart agriculture aimed at eradicating poverty and food insecurity. Additional activities to improve post-harvest handling and storage would increase food security and lessen exposure to aflatoxins. In the design of nutrition-sensitive agriculture programs, stronger links between agricultural activities and nutrition outcomes need to be defined and measured, as well as intermediate outcomes related to food group consumption, dietary diversity, household expenditures, and women's empowerment.

Health sector

Recommendation: Expand access to a comprehensive package of adolescent, maternal, and child health services that are sensitive to the cultural beliefs and practices of ethnic minority populations.

The following actions are needed to support this recommendation:

- Develop and pilot platforms to reach adolescent girls with reproductive health information and services for these girls
- Expand access to culturally appropriate health and family planning services and counseling.

Although health inputs such as facilities and the health services workforce have improved over the past decade nationally, coverage of essential health services remains low in ethnic minority areas. Demand generation and outreach

are needed to stimulate consumption of health services, and additional incentives and performance-based management can help improve service delivery. Specific recommendations include expanding reproductive health and family planning services to ensure universal coverage, with particular emphasis on girls who are not in school, and increasing the emphasis on adolescent health by working with young people to expand education and services in sexual and reproductive health for adolescent boys and girls and to explore alternatives to marriage and childbearing for vulnerable girls who are not in school.

Education sector

Education services that can be nutrition-sensitive extend from preprimary education through secondary education. In early childhood development, the focus should be on identifying effective institutional- and community-based platforms for parenting education (including early stimulation and nutrition) and early learning, expanding coverage to reach younger children in crèches as well as early childhood centers.

In primary school, a rigorous review of the school meal program is needed to better understand its effectiveness and potential in ethnic minority populations, not only from a food security and social inclusion perspective, but also as a social transfer benefit and mechanism for keeping girls in school.

School-based deworming can and should be rapidly introduced and expanded, along with access to WASH and gender-specific latrines in each school and weekly iron and folic acid supplementation for girls. Links should be established with the WASH sector to guarantee adequate boys' and girls' latrines in every upper secondary school (including semiboarding schools) in ethnic minority regions. In addition, integration of personal hygiene, nutrition, and reproductive health into the school curriculum is needed to educate children early so they form good habits.

Finally, over the medium to long term, programs should be explored that can encourage girls' completion of secondary school. Meanwhile, supportive tutorial services should be provided in ethnic minority regions in lower secondary school to increase upper secondary entry and retention, particularly for girls.

The following specific activities can also be pursued:

- Review the school milk and meal programs to assess their nutritional effect
- Pilot delivery of holistic early childhood development and parenting programs
- Review and expand delivery and quality of nutrition and reproductive health curricula in schools
- Work with the Ministry of Health to create a comprehensive life skills education course as part of the school curriculum, with greater access to contraceptives. Also, intensify efforts to identify girls who are not attending upper secondary school or who have dropped out and design reentry strategies for school dropouts.

WASH sector

Recommendation: Increase access to clean water, sanitation facilities, and the hygiene promotion services of ethnic minority populations and link criteria in the NTP-NRD for safe water and latrines specifically to better child nutritional outcomes.

The following actions are needed to support this recommendation:

- Expand community-wide sanitation interventions and integrate them into existing nutrition programs to support stunting reduction in ethnic minority populations
- Propose policies and interventions that focus on communitywide behavioral change and outcomes rather than on individual household investments in improved sanitation
- Strengthen the 17th criterion on sanitation under the NTP-NRD so that government targets and incentives go beyond ending open defecation and focus on universal, community-level access to improved sanitation
- Have local authorities pay more attention to “soft activities” such as social behavior change communication related to environmental and personal hygiene that have not received sufficient attention and priority and consequently have limited budgetary allocations.

In addition to handwashing with soap, environmental sanitation improved by reducing open defecation, constructing and using improved sanitation facilities, using clean water, and reducing water pollution can significantly reduce stunting. Because many of the practices of ethnic communities have a cultural history, that history must be understood before behavior can be changed.

Social protection sector

The social protection sector is responsible for providing social safety nets and protective measures for the most nutritionally vulnerable. Cash transfers to vulnerable groups can be nutrition-sensitive through spending for food for children and pregnant women.

The following actions are needed to support the nutrition sensitization of this sector:

- Review the existing cash transfer program (under Decree 136 for social assistance) for nutrition impacts on orphans
- Expand the cash transfer program for children under 3 and pregnant women to ensure full coverage of the poorest ethnic minority families with pregnant women and infants and young children during the critical 1,000-day window of opportunity.

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ECO-AUDIT

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Because malnutrition in early life significantly affects the physical and mental development of children, addressing malnutrition is fundamental to the development of Vietnam's human capital. Economic development of the nation depends on the strength, resilience, and intelligence of its workforce. Governments dedicate millions of dollars annually to health and education, recognizing that individual losses in productivity may run as high as 10 percent of lifetime earnings and that as much as 11 percent of GDP could be lost each year in Asia and Africa due to undernutrition.

The ethnic minority groups living mainly in the northern midlands and in the mountainous and central highlands regions are consistently more undernourished than the Kinh majority. Despite decreases in stunting, the prevalence of stunting among ethnic minority children is still twice that in the Kinh ethnic group. There has been an overall decline in wasting of 1.7 percent between 2000 and 2011, although only the richest quintile showed a significant reduction (3.4 percent). These data, along with an overall decrease in the prevalence of wasting and stunting, indicate an increase in nutrition inequality between 2000 and 2011. Moreover, it is noteworthy that the ethnic minority groups constitute the majority of the undernourished populations in most of the 10 provinces with the highest rates of stunting among children under 5 years old.

This analytical report describes the very high rates of malnutrition among ethnic minority populations in Vietnam. It assesses the determinants and causes, using a causal framework and systems analysis; reviews current commitments and policies directed at reducing disparities in malnutrition; examines implementation of nutrition-specific and nutrition-sensitive interventions, particularly those that require multisectoral coordination and collaboration; draws conclusions based on the analysis; and recommends how policies and programs can be strengthened to reduce inequities and fulfill the economic potential of all ethnic groups.



ISBN 978-1-4648-1432-7



SKU 211432