

ADDRESSING NUTRITION SECURITY IN URBAN INDIA THROUGH MULTISECTORAL ACTION

Sundararajan Srinivasa Gopalan, Rajesh Bhatia, Sonalini Khetrapal, and Sungsup Ra

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ABSTRACT

Nutrition is essential for ensuring healthy communities. United Nations have sounded a call to eliminate hunger through the Sustainable Development Goals. The United Nations Decade of Action on Nutrition (2016–2025) advocates universality of food and nutrition security. Globally, birth weights are well below those required to achieve the UN 2025 target. The World Health Organization has set targets on various aspects of nutrition, most of which remain underachieved in developing countries. In India, every third child continues to be undernourished.

Globally, birth weights are well below those required to achieve the 2025 target. In India, every third child continues to be undernourished. A correlation exists between undernutrition rates with lower education rates and poverty. The urban poor, in particular, remain highly vulnerable.

No country is on track to achieve the adult obesity and anemia target in the Sustainable Development Goals, thus predisposing populations to hypertension, obesity, and diabetes; and adding to the growing number of people with these noncommunicable diseases.

India's National Nutrition Strategy and National Mission on Nutrition (POSHAN Abhiyan) are recent initiatives of the government that complement several existing schemes. To address this daunting task, several recommendations are proposed in this paper to institute required interventions.

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The authors wish to thank Vandana Gurnani, Additional Secretary and Mission Director (National Health Mission); Preeti Pant, Joint Secretary (National Urban Health Mission); and their team of experts in nutrition in the Ministry of Health and Family Welfare for their constant guidance, support, and constructive review of this paper.

ABBREVIATIONS

ASHA	accredited social health activists
AWC	<i>anganwadi</i> center
BMI	body mass index
COVID-19	coronavirus disease
FAO	Food and Agriculture Organization of the United Nations
HWCs	health and wellness centers
ICDS	Integrated Child Development Services
ICT	information and communication technology
NCD	noncommunicable diseases
NFHS	National Family Health Survey
NGOs	nongovernment organizations
NITI	National Institute for Transformation of India
NUHM	National Urban Health Mission
SAM	Severe acute malnutrition
SDG	Sustainable Development Goals
STEPS	WHO STEPwise approach to Surveillance
ULB	urban local body
UN	United Nations
UNICEF	United Nations Children's Fund
WASH	Water, sanitation and hygiene
WHO	World Health Organization

I. OBJECTIVE AND METHODOLOGY

This paper provides available evidence-based data on urban nutrition in India to contribute to India's National Urban Health Mission (NUHM) supported by the Asian Development Bank (ADB). Based on a review of literature comprising published studies, government policies and strategies, publications of international organizations, and other relevant reports and documents, the paper prescribes multisectoral interventions to mitigate malnutrition among the Indian urban population. This multisectoral perspective goes beyond the health sector, taking account issues on water supply, sanitation, sociocultural factors, food supply, etc.

The paper covers malnutrition (undernutrition as well as overnutrition), its impact, determinants or causes, and solutions. It describes the problem's impact on health and nonhealth sectors, identifies key determinants of malnutrition, and suggests specific solutions that can be practically applied as appropriate to the local contexts in the various urban areas of India.

II. GLOBAL KNOWLEDGE ON ADDRESSING MALNUTRITION

A. 2020 Global Food Policy Report

The 2020 Global Food Policy Report of the International Food Policy Research Institute (International Food Policy Research Institute 2020) has a special focus on improving the food system¹ for food security and nutrition especially in low- and middle-income countries. The report observed how India is supporting its Aspirational Districts Program, which aims to change the narrative from “backward” districts to “aspirational” districts, with emphasis on using data and evidence to support and nudge districts to close gaps in implementation. By ranking districts based on changes in selected nutrition, health, education, and economic outcomes, the Aspirational Districts Program aims to use competition and innovation to improve governance and program implementation in 112 districts.

B. World Health Assembly

The World Health Assembly in its 65th session in 2014 set the following global targets for 2025 (World Health Organization 2014):

- Achieve a 40% reduction in the number of children under five who are stunted.
- Achieve a 50% reduction of anemia in women of reproductive age.
- Achieve a 30% reduction in low birth weight.
- Ensure that there is no increase in childhood overweight.
- Increase the rate of exclusive breastfeeding in the first 6 months up to at least 50%.
- Reduce and maintain childhood wasting to less than 5%.

¹ Food systems are the sum of actors and interactions along the food value chain—from input supply and production of crops, livestock, fish, and other agricultural commodities to transportation, processing, retailing, wholesaling, and preparation of foods to consumption and disposal. Food systems also include the enabling policy environments and cultural norms around food.

C. The Global Nutrition Report

The Global Nutrition Report (2020) of the World Health Organization (WHO) observed that there has been some progress in reducing malnutrition, but this has been too slow and has not spread across all forms of malnutrition. In particular:

- (i) ***A malnutrition epidemic is sweeping the world that is causing severe health, economic, and environmental burdens.*** The Sustainable Development Goals (SDGs) have sounded a call to eliminate hunger to which a global commitment has been made that “leaves-no-one-behind” and provides a vision of a world free from malnutrition in all forms. To take forward the vision enunciated in the SDGs, the United Nations (UN) Decade of Action on Nutrition (2016–2025) is being observed to ensure universality of food and nutrition security. Ten global nutrition targets for 2025 have been formulated, which are called maternal, infant, and young child nutrition targets; and diet-related noncommunicable disease (NCD) targets. These include low birth weight, stunting, wasting, overweight in children under 5 years of age, anemia in women of reproductive age, and exclusive breastfeeding. The NCD indicators in adults include salt intake, raised blood pressure, diabetes, and obesity.
- (ii) ***There is slow progress in meeting global nutrition targets.*** No country is on course to meet all 10 targets, and only four targets are likely to be met by only eight of 194 countries. The coronavirus disease (COVID-19) pandemic has further shown greater vulnerability of undernourished people because of their weak capacity to mount an effective immune response against SARS-CoV-2. The highest mortality in COVID-19 has been observed among people with metabolic comorbidities especially diabetes mellitus.
- (iii) ***Significant progress in reducing hunger has been achieved in the past decades; however, progress has since slowed or even reversed.*** In 2018, 820 million people worldwide were hungry or undernourished, especially in Africa, Latin America, and West Asia (FAO et al. 2019).
- (iv) ***It is obvious that progress toward meeting the 2025 nutrition targets is insufficient.*** Among children under 5 years of age, 149.0 million are stunted (54.8% of these reside in Asia), 49.5 million are wasted, and 40.1 million are overweight. There are 677.6 million obese adults. While one of every five children in the world is stunted, the continuous increase in the number of people with obesity or overweight is a major cause of concern. Underweight rates are 10 times higher in resource-poor countries compared to developed countries. The prevalence of overweight and obesity is five times higher in developed nations.
- (v) ***Childhood and adolescent underweight has decreased globally.*** From 37.0% in 2000, underweight has gone down to 31.6% in 2016 among boys, and from 29.6% in 2000 to 25.9% in 2016 among girls. During the same period, overweight has increased from 10.3% to 19.2% among boys, and 10.3% to 17.5% among girls; while obesity has gone up from 3.3% to 7.8% among boys, and 2.5% to 5.6% among girls.
- (vi) ***Malnutrition needs to be addressed in all its forms.*** Improved data are enabling us to better understand what people are eating and why it matters, but diets in all countries and wealth groups pose a significant threat to achieving nutrition targets.
- (vii) ***Globally, birth weights are well below those required to achieve the 2025 target.*** Around 20.5 million newborns (14.6%) have low birth weight, and only 42.2% of infants under 6 months are being exclusively breastfed. Infant and young child feeding practices remain poor. Fewer than one in five (18.9%) children eat a minimum acceptable diet. In most of the countries, children living in rural areas (35.6%) have higher stunting rates than those living in urban areas (25.6%).

- (viii) **No country is on track to achieve the adult obesity and anemia target.** Even as programmatic funding and approach are inadequate, the COVID-19 pandemic has further diverted all efforts and resources from nonpandemic activities. According to the National Family Health Survey (NFHS)-4, 2015-16, the prevalence of anemia among women in India aged 15–49 years was 53%, and among adolescent girls aged 15–19 years was 54%.
- (ix) **Hypertension, obesity, and diabetes afflict a sizeable number worldwide.** Globally, 1.13 billion (22.1%) adults suffer from hypertension; 677.6 million adults (including 393.5 million women) are obese; and diabetes affects 422.1 million. Average salt intake among adults has been virtually unchanged since 2010. Men and women take almost the same quantity of salt per day at 5.8 grams per day for men and 5.3 grams per day for women.
- (x) **The impact of COVID-19 on malnutrition needs to be analyzed and addressed appropriately to prevent malnutrition from worsening.** Healthy diet policies and programs are effective and well known but require greater application and reach.
- (xi) **The world is paying more attention to the importance of improving nutrition among adolescents, but their diets warrant greater focus.** Adolescent girls remain particularly vulnerable to malnutrition during this stage of their lifecycle due to higher iron needs, early marriages that can lead to early pregnancies, and increased susceptibility to obesity. Nutrient needs increase in adolescence to meet the demands of pubertal growth and brain maturation. A growing body of international evidence shows that addressing nutrition problems and adopting healthy dietary habits during adolescence can be important for potential “catch up” growth, improved cognition, and reduced risk of noncommunicable diseases (NCDs) later in life.
- (xii) **While data is ever improving, some basic gaps remain.** Many countries do not yet collect the necessary data to fully understand the nature of the burden of malnutrition, diet, or indicators of progress. There is also a significant gap around micronutrients. We do not know the full profile of micronutrient deficiencies across populations in the world, but we do know that individual deficiencies rarely occur in isolation. There is limited knowledge on the overlaps with other forms of malnutrition, and the consequences for health and disease.

