

Australia India Institute

Vol.8, June 2018

A VERY SHORT POLICY BRIEF

Promoting healthy food environments in rural India

Dr Mark Vicol

The Australia India Institute's A VERY SHORT POLICY BRIEF series examines key questions facing contemporary India and the Australia-India relationship. It combines in-depth academic analysis with clarity and policy relevance.



Australia India
Institute



www.aii.unimelb.edu.au

The Australia India Institute, based at The University of Melbourne is funded by the Australian Government, Department of Education and Training, the State Government of Victoria and the University of Melbourne.

Summary

Eliminating malnutrition in all its forms is a critical rural development challenge for India in the 21st century. Transformations in the rural economy are driving rapid changes in how rural Indians access, prepare, and consume food. This Very Short Policy Brief outlines the role that food environments play in ensuring all rural Indians have access to healthy and nutritious food choices. It discusses policy strategies to promote healthy food environments, including:

- Adopting the concept of ‘food environments’ in food and nutrition security research
- Recognising the role of household livelihood patterns in shaping dietary outcomes
- Adopting ‘nutrition sensitive’ agriculture and food policy
- Strengthening India’s Public Distribution System.

Overview: The double burden of malnutrition in India

Although global efforts to eradicate hunger have advanced in the past three decades, the stubborn persistence of undernutrition in India and across other low and middle-income countries (LMICs) is of significant concern. Current global estimates place the total number of *chronically undernourished* people at around 815 million, with up to 155 million children under the age of five years suffering from stunting (a measure of height to age ratio).¹ Stunting in early life has long-term consequences for cognitive development, educational achievement and economic productivity in adulthood.² There is a simultaneous global crisis of *overnutrition*, with rising rates of overweight and obesity, as well as noncommunicable diseases such as Type 2 diabetes. The phenomenon of simultaneous under- and over-nutrition, sometimes within the same population, is known as the *double burden of malnutrition*. India is at the epicentre of this global crisis. Roughly half of all undernourished people in LMICs today live in India.³ It is also home to 25% of obese adults living in LMICs. While increasing obesity rates impact both urban and rural populations, the large majority of undernourished Indians live in rural areas.

The crisis of malnutrition in India presents significant challenges to achieving the UN's Sustainable Development Goals (SDG). SDG number two aims to end all forms of hunger and malnutrition by 2030. Australia is committed to assisting LMICs in achieving the SDGs. Australia's recent foreign policy White Paper outlines its responsibilities to contribute to global efforts to reduce poverty and promote sustainable development. As a key regional partner, Australia therefore has significant interest in India's success in combating the double burden of malnutrition and improving the health and lives of its population.

How should policy makers address this crisis? In recent years, peak international bodies including the FAO have emphasised the critical importance of paying more attention to *food environments* in combating the double burden of malnutrition in low- and middle-income countries (LMICs) such as India. The food environment comprises "the range of food sources and products that surround people as they go about their daily lives."⁴ The food environment represents the interface through which consumers interact with the food system. The food choices of consumers are influenced by factors such as what foods are available, accessible and affordable in their food environment. In the past, food environment research has focused primarily on the obesity problem in high income countries such as Australia. However, research on what policy settings encourage healthy food environments in LMICs remains the 'missing piece of the puzzle' in the fight against the double burden of malnutrition.⁵

India's lack of achievements in reducing undernutrition compared to other LMICs remains puzzling. A reliable indicator of improving nutrition over time is the reduction in child stunting compared to GDP growth. For most countries, the rate of child stunting typically falls at about half the rate of GDP growth. However, in India the prevalence of child stunting remains stubbornly high at almost 40%, despite three decades of impressive economic growth. In short, India is performing far more poorly in reducing undernutrition than its GDP per capita growth would predict. This failure has been labelled India's nutrition 'enigma'.

