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## VALUE CHAINS FOR NUTRITION IN SOUTH ASIA: WHO DELIVERS, HOW, AND TO WHOM?

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# Introduction: Value Chains for Nutrition in South Asia: Who Delivers, How, and to Whom?

Mar Maestre and Nigel Poole

**Abstract** There is currently much talk of the private sector role in nutrition, and whether the state can better ‘shape’ the market to deliver nutritional outcomes. This article introduces an issue of the *IDS Bulletin* which presents research findings in this area developed by the consortium of research partners under the Leveraging Agriculture for Nutrition in South Asia (LANSA) programme. It is the first attempt at nutrition-oriented whole value chain research in South Asia, studying the supply and demand side of the agri-food chain. It explores existing (or potential) agri-food value chain pathways to deliver nutritious foods to vulnerable populations in South Asia, as well as the role that both public and private actors have, in enhancing these value chains. It provides evidence on what is working and what is not; policy recommendations for the role and use of market-based interventions for nutrition-related challenges; and suggests a new agenda for research.

**Keywords:** agri-food value chains, malnutrition, private sector, South Asia, vulnerable populations, markets, public–private partnership, post-farmgate, food policy, food systems.

## 1 Introduction

Malnutrition is a global challenge with huge social and economic costs. Malnutrition refers to both undernutrition and overnutrition. The Committee on World Food Security (CFS 2009: 1) defines food security as ‘when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food’. Food security – commonly understood as ‘freedom from hunger’ – is sometimes wrongly conflated with nutrition security. Nutrition security means ‘access by all people at all times to the adequate utilisation and absorption of nutrients in food, in order to be able to live a healthy and active life’ (Wüstefeld 2013: 10). Malnutrition results from ‘deficiencies, excesses or imbalances in the consumption of macro- and/or micronutrients. It may be an outcome of food insecurity, or it may relate to non-food factors, such as inadequate care practices, health services; or unhealthy environment’ (FAO 2008: 3). Lack of nutrition security has irreversible consequences

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on vulnerable populations (infants, adolescent girls, pregnant and lactating women).

One in three people are affected, and virtually every country on this planet is facing a serious public health challenge due to malnutrition. The number of chronically undernourished people in the world is estimated to have increased from 777 million in 2015 to 815 million in 2016, thus bucking recent trends towards better global food security and nutrition (FAO 2017). Additionally, many countries are dealing with a 'triple burden' of malnutrition with energy and micronutrient deficiencies, coexisting with rising rates of overweight and obesity. This shows a move towards highly processed, caloric-dense foods high in oils, fats, sugar, and salt. The changing roles of women, the primary carers of children, is also a key intra-household driver, not necessarily leading to nutritional gains for their families (Balagamwala and Gazdar 2013). Malnutrition is a complex challenge, impacted by the agri-food, health, and care systems, often at the same time (Gillespie and van den Bold 2017).

Given this multisectoral nature of nutrition, recent attempts have been made to link the agriculture and nutrition realms to improve the food side of this challenge. In South Asia in particular, agriculture has a crucial role in the livelihoods and income of most of the poor and rural populations. However, it still accounts for 40 per cent of the world's undernourished populations (Maestre, Poole and Henson 2017; Rao, Motukuri and Bhavani 2017). Agricultural growth has been shown to reduce levels of hunger, with no evidence on reduction of malnutrition (Hoddinott 2013); however, much of this research has focused on increasing the supply or productivity of agricultural crops (Dubé, Pingali and Webb 2012; Ecker, Breisinger and Pauw 2012; Ruel and Alderman 2013; Webb and Kennedy 2014).

Evidence also shows that it is difficult for increased agricultural growth to be translated into increased and sustained dietary diversity and reduction in malnutrition, especially in South Asia (Headey 2012), evidenced in the South Asian Paradox (Rao *et al.* 2017). Others have tried to encourage poor agricultural households to grow and consume more nutrient-rich foods, or to improve their income to enable better access to food, though it does not ensure that the extra income will be spent on diverse and nutritious diets, or that nutritious home produce will be consumed by nutritionally vulnerable populations, or consumed in sufficient quantities to improve nutrition and health (Berti, Krusevec and FitzGerald 2004; Girard *et al.* 2012; Masset *et al.* 2012). Recent research shows that efforts to improve nutrition by boosting agricultural productivity should be accompanied by nutrition-sensitive interventions, including targeting increased consumption of specific nutrient-rich foods, and social interventions such as behavioural change campaigns or advocacy (Pandey, Mahendra Dev and Jayachandran 2016).