D. Status of Malnutrition in Urban India

Selected key nutrition indicators for India, disaggregated by urban and rural areas, are shown in Table 1 and Figures 1–4. The following key observations emerge:

- (i) **Every third child in India is undernourished.** Per the NFHS-4, 2015-16, every third child in India is underweight or stunted, and 21% of children under 5 years are wasted (International Institute for Population Sciences and ICF 2017). Moreover, every second child is anemic. Common manifestations of malnutrition are protein-calorie malnutrition, and micronutrient deficiencies.
- (ii) **Partial improvements.** From 2005/06 to 2015/16, some measures of undernutrition have come down (e.g., prevalence of stunting, underweight among under-five children, women’s undernutrition as measured by BMI and by anemia, and men’s anemia rates). However, this is not the case for some indicators (e.g., wasting rates among under-five children seem to have actually worsened, though only marginally; women’s overweight rates have gone up, with a clearly alarming problem developing among the urban women; and overweight and obesity rates among men have gone up).

- (iii) ***In spite of significant improvement, the targets remain at low levels.*** This is cause for serious concern, to the extent that childhood and maternal malnutrition continue to be public health problems (particularly the under-five stunting prevalence of 38.4% and underweight prevalence of 35.8%; as well as anemia prevalence among 58.6% of under-five children, among 53.1% of women, and in 50.4% of pregnant women).
- (vi) ***Undernutrition rates in urban areas are slightly lower than those in rural areas but far from acceptable.*** In the urban populations, 31% of under-five children are stunted, 29.1% are underweight, and 20% are wasted. Similarly, anemia prevalence in the urban population is also high at 56% among under-five children, 50.8% among women, and 45.8% among pregnant women.
- (v) ***Childhood immunization rates have improved but there is still considerable room for improvement.*** Childhood immunization rates have improved from 44% to 62% nationally, and from 58% to 64% among the urban population. Immunization rates are significant in the context of nutrition, as childhood infections contribute to higher rates of undernutrition.
- (vi) ***Undernutrition rates, measured by stunting or underweight, are strongly correlated with lower education rates and poverty.*** It is important to note that even in the highest wealth quintile, 22% of under-five children are stunted, and 20% are underweight. This shows that while poverty is one of the determinants of undernutrition, it is not the only factor, and a careful analysis will show other important causes that need to be addressed, such as household behaviors like eating, feeding and caring practices, access to health services, and personal hygiene and environmental sanitation, which are all affected by sociocultural factors.

The impact of malnutrition can become catastrophic when malnourished individuals live in a polluted environment with unsafe water and poor sanitation and living conditions. Both communicable diseases and NCDs are prevalent among the urban poor. In the poorer segments of society, it is not uncommon to find overweight and obese adults living with underweight children, amid widespread micronutrient deficiencies.

The National Institute of Nutrition (National Institute of Nutrition 2017) has found the prevalence of stunting among urban under-five children to be highest in Uttar Pradesh (close to 41%), followed by Maharashtra (36.4%), New Delhi (35.7%), and West Bengal (34.4%). The National Institute of Nutrition also found that the intake of green leafy vegetables, milk and milk products, and sugar and jaggery was lower than the level recommended by the Indian Council of Medical Research. Only half of the population within the 1–3-year-old bracket (56%), two-thirds (68%) of the population of 4–6-year-old children, and half of the population of pregnant women (56%) were consuming adequate amounts of protein and calories. Per the NFHS-4, 2015-16, 42% of mother-initiated breast feeding occurred within the first hour of delivery; and one-fourth of the mothers fed infants prelacteal feeds like honey, glucose or sugar water, or goat milk immediately after birth. The prevalence of hypertension was found to be 31% among urban men and 26% for women, being highest in Kerala (31%–39%) and lowest in Bihar (16%–22%).

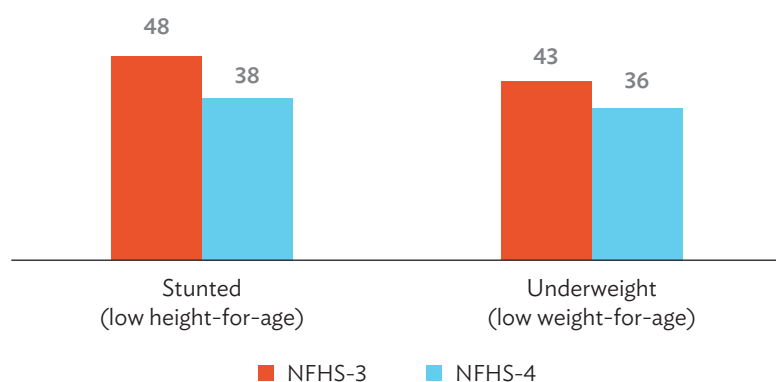
Table 1: Nutrition Indicators for India (%)

Indicator	NFHS 2015/16			NFHS 2005/06
	Urban	Rural	Total	Total
Child Nutrition				
Children under 5 years who are stunted (height-for-age)	31.0	41.2	38.4	48.0
Under-five children who are underweight (weight-for-age)	29.1	38.3	35.8	42.5
Children under 5 years who are wasted (weight-for-height)	20.0	21.5	21.0	19.8
Children under 5 years who are severely wasted (weight-for-height)	7.5	7.4	7.5	6.4
Children aged 6–59 months who are anemic	56.0	59.5	58.6	69.4
Children who received Vitamin A supplementation in the last 6 months	62.9	59.1	60.2	16.5
Children under age 3 years breastfed within 1 hour of birth	42.8	41.1	41.6	23.4
Children under age 6 months exclusively breastfed	52.1	55.9	54.9	46.4
Children aged 6–8 months receiving solid or semisolid food and breastmilk	50.1	39.9	42.7	52.6
Breastfed children aged 6–23 months receiving an adequate diet	10.1	8.2	8.7	N/A
Nonbreastfed children aged 6–23 months receiving an adequate diet	16.9	12.7	14.3	N/A
Total children aged 6–23 months receiving an adequate diet	11.6	8.8	9.6	N/A
Adult Nutrition				
Women whose BMI is below normal (BMI < 18.5 kg/m ²)	15.5	26.7	22.9	35.5
Men whose Body Mass Index (BMI) is below normal (BMI < 18.5 kg/m ²)	15.4	23.0	20.2	34.2
Women who are overweight or obese (BMI ≥ 25.0 kg/m ²)	31.3	15.0	20.6	12.6
Men who are overweight or obese (BMI ≥ 25.0 kg/m ²)	26.6	14.3	18.9	9.3
Nonpregnant women aged 15–49 years who are anemic	51.0	54.4	53.2	55.2
Pregnant women aged 15–49 years who are anemic	45.8	52.2	50.4	57.9
All women aged 15–49 years who are anemic	50.8	54.3	53.1	55.3
Men aged 15–49 years who are anemic	18.5	25.3	22.7	24.2

kg/m² = kilograms per square meter, BMI = body mass index, NFHS = National Family Health Survey.

Source: International Institute for Population Sciences and ICF. 2017. *National Family Health Survey (NFHS-4), 2015-16: India*. Mumbai.

Figure 1: Trends in Children's Nutritional Status in India (%)

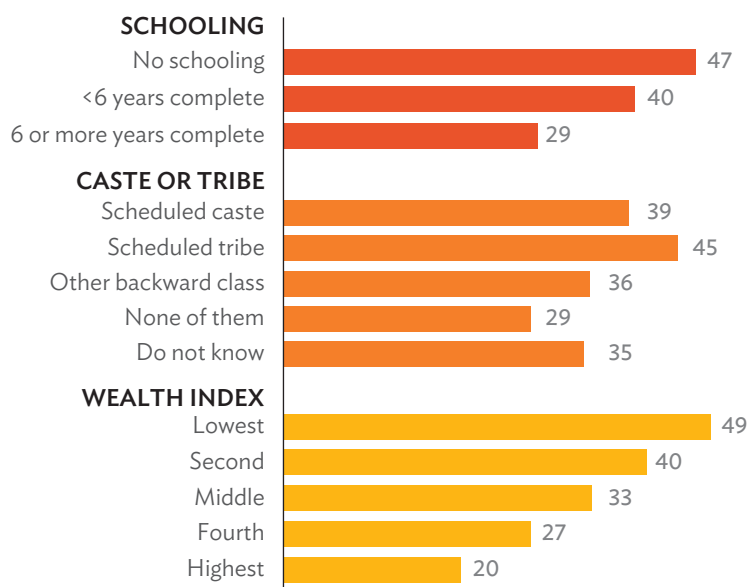


NFHS = National Family Health Survey.