1. FAO et al, 2017
2. Dewey & Begum, 2011
3. FAO et al, 2017
4. Turner, et al, 2017: 2
5. Herforth, 2016

At the other end of the malnutrition spectrum, as incomes have grown, parts of the population, including those in rural areas, have undergone a *nutrition transition* towards increasing consumption of processed, packaged and sugary foods. This is reflected in the rising prevalence of obesity amongst Indian populations – in some urban areas up to 50% of the population is obese – while the number of Indians suffering from Type 2 diabetes has reached epidemic proportions.⁶ India's nutrition crisis is also reflected in ongoing micronutrient deficiencies amongst both undernourished and overweight populations. Obtaining adequate dietary iron, vitamin A, iodine and folate remains particularly challenging for many rural Indians. Around 51% of women aged 15-49 in India suffer from anaemia, while 45% of children aged 6-59 months are vitamin A deficient.⁷

There is growing recognition that food environments are changing how people in India access, prepare and consume food. Globalisation, urbanisation, changing livelihood patterns and growing incomes are expanding food access and choice for some, while constraining choice and access for others. For example, where in the past rural Indian households grew most of their food for household consumption, today a higher proportion of food is accessed through modern retail stores and supermarkets, and increasingly as packaged and processed food. This has the effect of diversifying dietary patterns with both negative and positive outcomes.

Food environments in rural India

The food environments concept links the wider food system with household and individual livelihoods. It connects the processes of production, trade and flows of food at a global scale, the institutions that govern food supply chains and marketing, the resources and assets that households and individuals depend on in their daily lives, and the livelihood strategies that people pursue. The concept is shown in Figure 1.

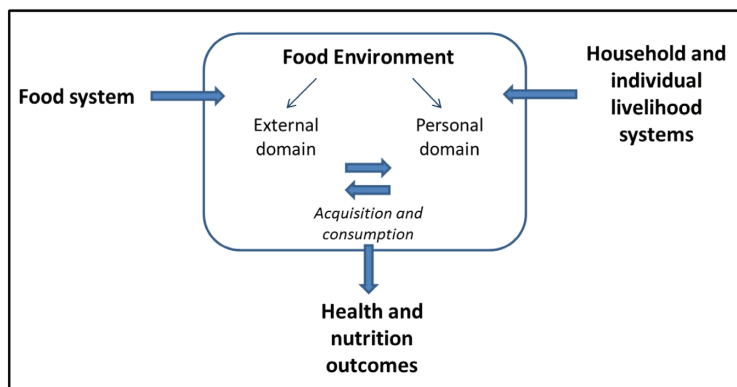


Figure 1: The food environment concept

6. Pradeepa & Mohan, 2017

7. Development Initiatives, 2017

The food environment itself can be usefully broken down into two ‘domains’, the external and personal.⁸ The external domain includes:

- Availability - the presence of a food product or vendor in the local environment;
- Prices - how much food products cost;
- Vendor and product properties - types of food outlets, location, opening hours etc, as well as food product quality, safety, nutritional composition; and
- Marketing and regulation - advertising, branding, nutritional information, labelling, and the policies that control these.

The personal domain of the food environment includes:

- Accessibility - how far or how long must people travel to acquire food, what modes of transport are available, where are vendors located relative to people;
- Affordability - what is the purchasing power of people relative to the price of food;
- Convenience - how does cooking and preparing food fit in with other time pressures, what food preparation facilities can people access; and
- Desirability - what food preferences do people have, are available foods acceptable to local food cultures, what are people’s attitudes towards food.

Food environments in rural India have traditionally consisted of foods produced for self-consumption by smallholder farmers and foods purchased from small, local markets. In this context, food availability was largely dictated by agricultural seasons and the local agro-ecological environment, the ‘thickness’ of traditional trading and transport systems, and government distribution systems. For many rural Indians in immediate post-independence India, the food environment shaped diets towards traditional coarse grain cereals (such as sorghum and millet), rice, pulses and locally available fruits and vegetables.