Furthermore, women, key actors within this food system, tend to be chronically disempowered, weakening further the links between

agriculture and nutrition (Rao *et al.* 2017). Targeting interventions towards women can enhance impact not only through the direct impact on women's health and education but also through increasing the control of women over household expenditure, food purchases and feeding practices, and through promoting time- and labour-saving activities (Gillespie, Harris and Kadiyala 2012; Webb 2013; Rao *et al.* 2017). Gender and household-level analyses are crucial to understanding these pathways, in addition to gender preferences and consumption patterns. Herforth (2013), and Herforth and Harris (2014) identify women's empowerment, expenditures, and time/energy use specifically as having an important bearing for their own nutritional outcomes and those of their children.

So as to better link the two realms of agriculture and nutrition, and move beyond agricultural production, one must also look at the role that markets have in linking agriculture and nutrition as a source of nutritious foods. Research shows that low-income consumers rely on markets to buy their food seasonally or year round. The share of purchased food in total food consumption currently constitutes around 70–80 per cent of the food consumed in countries such as Indonesia or Vietnam. Agri-food value chains are integral to these markets, with large numbers of actors interacting with different perspectives and levels of power. Main players can be large companies or the public sector, but they often include informal sector operators and small- and medium-sized enterprises (SMEs) (Reardon *et al.* 2015). Access to food then depends, amongst other issues, upon how well or not these food markets function. Businesses tend to face very specific challenges when operating in these contexts, and often require a supportive environment to overcome them. The linkages and coordination between the different market players in the agri-food value chains will play a key role in this. There is a growing interest amongst policymakers, researchers, and practitioners in understanding how to use value chains to help reduce rates of chronic undernutrition and link agricultural production and nutrition better, and how to use markets to better deliver nutrient-rich foods to vulnerable populations.

This issue of the *IDS Bulletin* aims to address this research gap by analysing what are the existing (or potential) agri-food value chain pathways to deliver nutritious foods from agriculture to vulnerable populations in South Asia, as well as the role of both public and private actors, in making these value chains more effective towards achieving sustained increased consumption of nutrient-rich foods by undernourished communities (Humphrey and Zuberi 2015). Here, nutrient-rich foods are those that, if consumed in adequate quantities (water, sanitation, and health (WASH) conditions, which also affect nutritional status not considered) are likely to improve the nutritional status of individuals who are undernourished.

The research articles follow a common conceptual framework (Maestre *et al.* 2017) developed under the research programme Leveraging

Agriculture for Nutrition in South Asia (LANSA). In addition, we welcome one practitioner's viewpoint that offers insights on the usefulness of the framework on the ground, discussing the challenges and opportunities it offers. The *IDS Bulletin* presents the findings from four years of research in this area, written by the LANSAs consortium of research partners, from different countries (Afghanistan, Bangladesh, India, Pakistan, UK, and USA). It examines multiple agri-food value chain pathways, including mandatory fortification, public distribution, social enterprises, and private business models, amongst others, to assess different scenarios for better sustained delivery of nutrient-rich foods. It is the first attempt at nutrition-oriented whole chain research in South Asia. It provides evidence on what is working and what is not; policy recommendations for the role and use of market-based interventions for nutrition-related challenges; and suggests a new agenda for research.

## 2 The research

LANSA is a six-year multi-institutional research programme consortium in South Asia focusing on Afghanistan, Bangladesh, India, and Pakistan. The core question of the LANSAs programme is: 'How can South Asian agriculture and related food policies and interventions be designed and implemented to increase their impacts on nutrition, especially the nutritional status of children and adolescent girls?'

Research under LANSAs is structured under three pillars which map fundamental, underlying, and immediate determinants of nutrition: first, the context and enabling environment linking agri-food systems to nutritional status; second, the policies and programmes which enhance the nutritional outcomes of agri-food value chains; and third, the nature of agricultural interventions which foster better nutritional outcomes. Consideration has also been given to three cross-cutting themes of gender, environmental and political fragility, and institutional and social innovation. The research findings presented in this issue of the *IDS Bulletin* are an element of this broad research programme, specifically looking, within the second pillar, at two questions:

- What are the existing (or potential) agri-food value chain pathways to deliver nutritious foods from agriculture to nutritionally vulnerable consumers? Who are the key actors engaged in these?
- What public and private actions are needed to strengthen the impacts of these agri-food value chains on nutrition in South Asia?