Note: Nutritional status estimates are for children under 5 years, and are based on the 2006 World Health Organization International Reference Population.

Source: International Institute for Population Sciences and ICF. 2017. *National Family Health Survey (NFHS-4), 2015-16: India*. Mumbai.

Figure 2: Children’s Nutritional Status (Underweight) by Education, Caste, and Wealth Index (%)

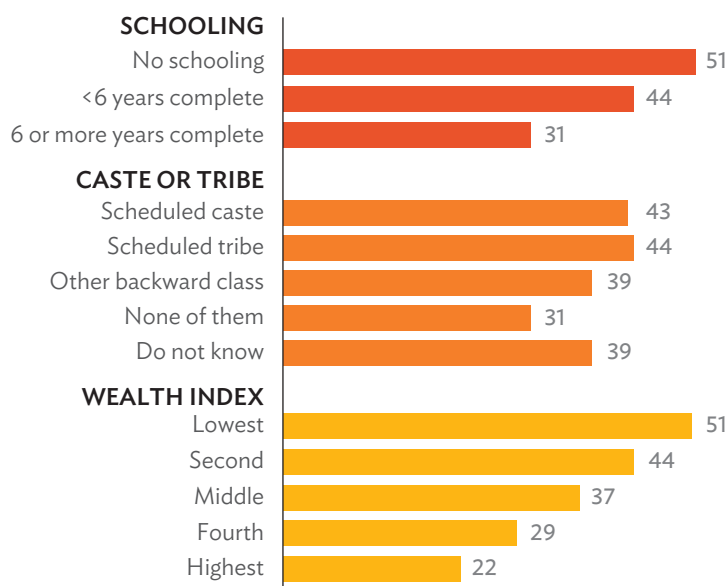


NFHS = National Family Health Survey.

Note: Nutritional status estimates are for children under 5 years, and are based on the 2006 World Health Organization International Reference Population.

Source: International Institute for Population Sciences and ICF. 2017. *National Family Health Survey (NFHS-4), 2015-16*: India. Mumbai.

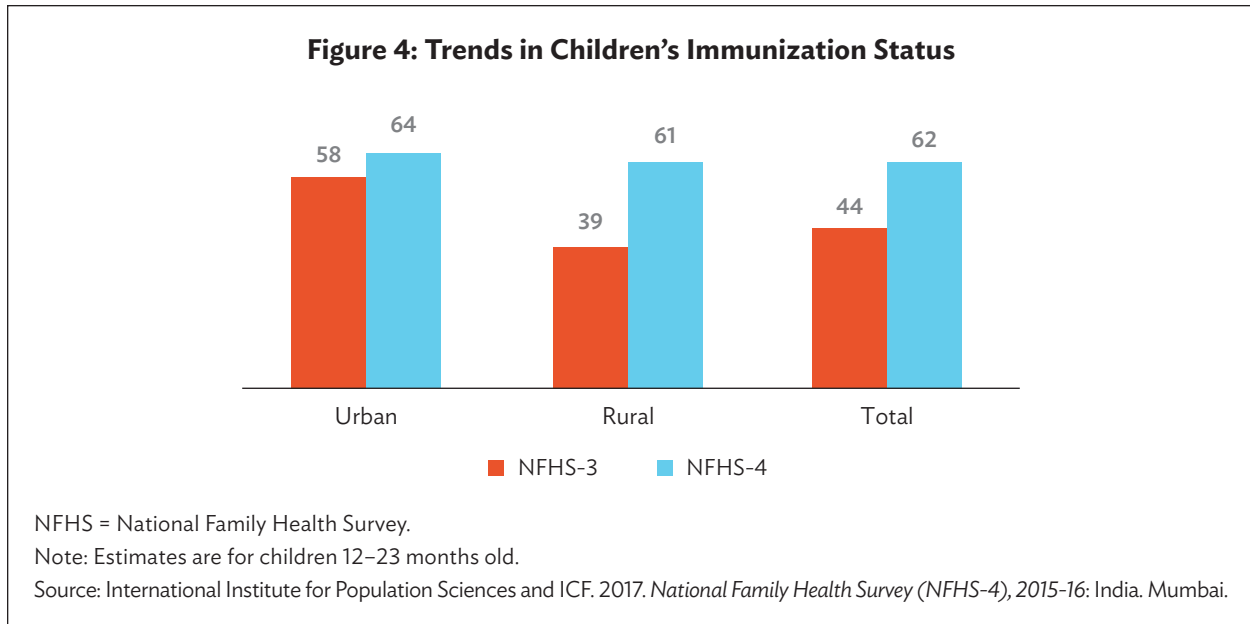
Figure 3: Children’s Nutritional Status (Stunting) by Education, Caste, and Wealth Index (%)



NFHS = National Family Health Survey.

Note: Nutritional status estimates are for children under 5 years, and are based on the 2006 World Health Organization International Reference Population.

Source: International Institute for Population Sciences and ICF. 2017. *National Family Health Survey (NFHS-4), 2015-16*: India. Mumbai.



Alongside undernutrition, overweight and obesity are also emerging rapidly in India, creating this double burden of overnutrition and undernutrition. Childhood obesity is becoming an issue even among the urban poor, with childhood obesity as a known precursor to obesity and other NCDs in adulthood. With 14.4 million obese children, India has the second highest number of obese children in the world, next to the People's Republic of China (The GBD Obesity Collaborators 2017). An analysis of data from 52 studies conducted in 16 of the 28 states in India (2010) estimated a combined prevalence of 19.3% of childhood overweight and obesity, which was a significant increase from the 16.3% reported in 2001–2005 (Ranjani et al. 2016). A study among 24,842 schoolchildren in southern India showed an increase in the proportion of overweight children from 4.94% in 2003 to 6.57% in 2005 (Raj et al. 2007). A study from northern India reported a childhood obesity prevalence of 5.59% in the higher socioeconomic strata compared with 0.42% in the lower socioeconomic strata (Marwaha et al. 2006). Another school-based study in 2011 reported that the prevalence of overweight and obesity in 8- and 18-year-old children, respectively, was 14.4% and 2.8% of International Obesity Task Force cutoffs, 14.5% and 4.8% by US Centers for Disease Control and Prevention cutoffs, and 18.5% and 5.3% by WHO standards (Misra et al. 2011). It is clear that childhood obesity is likely to be a serious public health problem in India, especially in the urban population.

Overnutrition is worse among the adults. Some 31.3% of women and 26.6% of men are overweight or obese in the urban areas according to the NFHS-4. Various studies have shown a growing adult obesity among the urban poor along with either diabetes or hypertension. Both these comorbidities require lifestyle changes including improvements in food habits. As a matter of fact, ideal management of both these conditions should be based on lifestyle changes and appropriate nutrition. This is a serious challenge, since food habits are products of sociocultural factors and firmly rooted in beliefs and tradition. Change in behavior is a tough task but will be a must if the war on obesity is to be won. This requires programs designed in a rational and scientific way by experienced social scientists who must be recruited under the NUHM. In view of the connection between overweight or obesity and several NCDs that need to be controlled through life-style changes, there is a case for coordination between the nutrition program and NCD control programs.

Among the elderly, malnutrition occurs when the elderly cannot afford food indiscretion, which is feasible to some extent among the younger people. Lack of nutritious food can impair overall health and wellness. Several diseases of the elderly are influenced by dietary factors. Malnutrition can cause weakening of the immune system making them more prone to infections, poor wound healing, and reduced bone and muscle mass that leads to higher morbidity and mortality. Understandably, the elderly poor suffer more because of inadequate access to quality food, causing prolonged malnutrition, decline in appetite, and unaddressed concomitant diseases particularly diabetes and hypertension. Too much alcohol ingested over several years interferes with the digestion and absorption of nutrients. The health programs operated through NUHM should have a built-in component of provision of nutritious food to the elderly poor on a sustainable basis. If schoolchildren can be given food in the form of midday meals, a similar initiative can be launched for the elderly poor as well.

III. WHY URBAN NUTRITION?

Rapid urbanization is putting tremendous pressure on urban health and nutrition infrastructure and outreach in cities. Increase in urban population is a global phenomenon. The United Nations estimates that 55% of the global population currently lives in urban areas. This figure is projected to rise to 68% by 2050. The urban population of the world has grown rapidly from 751 million in 1950 to 4.2 billion in 2018. Asia, despite its relatively lower level of urbanization, is home to 54% of the world's urban population, followed by Europe and Africa with 13% each (United Nations 2018). Nutrition security for this population will be critical for the achievement of national and global Sustainable Development Goals.

According to India's Census 2011, out of a total population of 1.21 billion, the urban population comprises 377 million (31.6%). The National Health Mission identifies cities and towns as those with populations above 50,000, while district headquarters have populations of over 30,000 since 2013. So far, 1067 cities or towns are covered under the NUHM, which is part of the National Health Mission. Between 2001 and 2011, 32 million people moved from rural areas to urban areas, according to migration data from Census 2011. Nearly 17% of India's urban population, or more than 65 million people, live in slums, a number that has more than doubled in just 2 decades (Salve 2015). They are particularly vulnerable to the vicious cycle of malnutrition and poverty causing and reinforcing each other. The under-five mortality rate among the urban poor is 72.7, significantly higher than the urban average of 51.9. According to the Ministry of Health and Family Welfare (2013), more than 46% of urban poor children are underweight and almost 60% of urban poor children miss total immunization before completing their first birthday.