Today, food environments in India are in the midst of a set of far-reaching changes that are impacting health and nutrition outcomes for rural populations. In the last two decades there has been a rapid expansion of formal food retailing in India, including supermarkets but also notably the proliferation of convenience stores. At the same time, the food processing sector has expanded across India, and continues to grow alongside a burgeoning modern wholesale and logistics sector.⁹ The result has been the massive penetration of processed and packaged foods into rural Indian food environments, where it is now often easier to buy a sugary drink or packet of processed snack food than it is to find fresh vegetables. As incomes have increased for many over time, so too has consumption of highly processed and energy dense snack and convenience foods, part of India’s ‘nutrition transition’.¹⁰ Adding to the complexity of changing food environments in rural India is the ongoing subsidisation of cereal grains through the Public Distribution System (PDS), and an ongoing policy debate about the efficiency and coverage of the PDS.

8. Turner, et al, 2017

9. Reardon & Minten, 2011

10. Griffiths & Bentley, 2001

Modern food environments in India are clearly failing to empower large segments of the population to achieve healthy and nutritious dietary outcomes. In this context it is critical that policy makers pay attention to the impact of rapidly shifting food environments on health and nutrition outcomes in India.

Food environments and changing livelihood patterns in rural India

One of the key drivers of changing food environment interactions in India is shifting livelihood patterns among rural households. Rural livelihood patterns and lifestyles, as well as the composition and nature of the rural workforce, set the context within which rural people interact with their food environment. India's economic transition over the last three decades has increasingly created an urban-centric geography of growth, with a rapidly growing urban middle-class population. The nature of this growth, however, has led to dramatic shifts in the livelihoods of rural dwellers and been labelled an 'unusual' economic transition in rural India.¹¹ This unusual transition is reflected in the slow percentage decline of the total labour force engaged in agriculture compared to the decline in the sector's contribution to India's GDP. According to the World Bank, India's agricultural labour force stands at 43% as of 2017, while its contribution to total GDP in India has declined to just 14%. These contrasting percentages reflect the slow growth of India's agricultural sector and the ongoing struggles of rural households for whom agriculture is still central to their survival.

The agricultural sector can influence food environment interactions in several ways. For example, agricultural policy regarding priority crops, price support and food price subsidies can have a strong impact on household nutrition. The diets of farming households are influenced both by the diversity of food crops being cultivated by the household, and the variety of fresh food available in the food environment. As a source of household income, agriculture can influence nutritional outcomes in terms of how much and which kind of food crops are grown for self-consumption, what crops are sold and which foods are obtained through transactions. The gendered labour roles in agriculture can affect the ability of women to provide nutritious food for their children and themselves.¹²

The fact that those households who continue to rely on agriculture for their livelihoods are often also the most nutritionally vulnerable households has led researchers to identify an 'agriculture-nutrition disconnect', where even the slow gains in agricultural development and rural incomes have not led to sustained improvements in nutrition outcomes for the rural population.¹³

11. World Bank, 2011

12. Gillespie, Harris & Kadiyala, 2012

13. Ibid

As a result of the struggles of agriculture-dependent households, rural livelihoods in India are increasingly characterised by *diversification*. While the role of agriculture is critical to nutrition outcomes for many rural households, livelihood pathways are becoming progressively delinked from agriculture in many parts of rural India. For example, rural Indians are increasingly seeking employment in the non-agriculture sector through temporary and circular migration for meeting their income needs.¹⁴ These migratory patterns change the context in which rural Indians interact with their food environments. For example, as rural households move away from agriculture, they may acquire food via cash-based transactions in food environments that require them to make different decisions about diet. Returning migrants also bring with them new ideas and preferences about food. These fundamental shifts in rural livelihood patterns mean that rural people increasingly buy most or all of their food from stores and markets. If there is a diverse choice of nutritious and affordable foods in the food environment, then this may lead to improvements in dietary outcomes. However, given that food environments in rural India are now characterised by the increased availability of energy dense processed foods, changing livelihood patterns may also result in poorer dietary outcomes.