The research completed a series of country reviews mapping the pathways for agri-food value chain interventions in Afghanistan (Poole, Echavez and Rowland 2016), Bangladesh (Sirajul Islam *et al.* 2017), India (Parasar and Bhavani 2016), and Pakistan (Gazdar and Zuberi 2016). The pathways mapped aimed to, or had the potential to, increase the consumption or supply of nutrient-dense foods to poor and nutritionally vulnerable populations in general, and specifically to women and children. These reviews showed some of the common challenges faced in distributing different products to undernourished

consumers, and set out the basis for our empirical analysis examining how these pathways attempted to address undernutrition. The majority of the value chains had no specific nutrition outcomes, and in those that included one, nutritional concerns were generally secondary to boosting incomes and employment.

Following these reviews, each country analysed at least two agri-food value chains within these pathways, selected from the reviews. The scenarios were selected on the basis of having a high potential to deliver nutrient-dense products to targeted populations, either given the product of the selected value chain (currently liked and consumed by the target population), or the potential of the distribution channel (reaching the target population). All illustrate different pathways for private or public sector interventions – including large-scale mandatory fortification in Pakistan (Ansari, Mehmood and Gazdar, this *IDS Bulletin*), small-scale voluntary fortification of products in Bangladesh (Agnew and Henson, this *IDS Bulletin*), and India (Parasar and Bhavani RV, this *IDS Bulletin*), public–private distribution schemes in India (Bhavani RV and Parasar, this *IDS Bulletin*), or exploration of nutrient-dense value chains such as dairy in Pakistan (Ansari *et al.*, this *IDS Bulletin*), Bangladesh (Kabir, Islam and Reza, this *IDS Bulletin*) and Afghanistan (Poole, this *IDS Bulletin*).

For each scenario, the research generated evidence through interviews with key stakeholders, the target population, and other experts; focus group interviews; and quantitative studies with the consumers in the targeted areas. While the work in Afghanistan followed a different rhythm because of the insecure research environment, we are able to present an analysis of a value chain development project that was primarily aimed at women’s economic empowerment in the dairy value chain.

The research engaged with international stakeholders through two regional online discussions. The first discussion, held in February 2015, presented the different pathways for research and highlighted the interest from stakeholders in the topic (Humphrey and Zuberi 2015), with over 70 different contributions. The second, in April 2017, had 91 contributions, and provided an opportunity for key stakeholders to review the framework and initial findings of the research, discuss regional and country-specific scenarios, and share thoughts on wider systems challenges, as well as ways forward to work together.

*The case studies from LANSAs provide useful lessons that can inform and enrich food security and nutrition policies and serve as examples for public/private sector partnerships.* (Participant from the e-discussion, April 2017)

### **3 Private sector engagement with the food system and nutrition**

Food systems are changing rapidly and becoming more globalised, with impacts on availability, affordability, and acceptability of food (Popkin, Adair and Ng 2012; Popkin 2014; Gillespie and van den Bold 2017). Food systems, of which an individual value chain is one part,

encompass other non-private sector actors (government, donors, civil society, and any other public or private institution engaged) and the broader context, including governance, rules (formal and social), and approaches to gender or the business environment, and indeed the natural environment. All of these elements affect how value chains operate (Global Panel on Agriculture and Food Systems for Nutrition 2016). For food systems to be more sustainable and better deliver healthy foods, one must understand the value chain (Allen and de Brauw 2017). The consequence of this is that policymakers are increasingly looking to agri-food value chains and the private sector for new ways to address nutrition-related challenges. Amid this, public-private partnerships or multi-stakeholder platforms are gaining recognition as potential vehicles to drive solutions towards reducing malnutrition (Hoddinott, Gillespie and Yosef 2015).

Private sector engagement in development has been prominent for a while, with the debate shifting from the polar question of 'the state or the market' to one of how the state can better 'shape' the market to deliver developmental outcomes (Thorpe and Wach 2015). In theory, public-private partnerships can leverage their resources and achieve more than each sector would alone. Both the Scaling Up Nutrition Movement (SUN) and the Global Alliance for Improved Nutrition (GAIN) follow this approach. On the other side, there are still many who are suspicious of the role the private sector can have in nutrition, given some of the problematic interactions in the past with some firms constantly violating the International Code of Marketing of Breast-Milk Substitutes (ICMBMS) (Save the Children 2013; Hoddinott *et al.* 2015). Other tensions when engaging with the private sector arise as some researchers and health professionals argue that markets and the private sector are a major contributing factor to overnutrition, pushing populations to buy (and consume) more and worse. This so-called 'nutrition transition' (Popkin 1998), where people have less time to cook and more disposable income, and are thus relying on more processed foods, is leading to increasing intake of calories often from sugars and fats, and to the aforementioned double burden of undernutrition and overnutrition experienced at individual, household, and national level. While it has different impacts on rural and urban areas, it is increasingly impacting both areas negatively (Popkin *et al.* 2012; Kleinert and Horton 2015). Despite the debate on how to engage with businesses, there are few assessments on which to base a judgement about realistic expectations of the private sector (Hoddinott *et al.* 2015; Maestre *et al.* 2017).