The urgency of addressing malnutrition in urban areas is accentuated by the fact that NCDs are on the rise. Both adult overnutrition and childhood undernutrition are associated with an increased risk of NCDs, and urban lifestyles contribute further to unhealthy eating habits. One-fifth of maternal mortality can be averted by addressing maternal stunting and iron deficiency anemia. One-fifth of neonatal mortality can be prevented by ensuring the universal practice of early initiation of exclusive breastfeeding within the first hour of birth. Meanwhile, a report in *The Lancet* (2008) states that one-fifth of under-five child mortality in India can be prevented by ensuring universal exclusive breastfeeding for the first 6 months complemented by appropriate feeding practices after 6 months. The Global Nutrition Report 2015 estimates that for investment in nutrition, there is a benefit-cost ratio of 16:1 for 40 low- and middle-income countries. Thus, in addition to health benefits, investments in nutrition are economically sensible as well.

There are significant differences between rural and urban areas. Some major challenges specific to urban health are poor infrastructure, fragmented and uncoordinated health service delivery system, suboptimal financing, lack of coordination among stakeholders and agencies, pavement dwellers and migrant population, paucity of human resources, unequal distribution of resources, etc. Limited access to safe and nutritious food, lack of social services, and poor public health infrastructure leave shantytown populations at high risk for nutritionally inadequate diets and infectious diseases. Without proper planning, infrastructure and services, often lacking in rapidly expanding urban areas of low- and middle-income countries, nutrition outcomes will be adversely affected.

While the rural health system in India has been developed systematically over a long time, a systematic effort to organize urban health care is less than a decade old, with the advent of the NUHM in 2013. The inclusion of nutrition within the ambit of urban health is even more recent.

The recently reformed Integrated Child Development Services (ICDS) in the rural areas of India could provide a model to learn from, significant design modifications would be needed to adapt it to the urban context, for it to be effective. As urban populations differ from rural populations, specific approaches are called for to address challenges in nutrition. Urban slums must be accorded priority in various programs that address the challenge of malnutrition.

Multisector interventions are extremely challenging in any country because of the way in which governmental structures and budgetary systems are organized, which naturally create competitive turf issues and foster a “silo mentality”. Since nutrition does not neatly fall under a single ministry or department, the ownership of the program and therefore, the budgetary allocations are not always clear, and ends up being “everybody’s business but nobody’s responsibility.” This becomes even more of a challenge in urban areas, which adds another layer of complexity in the form of local government structures.

IV. SPECIAL FACTORS THAT WARRANT A DIFFERENT APPROACH IN URBAN AREAS

The following statistics demonstrate some of the important differences between rural and urban communities, which have implications for nutrition service delivery (see undated report by Mondal from website below).² Rural communities, in general, are smaller than urban communities. In India, 36.57% of villages have populations of less than 2,000; 21.37% have 2,000–5,000; and 13.33% count more than 5,000. On the other hand, 0.72% urban areas have less than 10,000 population; 5.27% have between 10,000 and 50,000; 2.75% have between 50,000 and 100,000; and 16.4% are above 100,000. The average size of a household in rural areas was 4.9 as against 4.4 in urban areas. The population density is 600 to 3,000 persons per square kilometer in rural areas as against more than 3,000 persons per square kilometer in urban areas.

Mobility in rural areas is either to another village or to cities, while mobility in urban areas is usually to another city (the net result being increasing movement toward cities). As per Census 2001, India has 314 million migrants. Out of these, 268 million (85%) are intrastate migrants, or those who migrated

² Source: <http://www.yourarticlelibrary.com/difference/rural-urban-differences-demographic-and-socio-cultural-characteristics/39322>.

from one area of the state to another, while 41 million (13%) were interstate migrants, and 5.1 million (1.6%) migrated from outside of the country. The infant mortality rate in rural areas is one-and-a-half times the rate in urban areas (80:49 ratio). Labor force participation in rural areas is more than three times that in urban areas. In 1993/94, labor force participation was 294 million in rural areas against 85.7 million in urban areas. The number of working children in rural areas is 10 times more than in the urban areas (in 1991, it was 10.26 to 1.03 million). Though the above data are from 2 decades ago (as up-to-date data on these aspects could not be found), the central message is still valid.

In a more recent household survey in Punjab by Tripathi et al. (2016) using the STEPS questionnaire of the WHO, a significantly higher proportion of respondents belonging to rural areas (15.6 %) always or often add salt before or when eating, as compared to urban area (9.1%). A greater proportion of rural females (19.1%) were engaged in vigorous activity than their urban counterparts (6.3 %), and a higher prevalence of obesity (using Asian cutoffs) was seen among urban females (34.3%) when compared with their rural counterparts (23.2%).

Some challenges specific to urban areas in the context of a nutrition program are as follows:

- (i) **Absence of well-defined target areas.** Coexistence of slums and colonies with people from varied socioeconomic strata makes it difficult to identify and target the poor and vulnerable, unless they are in slums or such circumscribed geographical areas.
- (ii) **Migrant and floating population.** Language issues; changing neighborhoods, seasonal or daily wage labor, and permanent distress are special problems affecting these populations, who are usually concentrated in poor urban areas. Children of migrant workers lack supervised care and are therefore vulnerable to exploitation, violence, or abuse; while childcare facilities and monitoring groups are absent in urban poor areas.
- (iii) **Poor work conditions.** Poor work, uncertain livelihood, and underpaid jobs set against a higher cost of living in cities are day-to-day challenges for the urban poor.
- (iv) **Poor living conditions.** Overcrowding results in morbidities that in turn can lead to undernutrition. Overcrowded housing is accompanied by compromised hygiene and sanitation facilities affecting nutrition status.
- (v) **Exclusion of urban poor.** Accentuated disparities impair access to quality services of nutrition, health, water, sanitation, education, and protection. Legality of housing is a major challenge. Whether a particular slum receives entitlements is based on whether it is officially declared; this is determined by systems of cutoff dates and other criteria that render many settlements as illegal. The Census excludes these areas in enumeration of slums as the living conditions for the entire population is “slum-like”. Urban governance systems have not evolved, and resources are lacking. These transient urban areas reveal high levels of deprivation of basic amenities, which affect women and children the most.
- (vi) **Food insecurity and poor diets.** These include junk foods that create problems specific to urban areas. The coexistence of underweight and obesity in the same community has implications for program design; for example, in such contexts, the messages need to be carefully crafted, and centered more around the nutritional quality rather than just the quantity of food intake.

- (vii) **Gender issues.** Sociocultural characteristics of the urban poor with respect to children and women are quite different from those in rural areas. Pregnant women and young children, especially young girls, eat last and least in the household, which impacts their overall intake of nutritious food. Further, women are more likely than men to have less secure and irregular jobs that affect breastfeeding, infant feeding, and childcare practices, especially for those without family support systems who must adapt their work patterns or use poor quality childcare. Violence against women and girls is an emergency, especially when the home and neighborhoods become unsafe places for children. Violence against boys is underreported and not talked about. Violence is also manifested in urban infrastructure. Toilet blocks are used for illegal activities making them out of bounds for women and girls, e.g., in public transport systems.
- (viii) **Lack of space for promoting kitchen gardens.** Urban areas, being high in population density, suffer from a lack of space for promoting kitchen gardens that could positively influence household food security.
- (ix) **Inadequate provision of basic services.** This has particular implications on nutrition programming, as seen, for example, in the lack of proper buildings for anganwadi³ centers (AWC) in urban areas.
- (x) **Financial protection.** Financial protection against impoverishing or catastrophic health expenditure is even more critical in the urban areas. For instance, the average out-of-pocket expenditure for deliveries in public health facilities in urban areas is ₹3,913 (\$55) as against ₹2,947 (\$42) in rural areas (NFHS-4).
- (xi) **Coordination poses different challenges.** Different challenges exist among the functionaries of different sector departments for health and nutrition that are unique to the urban setting. The classification of cities and their governance systems and structures are complex and vary state-wise, based on size and population. Census classifies urban governance into four areas: Statutory Towns, Census Towns, Out Growths, and Urban Agglomerates. Heterogeneous financial patterns of all urban local bodies (ULBs) challenge the provision of basic services to the people. There is a need for judicious financial planning that will support accountability. Encouraging social auditing of programs will lead to better quality of services for urban citizens.

³ Anganwadi is a type of rural mother and childcare center in India that was started by the Indian government in 1975 as part of the Integrated Child Development Services program to combat child hunger and malnutrition.