The role of institutions: India's Public Distribution System

Another important driver of food environment interactions in rural India is the PDS, introduced in the early 1950s. The expansion of the PDS occurred alongside the massive increase in cereal crop yields achieved in the Green Revolution era using newly introduced high yielding varieties of wheat and rice. The PDS used public funds to procure surplus wheat and rice from Green Revolution farmers in highly productive states such as Punjab and Haryana and redistribute this food to needy populations in the rest of the country. Today, the PDS remains the most important social safety net intervention in India, targeting some 800 million people and absorbing about 1% of India's GDP.¹⁵ Through the state-owned Food Corporation of India, the government procures staple grains from farmers at assured minimum support prices and distributes these grains at subsidised prices to poor households via a network of over 500,000 'fair price shops'.¹⁶ The types of food available through the PDS varies by state. In most states, the PDS provides access to subsidised staple grains (primarily wheat and rice), as well as kerosene, cooking oil and sugar. Some states, such as Karnataka and Tamil Nadu, also supply other important nutritional foods such as dal (split pea). The mode of delivery of subsidised food also varies by state.

Since 1997, the PDS has operated as a targeted scheme in most Indian states. Households are classified as Above Poverty Line (APL) or Below Poverty Line (BPL) and issued with a ration card representing their respective entitlement to subsidised food. Subsidised food for APL households has been gradually phased out over time.¹⁷ A small number of states including Tamil Nadu and Chhattisgarh, have retained a universal PDS, while some other states such as Kerala and Himachal Pradesh have expanded coverage of their targeted system in recent years. The National Food Security Act of 2013 promises to expand nationwide coverage to 75% of the rural population and 50% of the urban population under a targeted PDS, although it is up to individual states in the extent to which they adopt the Act.

14. Rigg, 2006

15. Khera, 2011

16. Pingali et al, 2017

17. Khera, 2011

The PDS is a key policy driver of food environment interactions in India through its influence on food production, food availability and consumption patterns. The potential expansion of PDS coverage under the National Food Security Act is a welcome development and will likely have positive impacts on poverty reduction. However, the PDS has faced consistent criticism for design and implementation flaws. In particular, the PDS is criticised as inefficient because of significant leakages and diversion of food stocks, and as ineffective at actually targeting poor consumers.¹⁸

Some scholars have argued that the PDS as it currently operates is inconsistent with appropriate nutrition policy in India. By subsidising cereals and no other nutritional dietary components, the PDS perpetuates the framing of food security policy as a problem of calorific inadequacy instead of poor nutritional quality.¹⁹ The supply-side focus on cereal grain provisioning typically reinforces national agricultural priorities towards large-scale, Green Revolution-style cropping regimes and marginalises policy support for alternative agro-ecological food production systems associated with cropping diversity and enhanced dietary quality.²⁰ In other words, current PDS policy settings encourage food environments that facilitate easy access to wheat and rice for poor consumers, but have little or no impact on the consumption of other more micro-nutrient rich foods that remain difficult to acquire for many rural Indians.

Building healthy food environments in India: Future policy challenges

Rapidly changing food environments, and poor understanding of agriculture, nutrition and food environment interactions, pose significant policy challenges for reducing the double burden of malnutrition in India and building nutrition-sensitive food environments that enable healthy food choices. Four of these policy challenges are outlined below.

1. **Move beyond the Green Revolution paradigm:** Agricultural and food policy in India remains entrenched in the thinking of the Green Revolution era that was dominated by concerns about self-sufficiency in staple-grain production. It continues to incentivise rice and wheat production at the expense of crop diversification. Food policy in India is still dominated by concerns about self-sufficiency in wheat and rice despite growing demand for fruits and vegetables and highly nutritious non-staple crops such as legumes and pulses. For example, the ongoing focus on procurement of rice and wheat from highly productive states such as Punjab and Haryana to supply the PDS has resulted in the persistence of Green Revolution policies targeting staple grain production. This close relationship between subsidised grain production in the agriculturally rich northern states and the narrow range of crops distributed through the PDS hampers the development of healthy food environments. The growing disconnect between agricultural policy and nutrition²¹ has led researchers to call for a 'crop neutral' agricultural policy that enables farmers to respond to market demand, rather than policy settings that are biased towards promoting staple grain production.