In this context, a number of authors have developed frameworks to help understand the market pathways linking agriculture with nutrition, and the conditions for these to work effectively from supply and demand perspectives (Hawkes, Turner and Waage 2012; Traill *et al.* 2014; Gelli *et al.* 2015; Kanter *et al.* 2015; Global Panel on Agriculture and Food Systems for Nutrition 2016; Maestre *et al.* 2017). These frameworks offer wholesome analytical lenses to map all actors and activities involved in food production to consumption, enabling complex food systems;

identifying potential entry points for interventions with a focus on existing market actors' incentives and capabilities; assessing the limitations of private actions; and through better coordination, to improve targeting of certain products or nutritional awareness campaigns.

Traditionally, food chain analyses have focused on the supply side and have been reticent about consumers as actors integrated within the chain (Hawkes and Ruel 2011), and surprisingly have also failed to acknowledge the essential link to nutrition and health (Poole 2013). Understanding how food supply and demand are linked is important for the successful delivery of nutritious products, as these pathways rely heavily on well-functioning markets, distribution systems, and on consumer awareness of the value of nutrition. A market systems perspective, similarly to the food systems perspective, positions value chains as central to the market, and also includes in its analysis all stakeholders and the context that influence the market. The difference between a market system and a food systems perspective is that market systems always place the market transaction (or value chain) at the centre of the analysis, whether this is related to food or not. Overall, all elements included in food and market systems approaches will affect how value chains operate, but value chain approaches may fail to reflect (Thorpe and Reed 2016). Given the lack of research in this area, in this issue of the *IDS Bulletin*, we focus on the role of agri-food value chains for nutrition within the broader system mentioned.

The conceptual framework developed as part of this research (Maestre *et al.* 2017) can be used to assess the effectiveness of post-farmgate agri-food value chains aimed at improving the nutrition intake of vulnerable groups, by linking the demand and supply sides of the value chain. It integrates the value chain concepts with agriculture and nutrition, and identifies key outcomes and requirements for value chains to be successful at delivering substantive and sustained consumption of nutrient-dense foods by individual consumers and households. The value chain focus may limit the assessment to only one type of food rather than a sustainable delivery of diverse products. However, it is an important step in the systems analysis that allows the researcher to assess business strategies and incentives in an effort to understand further how policymakers or practitioners can better work with or influence them to have more sustainable, healthy, and nutritious impacts on the population.

The framework argues that for a value chain to be sustainable and deliver healthy diets, it must achieve three outcomes to improve nutrition for the consumer, which are that (i) food must be safe to eat; (ii) food must be nutrient-dense at the point of consumption; and (iii) food must be consumed in adequate amounts on a sustained basis. These outcomes will depend on meeting two sets of requirements simultaneously, one from the demand side and the other from the supply side.

From a consumer perspective, following Hawkes and Ruel (2011), the framework considers five requirements to assess how the food is

purchased and consumed (nutrition awareness, signalling, availability, acceptability, and affordability). Gender relations, time use, male and female roles and responsibilities, and nutrition survey data by age and gender will be key areas to assess impact. From a supply perspective, critical to an understanding of the functioning of agri-food value chains, is their role in the creation and capture of 'value' and its distribution amongst the actors along the chain. Distribution of incentives, value chain organisation, and management of costs, risks, and uncertainty will also be important. These same requirements apply to short chains serving local markets and long chains moving food to urban areas, to chains that are highly fragmented, and to informal chains, as well as those with a high degree of vertical coordination. Finally, the last requirement, as highlighted by several of the articles in this *IDS Bulletin* (Parasar and Bhavani RV; Ansari *et al.* on wheat fortification), is an existing – or the potential for policymakers to shape – appropriate institutional environment that will enable the better delivery of nutritious foods. Overall, these three outcomes would be affected not only by the value chain actors but by the broader macroeconomic context in which the chain operates, and by the consumer, including issues such as the governance of a country, economic policy, culture, approaches to gender, as well as the climate and environment. These impact both the way in which value chains operate and their outcomes in terms of nutrition.