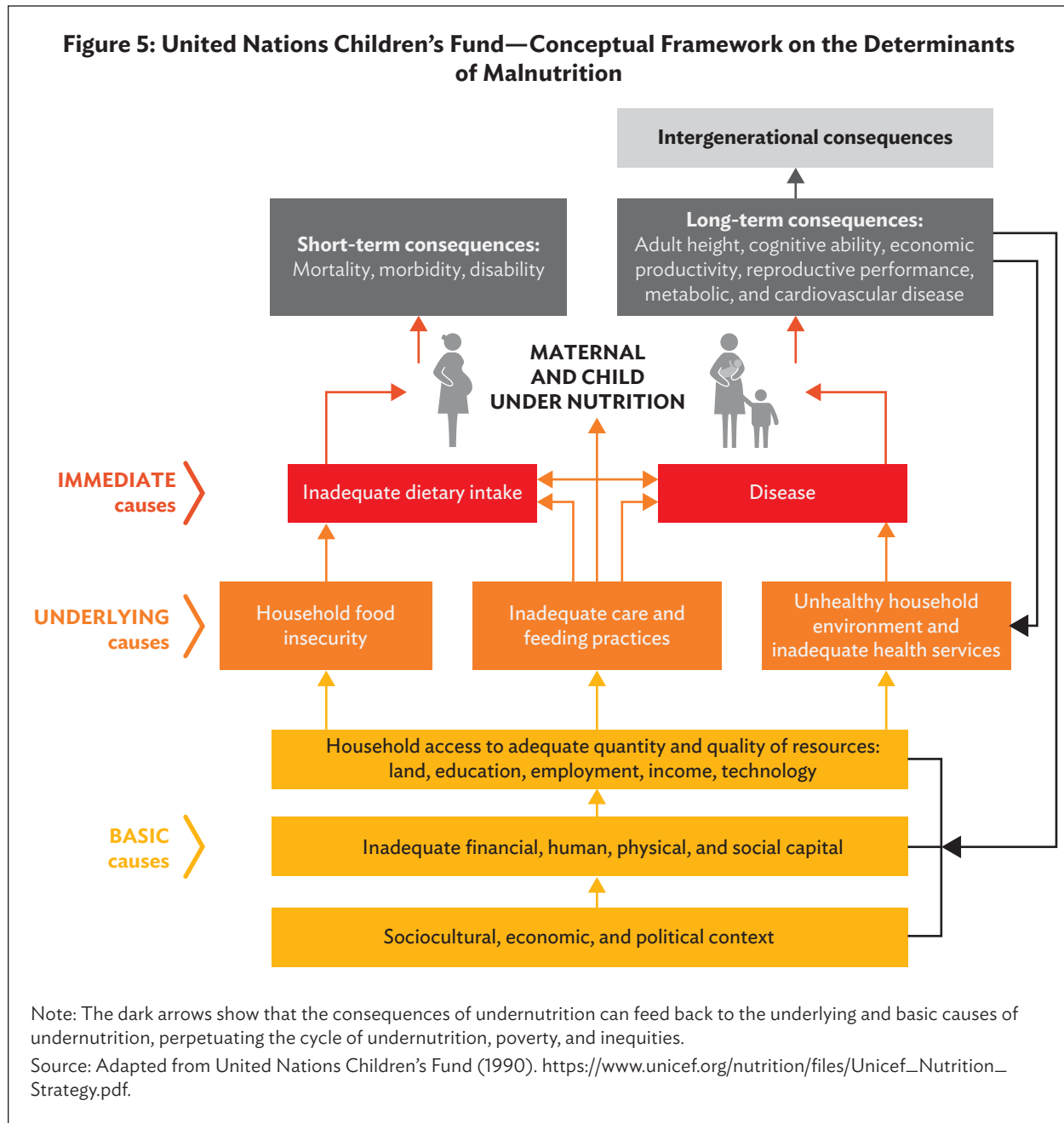
V. DETERMINANTS OF MALNUTRITION IN URBAN POPULATIONS

Figure 5 shows the widely used conceptual model originally proposed by the United Nations Children's Fund (UNICEF) in the 1990s (UNICEF 2015), which presents the **immediate** causes of maternal and childhood undernutrition as first, inadequate dietary intake; second, disease, whose **underlying** causes are (i) household food insecurity, (ii) inadequate care and feeding practices, and (iii) unhealthy household environment and inadequate health services. At the most **basic** level, the causes of undernutrition are sociocultural, economic, and political context; inadequate financial, human, physical, and social capital; and household access to adequate quantity and quality of resources (land, education, employment, income, and technology). The conceptual model also clearly shows the short-term and long-term consequences, which go beyond morbidity, mortality, and disability, and which impact various dimensions of life such as cognitive ability and economic productivity.

The conceptual framework has to be viewed through an urban lens. Environmental issues, hygiene and sanitation, and an overcrowded housing situation contributes to an increased risk of infectious diseases, and adversely affect nutritional status. They can also be exacerbated in the absence of homestead gardens that could otherwise provide nutritious vegetables and fruits. The sociocultural context in urban slums is hardly the same as that in rural areas. Thus, behavior change communication to alter the eating, feeding, and caring practices in cities must be designed differently; for example, by dealing with junk foods being consumed by these populations, declining family support systems, and provision of support to migrant laborers caught in the urban way of life without the necessary resources or coping mechanisms.

Several studies have examined malnutrition in India. Ravindranath et al. (2019) examined nutrition among children of migrant construction workers in Ahmedabad between May 2017 and January 2018, where they drew attention to overall nutritional well-being, which remains understudied. Their objectives were to categorize the current nutritional status of children under the age of five and determine the underlying causes of poor nutritional outcomes. Undernutrition was highly prevalent among the children (N=131), specifically at 40.5% for stunting, 22.1% for wasting, and 50.4% for underweight. The authors found common factors across parents interviewed such as similar misconceptions on malnutrition, long hours of work, and lack of childcare provision at the worksite that resulted in disrupted quality of care. While sociocultural beliefs and lack of information influenced breastfeeding, other factors such as inability to take breaks or lack of space further impaired infant feeding practices. Lack of dietary diversity at home, poor hygiene and sanitation, and economic inability to seek health care further affected the children's nutritional status. The authors found that the parents' informal work setting exposes children to a nutritionally challenging environment. Policies and programs seeking to address undernutrition, a critical challenge in India, must pay attention to the specific needs of migrant children.

Huey et al. (2019) studied the prevalence and correlates of undernutrition among young children in urban slums of Mumbai, using different markers of undernutrition, including stunting, underweight, and anemia among 10–18-month-old children living in urban slums, an understudied vulnerable group. They noted that young children living in urban slums were vulnerable to malnutrition and subsequently poor health outcomes, but data on the correlates of stunting, underweight, wasting, and anemia specifically among 10–18-month-old children in India remain limited. They screened children and their mothers (N=323) for anthropometry, demographics, and complete blood counts for hemoglobin concentration, and correlated these with child and mother's age, sex, birth order, birth weight, illness episodes, hemoglobin concentration, family income, maternal height, and maternal



education level. They found that the prevalence of stunting was 31.2%, underweight 25.1%, wasting (9.0%), and anemia (76%) among all children. Male children had a higher prevalence of poor growth indices and lower anthropometric scores than females. Male gender, low birth weight, shorter maternal height, report of ≥ 1 episodes of illness within the past month, older maternal age, and birth order ≥ 2 were also associated with poor growth and anemia. Correlates of undernutrition were different among females and males. Female children had a 40% higher risk of anemia associated with diarrhea, and male children who were firstborn had a 20% lower risk of anemia. The authors concluded that poor growth and anemia among young children were prevalent in urban slums of Mumbai, and that sex of the child played an important role in informing interventions to address undernutrition.

Minocha, Thomas, and Kurpad (2017) observed that the connection between the production, availability, and consumption of high-quality food is becoming very important in developing countries. Protein requirement is linked to its quality, or its digestibility and ability to meet human indispensable amino acid requirements. This requirement is particularly relevant in India, where commonly consumed cereal-based diets and cereal-based food subsidy programs offer low-quality protein and therefore pose a risk of quality protein deficiency. The production of and access to sustainable sources of high-quality protein will be important in mitigating risks to human health. Although milk production has risen in India, its consumption by the poor remains low. Leguminous grain production, which can help resource-poor farmers increase their intake of quality food and has greater climate resilience and soil improvement properties, has fallen. The percentage of the population at risk of quality protein deficiency was found to vary between 4% and 26%. Mitigating these risks requires a greater intake of high-quality proteins, such as pulses and milk; thus, food subsidy policies should move beyond cereals and to more quality-conscious alternatives.

George et al. (2019) surveyed urban nutrition in Devarjeevanahalli, a large notified slum in Bengaluru, South India characterized by poverty, overcrowding, hazardous living environment and social complexities. The community-based cross-sectional survey sought to determine the prevalence of health conditions using a mobile screening toolkit-THULSI (Toolkit for Healthy Urban Life in Slums Initiative). A total of 1,186 households were surveyed and 3,693 people were screened. Demographic parameters and priority health conditions (hypertension, diabetes mellitus, anemia, and malnutrition) were studied. More than three-fourths (70.4%) of the population were below the poverty line. Only one-third had a regular job and the average daily income was \$5.3 for men and \$2.6 for women. Despite many challenges, the local health team was able to screen the slum population using relatively simple technological solutions. The prevalence of hypertension (35.5%), diabetes (16.6%), and anemia (70.9%) was high in the screened slum population. Around 56.5% of hypertensives and 34.4% diabetics were screened for the first time. Most people were unaware of their disease condition prior to the screening. Almost half of the children under the age of five were stunted. The authors reported poor income security and huge burden of health issues among adults and children.