18. Kadiyala et al, 2014

19. Pingali et al, 2017

20. Herforth & Ahmed, 2015

21. Pingali, 2015

-
2. **Move beyond calories:** Over the last three decades, there has been a marked shift in social science and public health/nutrition research on food security and hunger away from an emphasis on production (availability) and towards how people access and utilise food. It is now widely recognised that there are few links between calorie consumption at the population level and nutrition outcomes.²² Researchers have labelled the provision of subsidised calorie-rich grains through the PDS and other safety net programs as ‘calorie fundamentalism’.²³ There is an urgent need to realign food policy-making with a more holistic and comprehensive understanding of food *and* nutrition security, including through adopting a life-cycle approach to address nutritional requirements at key stages including pregnancy, lactation and early childhood.
 3. **Reform the PDS:** The PDS strongly sets the parameters of the food environment for many of India’s rural poor and is a critical point for policy intervention. The reforms proposed in the National Food Security Act of 2013 for coverage of the PDS should be adopted in full by all states. Recent moves to expand the scope of the PDS to supply coarse grains and pulses – as is already occurring in states like Karnataka and Tamil Nadu – and fortified foods have the potential to address nutritional shortcomings in food environments, while also incentivising cropping diversification.
 4. **Nutrition-sensitive agricultural policy:** One of the critical challenges for encouraging healthy food environments is to ensure a diverse range of healthy foods are available and affordable. Recent evidence suggests that crop diversification can also be an effective strategy for improving livelihood outcomes among small farmers.²⁴ There is also an ongoing debate about whether the PDS should move to a cash-based transfer program to give poor households the freedom to purchase the foods that they like. The nutritional success of such a cash-based program would critically depend on a food environment that incentivises healthy food choices through a nexus of agricultural, nutrition education and food policy settings, including nutrition-sensitive marketing and labelling regulations.

22. Deaton & Dreze, 2009

23. Headey et al, 2011

24. Birthal et al, 2015

Implications for Australian policymakers

Australia's engagement with rural India has historically reflected its expertise in agricultural research and development. Australia's agricultural development assistance in India has supported technical exchange focused on agricultural growth through improving yields and introducing new technologies. While there have been many positive outcomes from such programs, Australia's past interventions have tended to reinforce a focus on staple grain production.

Australia has an opportunity to promote nutrition-sensitive agriculture and food policy and the creation of healthy food environments in India by:

- Supporting and encouraging food environment research by Australia-based academics in collaboration with Indian research partners to capitalise on this new research field. Australia's expertise in both the nutrition and social sciences places it in a strong position to be a world leader in food environment research
- Leading by example through implementing integrated and cohesive food and nutrition policy in Australia. An important recent initiative in Australia is the adoption of a Healthy Food Environment Policy Index to assess government progress in implementing policy actions related to food environments against global benchmarks
- Engaging in high-level policy dialogue between policy makers, NGOs and academics with Indian counterparts to share Australia's lessons of successes and failures in policy-making for healthy food environments
- Ensuring that Australia's engagement in India through technical exchange partnerships adopts a nutrition and livelihoods-sensitive approach that is consistent with building healthy food environments.