VI. INDIA'S RESPONSE TO URBAN UNDERNUTRITION

India developed a National Nutrition Policy in 1993 (Ministry of Women and Child Development 1993); formulated a National Nutrition Strategy in 2017; and launched a National Nutrition Mission (POSHAN Abhiyaan) in 2018.⁴ The Twelfth Five-Year Plan, 2012–2017 reinforced the commitment to prevent and reduce child undernutrition (underweight prevalence in children 0–3 years) and articulated it as one of India's core Monitorable Targets.

The National Nutrition Strategy of India

The National Nutrition Strategy of India by the NITI Aayog (NITI Aayog 2017) entitled “Nourishing India” calls for convergence among four proximate determinants of nutrition, namely, health services, food security, safe water and sanitation, and income and livelihoods. All these proximate determinants are significantly impacted by attitudes and behaviors, which in turn are predicated by social norms

⁴ See Government of India, NITI Aayog. POSHAN Abhiyaan. <https://niti.gov.in/poshan-abhiyaan>.

and cultural paradigms. The strategy envisages an India free of malnutrition (*Kuposhan Mukh Bharat*), linked to Clean India (*Swachh Bharat*) and Healthy India (*Swasth Bharat*). This is elaborated as “Healthy, optimally nourished children, realizing their growth and development potential, active learning capacity and adult productivity; Healthy, optimally nourished women realizing their social and economic development potential; In protective, nurturing, gender sensitive and inclusive community environments—that enhance human and national development in the present—and in the future.” Nourishing India lays down a road map for effective action and enables states to make strategic choices through decentralized planning and local innovation, with accountability for nutrition outcomes. It also gives prominence to demand and community mobilization as key determinants to bring about behavioral changes toward better nutrition. The strategy specifically addresses malnutrition among urban as well as rural populations. Thus, it is only logical to include nutrition interventions as part of the package of services to be provided in health and wellness centers (HWCs) in urban areas as well as under NUHM. The National Nutrition Strategy maps out the status of nutrition in the country and has identified the 100 worst affected districts. The strategy has set goals, targets, and recommended approaches. The goals are as follows:

- (i) To prevent and reduce undernutrition (underweight prevalence) in children (0–3 years) by 3 percentage points per annum from NFHS-4 levels by 2022.
- (ii) To reduce the prevalence of anemia among young children, adolescent girls, and women in the reproductive age group (15–49 years) by a third of NFHS-4 levels by 2022.

National Nutrition Mission

The government has initiated a National Nutrition Mission known as POSHAN Abhiyaan under the Ministry of Women and Child Development (Press Information Bureau 2017). POSHAN Abhiyaan aims to create synergy between different nutrition schemes and across ministries to achieve the common goal of reducing malnutrition. The thrust is systematic convergent mechanism of service delivery and monitoring. To strengthen delivery of basic services, convergence between various schemes relating to nutrition, drinking water, sanitation, school education, and urban housing and livelihood needs to be promoted. The NUHM and POSHAN Abhiyaan need to build stronger linkages with the National Urban Livelihood Mission to facilitate the process of integration of self-help groups with the *mahila arogya samitis* (MAS) or women’s health committees at the field level to leverage on the existing network and rapport of the self-help groups.

POSHAN Abhiyan activities include (i) mapping of various schemes contributing toward addressing malnutrition; (ii) introducing a very robust convergence mechanism; (iii) information and communication technology (ICT)-based real time monitoring system; (iv) incentivizing states and unscheduled tribes to meet the targets; (v) incentivizing *anganwadi* workers to use ICT-based tools; (vi) eliminating registers used by *anganwadi* workers; (vii) introducing height measurement of children at the AWCs; (viii) social audits; (ix) setting up nutrition resource centers; and (x) involving masses through *Jan Andolan* for their participation on nutrition through various activities, among others.

The POSHAN Abhiyan aims to reduce stunting by 2%; undernutrition by 2%; anemia by 3% among young children, women, and adolescent girls; and low birth weight by 2% per annum. The mission would strive to achieve reduction in stunting from 38.4% (NFHS-4) to 25% by 2022 (Mission 25 by 2022).

A total of 1.4 million AWCs have been sanctioned across the country, of which 136,000 AWCs are in the urban areas. Although originally designed to reach rural communities, *anganwadi* services under the umbrella ICDS program now have a presence in urban areas, particularly in poor slum settlements. AWCs can play a crucial role in providing health and nutrition services to children and

women in the urban landscape. However, an efficient delivery of these services is possible if these have sound infrastructure, logistics supply, trained human resources, and a robust monitoring system. *Anganwadi* services in urban areas come with serious limitations and challenges especially in the wake of increase in urban population and slum settlements and inclusion of new areas under urban settings. The constraints of space, proper infrastructure, sanitation, and town planning with no adequate provision for childcare make the operation of *anganwadi* services more difficult in urban areas. A larger policy prescription under ICDS would be to enlarge the coverage of children under ICDS in both rural and urban areas by covering left-out children as well (Panda P 2021). There is provision for urban health and nutrition day sessions, but for these sessions to be effective, the inadequate human resources and infrastructure have to be addressed. Further, urban AWCs are not under the urban local bodies (ULBs), unlike in the rural areas, where convergence is easier to obtain. In the urban context, there are no reporting mechanisms for the urban ICDS to urban local bodies.

The NUHM has eight core strategies and three levels of convergence. Since it is proposed to implement improved nutrition through NUHM, it will be prudent to develop approaches that are compatible with existing core strategies and levels of convergence, strengthening in each of these the role of nutrition. This may prove to be a cost-effective mechanism for implementation.

VII. RECOMMENDATIONS

A. National Government

Poor diets are among the leading health and societal challenges of the 21st century, leading to disability and death, growing inequalities, staggering health care costs, and environmental implications. The global commitment to universal health coverage is a unique opportunity to address malnutrition in all its forms. Integrating nutrition within health systems would generate substantial health gains and be highly cost-effective. There is an urgent need to build equitable, resilient, and sustainable food and health systems by investing in nutrition, especially in the most affected communities, and focusing on joint efforts. Global challenges show how vital this is.

The following lessons and recommendations, which also emerged from a discussion of this topic at the NITI Aayog on 14 March 2019, are very important. Accordingly, the following recommendations are suggested.

- (i) Vulnerability mapping and assessment in household surveys are important to understand health profile and health needs. A first round of vulnerability mapping was completed under the recently completed ADB-financed project for supporting the NUHM.
- (ii) Organizing outreach sessions through urban health and nutrition day sessions could be a useful strategy. Special outreach camps are needed for special health needs, and maternal and childhood undernutrition would certainly qualify as a special need in the Indian urban context.

- (iii) Accredited social health activists (ASHAs) and auxiliary nurse midwives should give special attention to the needs of pregnant women, children, elderly, disabled, and chronic disease patients through outreach sessions, home visits, and meetings.
- (iv) *Mahila aarogya samitis* should mobilize community members from ward members and local leaders for awareness raising on the determinants of health.
- (v) Accredited social health activists and *mahila arogya samitis* are doing a commendable job in rural areas. Although these are also operational in urban settings, an independent assessment of their efficacy and utility in delivering the services in larger urban settings should be conducted to inform their role definition in such areas; or an alternate strategy may need to be developed to reach the urban poor in the most effective way.
- (vi) A model of bringing ICDS and health centers under the ambit of ULBs should be explored. One such model has been practiced by Ahmedabad Municipal Corporation.
- (vii) Convergence of NUHM and ICDS funds could facilitate smoother governance, for which an urban health resource center could be developed to facilitate such convergence.
- (viii) The facilities run by nongovernment organizations (NGOs) or charitable trusts, which have the capability to provide quality care at affordable costs and the potential to serve the poor especially in the underserved slums, could be supported.
- (ix) The capacity of ULBs (municipalities and municipal corporations) should be strengthened in the areas of public health, sanitation, provision of clean drinking water, and vector control, as mentioned in NUHM. Apart from capacity building, special efforts may be necessary to obtain the political commitment of ULBs to invest in nutrition. This would call for intensive advocacy to educate local government officials on the magnitude of the problem, its impact on the local population and on the economy, the causes and solutions, and especially what actions could be undertaken at the ULB level.
- (x) Convergence among the Ministry of Health and Family Welfare, Ministry of Women and Child Development, Ministry of Housing and Urban Affairs, ULBs, and NGOs and/or civil society organizations, should be ensured, to focus on NCDs. The NCD screening module developed by the Surat Municipal Corporation can be used in developing suitable material.
- (xi) The capacity of ULBs in preparing a framework for engagement of nonprofit entities to run urban schemes under ULB supervision should be strengthened.

Strengthening the Primary Care System

Urban primary health centers may be upgraded to HWCs to act as a hub for all preventive, promotive, and curative care. As the name implies, HWCs seek to provide **services beyond health care**, i.e., address wellness more broadly. This clearly requires the inclusion of nutrition interventions. The urban health services through urban primary health centers or HWCs shall be led by the medical officers of these centers. However, the medical officers may not be currently equipped to handle the leadership role of these centers, especially with the demands of time commitment and training for nutrition-related issues. (Medical education in India includes some basic concepts of nutrition, but there is no emphasis on the specific skill sets needed to address malnutrition in general, and urban malnutrition in particular.) Therefore, the medical officers would need specialized training to add nutrition interventions to their job description. Similarly, other personnel in these centers also would need appropriate training and motivation to perform nutrition activities, which they are not currently used to performing.

Health Promotion Campaigns

Nutrition interventions should **focus on the first 1,000 days of life** (i.e., pregnancy + first 2 years of childhood), which is the critical window for intervention, as that is the period of life when a child's physical and mental growth and development are determined, and any losses suffered during that period are almost impossible to make up later on in life.

While food security and access to health services are important, increased awareness leading to a **change in behavior for nutrition** will be the key to success. Such behavior change should include infant and young child feeding practices, eating behaviors during pregnancy, health care-seeking behaviors, personal hygiene, and sanitation. This would also entail availing of institutionalized services of nutrition experts, nutrition counsellors, and trained ASHAs and *mahila arogya samitis* integral to NUHM. In addition, inputs and support from two national agencies will be needed: Food Safety and Standards Authority of India, to set standards and implement same; and the National Institute of Nutrition in the Indian Council of Medical Research, to provide comprehensive technical support including training, monitoring, and research.

It is important to **address specific needs of certain groups of high-risk people**, specifically those with tuberculosis, hypertension, diabetes etc. In one of the Indian studies, the prevalence of hypertension (35.5%), diabetes (16.6%), and anemia (70.9%) among the elderly was high in the screened slum population. Most of the people (56.5% of hypertensives and 34.4% diabetics) were screened for the first time. The management of diseases in these patients is also dependent upon the kind of healthy food they eat—or not eat. Such risk groups need to be identified and made aware of improved nutrition to reduce morbidity and mortality.

Strengthening of Service Delivery

In addition to the usual stakeholders in NUHM, the **school teachers and community self-help groups or NGOs** who have continuous interaction and communication with the urban poor communities can play an important role, provided they are given adequate skills, knowledge, and tools. It would be helpful to consider the **five critical steps needed to speed up progress**, as identified by the Global Nutrition Report 2018:

- (i) **Break down silos between different forms of malnutrition.** For example, as different forms of malnutrition coexist in the same communities, an integrated approach to ensuring the consumption of a nutritious and balanced diet makes sense.
- (ii) **Prioritize and invest in the data needed and capacity to use it.** The need for evidence-based planning and management is self-evident; however, this is an area that often gets neglected.
- (iii) **Scale up financing for nutrition.** Diversify and innovate to build on past progress. In resource-constrained settings, financing is often insufficient. Multisectoral actions on nutrition are therefore more challenging, since it is not the prime responsibility of any one ministry or sector. This results in budgetary allocations being short and scattered across several ministries and departments, making them difficult to track and monitor.
- (iv) **Galvanize action on healthy diets.** Suboptimal diets are a major risk factor of malnutrition, disease, disability, and death globally. Governments and business need to implement a holistic package of actions to ensure food systems and food environments are delivering healthy diets that are affordable, accessible, and desirable for all.
- (v) **Make and deliver better commitments to end malnutrition in all its forms.** This is an ambitious, transformative approach that will be required if global nutrition targets are to be met.

Community Engagement and Outreach Services

The NUHM and ADB accord priority to outreach services not only to make health and nutrition-related services available to people at their doorstep, but also to create awareness and promote community participation in all such activities. Outreach is a critical function since to expand and sustain the accessibility of services to urban poor population especially the vulnerable groups.

- (i) Establish and operate a strong outreach program to provide basic nutrition services that complement health care and public health activities, and to ensure a continuum of care.
- (ii) Focus outreach services on slum dwellers and other vulnerable groups especially the homeless, rag pickers, street children, migrants, and men and women suffering from discrimination and exploitation etc.
- (iii) Mainstream the monthly outreach sessions of the Urban Health and Nutrition Day but expand these to weekly or fortnightly based on local situations or context.
- (iv) Organize the outreach sessions at easily accessible and established locations such as schools and anganwadi centers.
- (v) Engage field-level workers (ASHA and *mahila arogya samitis* members), volunteers, and NGOs in delivering services and enhancing awareness.

B. General Recommendations on Improving Access to Food and Nutrition Programs

- (i) Implement strong regulatory and policy frameworks to support healthier diets for all at country and community level and across sectors, from production to consumption.
- (ii) Strengthen and increase research spending to address major nutrition questions, identify cost-effective solutions, and stimulate innovation
- (iii) Roll out nutrition services within health services by developing costed nutrition care plans, which should be scaled up and sustained to cover all forms of malnutrition, including overweight, obesity, and other diet-related noncommunicable diseases.
- (iv) Invest in human resources to increase the number of qualified nutrition professionals, and level out access to quality nutrition care.
- (v) Include nutrition-related health products like therapeutic foods and innovative technological solutions like digital nutrition counselling, where appropriate, especially when working with more remote and harder-to-reach communities, as well as with elderly people.
- (vi) Nutrition care, both preventive and curative, must be fully integrated into national health sector plans, and must be supported by a strengthened multisectoral approach.
- (vii) The number of qualified nutrition professionals should be increased to enhance the delivery of quality nutrition care. Frontline workers involved in nutrition service delivery should have the required pre- and in-service training, means, and motivation to perform their assigned roles.
- (viii) The food and drink industry should comply with international and national codes of conduct, including health and nutrition benefits to society and environmental protection and improvement.
- (ix) Strengthen food systems⁵ to support nutrition security.
- (x) Leverage any event to renew and expand nutrition commitments and strengthen accountability.

C. Asian Development Bank and International Development Partners

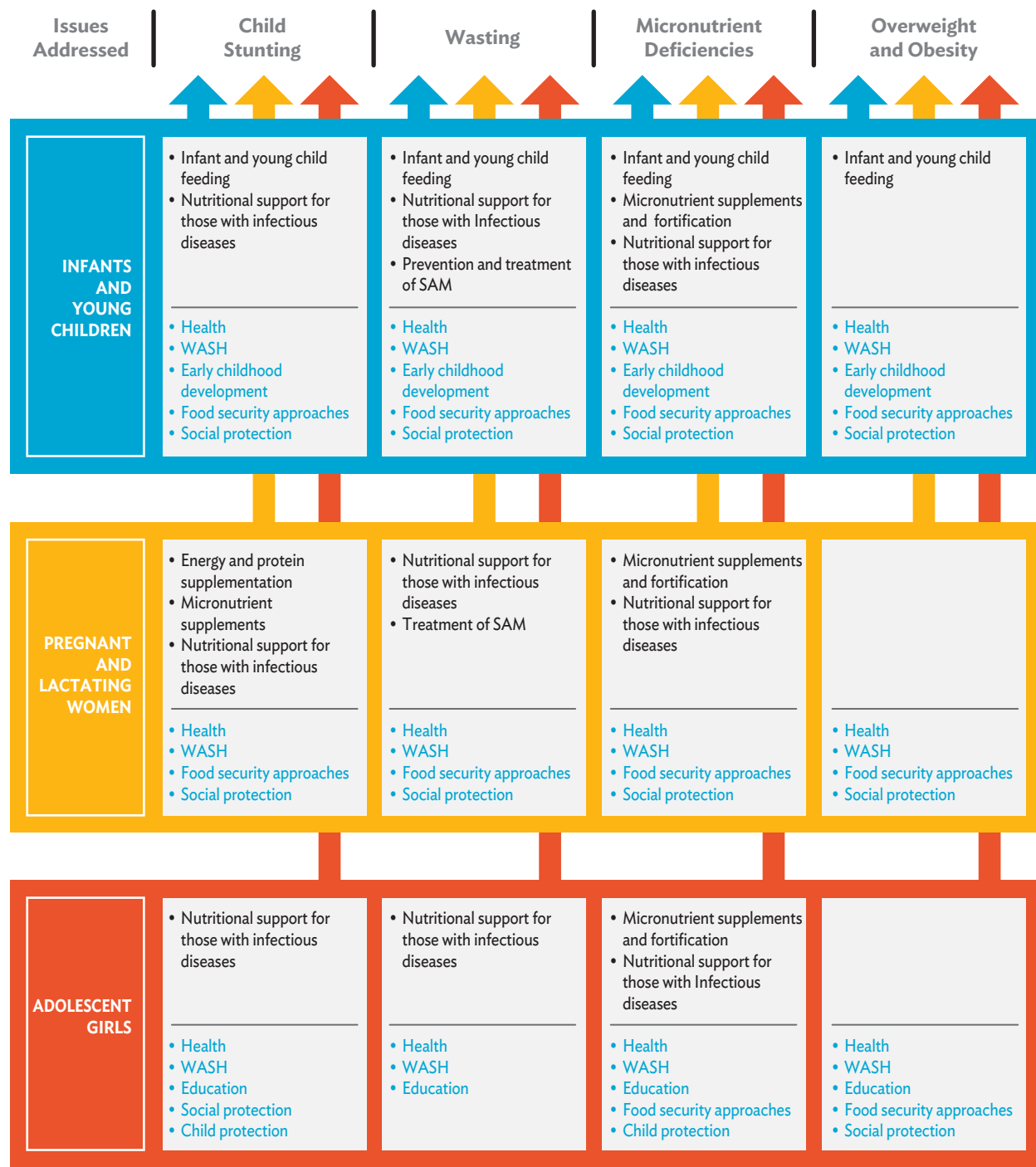
In its support to the NUHM, ADB has identified four pillars for India's urban nutrition program: (i) strengthening the primary care system through the network of urban primary health centers and the urban community health centers (UCHCs), which are being upgraded as health and wellness centers (HWCs); (ii) health promotion campaigns; (iii) service delivery strengthening; and (iv) community engagement and outreach activities.