References

References

- Birthal, P., Roy, D. & Negi, D. 2015. Assessing the Impact of Crop Diversification on Farm Poverty in India. *World Development*, 72, pp. 70-92.
- Deaton, A. & Dreze, J. 2009 Food and Nutrition in India: Facts and Interpretations. *Economic and Political Weekly*, 44 (7), pp. 42-65.
- Development Initiatives. 2007. *Global Nutrition Report 2017: Nourishing the SDGs*. Bristol, UK: Development Initiatives.
- Dewey, K. & Begum, K. 2011. Long-term consequences of stunting in early life. *Maternal & Child Nutrition*, 7 (Suppl. 3), pp. 5-18.
- FAO, IFAD, UNICEF, WFP and WHO. 2017. *The State of Food Security and Nutrition in the World 2017: Building resilience for peace and food security*. Rome: FAO.
- Gillespie, S., Harris J. & Kadiyala, S. 2012. The Agriculture-Nutrition Disconnect in India: What do we know? *IFPRI Discussion Paper 01187*. Washington, D.C.: International Food Policy Research Institute.
- Griffiths, P. & Bentley, M. 2001. The Nutrition Transition is Underway in India. *The Journal of Nutrition*, 131 (10), pp. 2692-2700.
- Headey, D., Chiu, A. & Kadiyala, S. 2011. Agriculture's Role in the Indian Enigma: Help or hindrance to the undernutrition crisis? *IFPRI Discussion Paper 01085*. Washington, D.C.: International Food Policy Research Institute.
- Herforth, A. 2016. Food environments: The missing piece in achieving food security. *Integrated Methods and Metrics for Agriculture and Nutrition Actions (IMMANA) Blog*, retrieved from <https://immana.lcirah.ac.uk/blog/2016/05/13/food-environments-missing-piece-achieving-food-security>.
- Herforth, A. & Ahmed, S. 2015. The food environment, its effects on dietary consumption, and potential for measurement within agriculture-nutrition interventions. *Food Security*, 7, pp. 505-520.
- Kadiyala, S., Harris, J., Headey, D., Yosef, S. & Gillespie, S. 2014. Agriculture and nutrition in India: mapping evidence to pathways. *Annals of the New York Academy of Sciences*, 1331, pp. 43-56.
- Khera, R. 2011. India's Public Distribution System: Utilisation and Impact. *Journal of Development Studies*, 47 (7), pp. 1038-1060.
- Pingali, P. 2015. Agricultural policy and nutrition outcomes – getting beyond the preoccupation with staple grains. *Food Security*, 7, pp. 583-591.
- Pingali, P., Mittra, B. & Rahman, A. 2017. The bump road from food to nutrition security: Slow evolution of India's food policy. *Global Food Security*, 15, pp. 77-84.
- Pradeepa, R. & Mohan, V. 2017. Prevalence of type 2 diabetes and its complications in India and economic costs to the nation. *European Journal of Clinical Nutrition*, 71, pp. 816-824.
- Reardon, T. & Minten, B. 2011. *The Quiet Revolution in India's Food Supply Chains*. IFPRI Discussion Paper 01115. New Delhi: International Food Policy Research Institute.
- Rigg, J. 2006. Land, Farming, Livelihoods, and Poverty: Rethinking the Links in the Rural South. *World Development*, 34 (1), pp. 180-202.
- Turner, C., Kadiyala, S., Aggarwal, A., Coates, J., Drewnowski, A., Hawkes, C., Herforth, A., Kalamatianou, S., Walls, H. 2017. Concepts and methods for food environment research in low and middle income countries. *Agriculture, Nutrition and Health Academy Food Environments Working Group (ANH-FEWG)*. London: Innovative Methods and Metrics for Agriculture and Nutrition Actions (IMMANA) programme.
- World Bank. 2011. *Perspectives on Poverty in India*. Washington, D.C.: The World Bank.

Also from the A Very Short Policy Brief series:

Strategies to Expand Hindi Education in Australia

Making ‘Climate-Smart’ Indian Cities

India’s New Goods and Services Tax:
Implications and Opportunities

Promoting India’s Panchayats as
Vanguards of Local Climate Adaptation

Australia's India Choice: Navigating Strategic
Competition between India and China

Sustainable Skill Development in India

Engaging with India's Higher Education Sector:
Pathways to Improved Market Access

Australia India Institute
147 - 149 Barry Street
Carlton, Victoria 3053 Australia

Australia India Institute @ Delhi
B3/70, Safdarjung Enclave
New Delhi, 110029 India



Australia India
Institute