⁵ Food systems are the sum of actors and interactions along the food value chain—from input supply and production of crops, livestock, fish, and other agricultural commodities to transportation, processing, retailing, wholesaling, and preparation of foods to consumption and disposal. Food systems also include the enabling policy environments and cultural norms around food.

India could benefit considerably from coopting international agencies with specific expertise on nutrition, so that global best practices could be adapted to the Indian context and adopted if found appropriate. The WHO, Food and Agriculture Organization, World Food Programme, and United Nations Children's Fund (UNICEF) are the main agencies of the United Nations technically engaged on this subject. In particular, UNICEF has considerable resources and expertise in nutrition-related issues. The Red Cross Society has an excellent outreach through its volunteers. Engaging both these agencies may be productive. The World Bank Group and ADB are keen on financing nutrition, as are other notable international groupings such as the Nutrition Initiative (formerly the Micronutrient Initiative), and the Global Alliance on Nutrition. Any operational or steering committee on nutrition-related issues at national, state, or city level must also have representatives of these and other relevant organizations.

It is useful to consider the schematic by UNICEF (2015) presented in Figure 6, showing both the nutrition-specific and nutrition-sensitive interventions to address what is now recognized as the triple burden of malnutrition (i.e., undernutrition, overweight or obesity, and micronutrient deficiencies). It is clear from this schematic that the health sector would not be able to succeed without coordinating with several nonhealth sector actors at the city level. Multisectoral actions, converging synergistically on the same beneficiary population, would be the only effective approach. This requires a critical role for the local government bodies, which need to make sure that the vulnerable populations, including slum dwellers, homeless people, and migrant populations, have access to safe water and sanitation. Close cooperation with the education department and their primary schools would be invaluable to address early childhood development in an integrated manner among health, education, and nutrition interventions.

Figure 6: United Nations Children’s Fund Framework for Addressing the “Triple Burden of Malnutrition”



● Nutrition-specific intervention ● Nutrition-specific approaches

SAM = severe acute malnutrition; WASH = water, sanitation and hygiene.

Source: UNICEF. 2015. *UNICEF’s Approach to Scaling Up Nutrition—For Mothers and Their Children*. New York. https://www.unicef.org/nutrition/files/Unicef_Nutrition_Strategy.pdf.

VIII. PROPOSED WAY FORWARD FOR MULTISECTORAL NUTRITION INTERVENTIONS UNDER THE NATIONAL URBAN HEALTH MISSION

The following actions should be initiated to break the silos across relevant sectors and across different types of malnutrition.

Develop a truly integrated nutrition program. Real multisectoral action with intersectoral coordination requires conscious efforts in terms of institutional arrangements and financing mechanisms. This means the development of a truly integrated nutrition program, and intensive involvement of all stakeholders from the very beginning through every step of the way. Some practical steps in this regard could be as follows:

- (i) An appropriate institutional home needs to be established for nutrition, with the mandate and authority to convene and coordinate the relevant ministries and departments. Currently, the Ministry of Health and Family Welfare has the nominal responsibility for nutrition, and the Ministry of Women and Child Development operates the ICDS; however, neither has any authority over other relevant ministries. A supraministerial institutional home will be required. The National Nutrition Mission (POSHAN Abhiyan) serves this function and is supervised by the Prime Ministers' Office.
- (ii) A high-level multisector coordination committee under the Prime Minister's Office is already operational and is a powerful instrument that sends a strong signal about the government's commitment to nutrition; and can obtain full participation and commitment from all relevant ministries or departments. In addition, a special taskforce or Empowered Group of Ministers or GOM appointed by the Prime Minister could be vested with the responsibility for coordinating and monitoring the actions by all relevant sectors.
- (iii) A separate budget is approved for multisectoral actions and intersectoral coordination for nutrition. This may be enhanced substantially to improve nutrition security in urban areas. This fund should bring additionality to the sector budgets to provide a strong incentive to the relevant ministries and departments at the national, state, and city levels to come up with proposals and seek funding.
- (iv) A process of screening regular sector budgets for contribution to nutrition could be established; this means any proposal from health, education, agriculture, social welfare, and water supply and sanitation departments or ministries would be reviewed to see how well they contribute to addressing malnutrition (similar to environmental clearances or gender sensitivity screening).
- (v) Awards and rewards could be instituted for best practice examples demonstrating intersectoral cooperation, to motivate innovative ideas on how to work across the silos.

Formulate a multisector strategic plan for an integrated nutrition program in urban areas.

This broad-based participatory process will involve all relevant stakeholders, including state and city representatives of the Ministry of Health and Family Welfare, Ministry of Women and Child Development, Ministry of Housing and Urban Affairs, Education Ministry, ULBs, water supply and sanitation authorities, education departments, private actors in health and related fields, government and private actors in the food industry, communication experts, and civil society. Most importantly, beneficiary communities must be included.

Design a road map to implement nutrition security. This plan for the urban poor may be developed and validated through a few pilots for learning lessons and replication throughout India.

Facilitate development of local strategic plans by each city or ULB. These plans should be converted into an operational manual with detailed activities and complete costing. The plans should include activities, outputs, timelines, responsibilities, costs, and a robust monitoring system with clear and measurable targets to be achieved within a specific timeframe.

Implement capacity development plans. The idea of including nutrition is probably unfamiliar to most stakeholders in the urban context, and considerable training would be needed, both for technical skills and for managerial and/or monitoring skills.

Encourage innovative ideas. These include the use of public–private partnerships, terrace gardens for growing vegetables and fruits (in view of the shortage of land in urban settings), ICT for monitoring and behavior change communication, use of local community groups for social mobilization, as well as watchdog function to increase accountability. All innovative proposals should have a strong impact evaluation component to enable informed scale-up if they are shown to be effective.

Promote operational research in terms of what works and what does not in the urban context. Specific gaps in knowledge that could emerge during the participatory process of preparing the national strategic plan and/or city-level operational plans should be addressed.

Mobilize resources. These could be from NUHM or other budgetary and nonbudgetary sources. Based on the amount of resources mobilized, the city-level plans may need to be reworked.

Map NGOs and assess their potential to support nutrition-related activities. NGOs can provide excellent support especially in nutrition in view of their community-based approaches. NGOs are also generally strong in behavior change communication. ADB has already done an NGO mapping exercise in the urban areas in selected states, which could be a starting point for a nationwide mapping of NGOs that focus on nutrition, to understand better who is doing what, where, how, and how much.

Coordinate implementation of the plans through a well-defined organizational arrangement.

This covers multisector teams, and a city-level steering committee with representation from health, education, environment, women and children's development, housing, and food sectors from both the government and nongovernment actors. It is better not to be prescriptive about the organizational structures, given the size of the country and wide variations in existing governance set-ups from one city to another. Nevertheless, broad guidelines on organizational structures in the context of urban governance need to be developed and distributed to the states and cities expected to carry out the program.

Develop operational guidelines for integrating nutrition into the current operations of the NUHM.

These guidelines will depend on strategic plans and stakeholder consultations regarding what would work and what would not, and the results and lessons from the pilot. Such guidelines would include the following:

- (i) revised job descriptions, roles, and responsibilities of personnel;
- (ii) terms of reference and membership of coordination committees;
- (iii) funds flow arrangements, especially for multisector activities;
- (iv) how to conduct outreach activities in the urban context; and
- (v) behavior change communication materials and methods.

Increase the number of qualified and skilled nutritionists. To ensure that an adequate number of nutritionists are available to guide all urban health units, the national capacity for producing these professionals needs to be significantly enhanced through institutions such as the National Institute of Nutrition, and also through bachelors' degree programs in the science colleges across the country. Developing viable career options for nutritionists is a prerequisite for the successful build-up of this important human resource.

Devise and implement mechanisms at the state and central levels for multisector monitoring and evaluation. Learning, sharing, and incorporating lessons into future programs should be included as well.

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Addressing Nutrition Security in Urban India through Multisectoral Action

The Asian Development Bank is supporting the implementation of the National Urban Health Mission in India. In support of the undertaking, this paper provides available evidence-based data on urban nutrition in the country and explores practical multisectoral interventions that can be applied. It describes malnutrition's impact on health and nonhealth sectors, identifies key determinants, and offers specific solutions according to the local contexts in various urban areas. The recommendations go beyond examining the health sector and take into account water supply, sanitation, sociocultural factors, food supply, and other issues affecting urban nutrition in India.

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