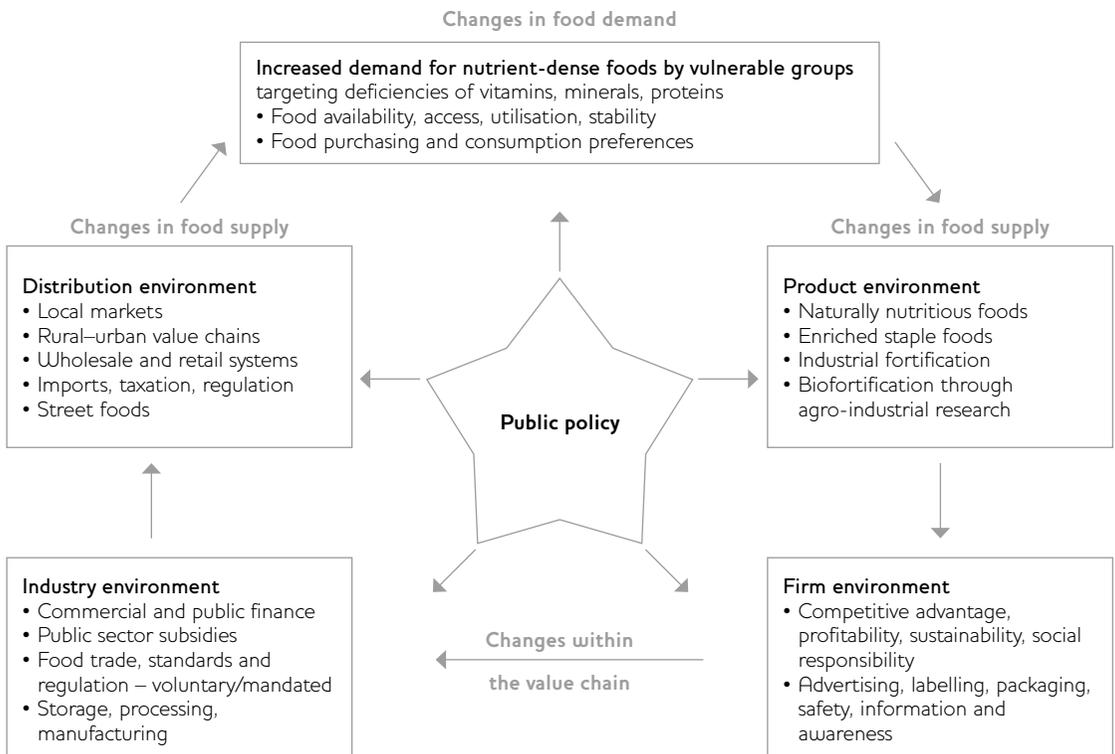
Janoch *et al.* close this *IDS Bulletin* with an article that offers a new perspective on the framework by identifying the most effective ways to influence nutrition through value chains, based on the international non-governmental organisation (NGO) CARE's experience working in food and nutrition security. They argue that a value chain approach can be useful in impacting nutrition as long as the value chain selection and subsequent activities follow an understanding of the diets of the target population and is combined with a strong gender focus. Risk is also hugely important for value chain management (Poole 2017). Beyond gender and risk, there is scope for agri-food value chain analyses to be extended to cover environmental issues and labour conditions.

This research focuses only on one dimension of the challenge, which is the distribution–consumption link. Conceived to promote the analysis of impacts of agri-food chains on poor and nutritionally vulnerable populations, the framework and focal questions can serve equally to assess the impact of food chains in economies where overnutrition is a growing burden. The new 'nutrition transition', as mentioned previously, is now increasingly well documented, with undernourished children coexisting with overweight and obese adults, and now we might also add overweight children (the 'triple burden'). These analyses are increasingly urgent, and not just in advanced economies. See, for example, recent research which shows the deleterious effect on food choices and consumers' health of supermarket sales and strategies in Kenya (Demmler *et al.* 2017).

#### 4 Impact pathways and policy linkages for improved nutrition

Strong value chains and strong businesses are important for improving livelihoods, food security, and nutrition (Hawkes and Ruel 2011; de Brauw, Gelli and Allen 2015). Value chains are made up of different private sector intermediaries (ranging from multinationals to SMEs, formal or informal sector, local and international) which bring inputs produced in cities or towns to agricultural producers and food produced by farmers to rural and urban consumers. Sometimes value chains also include public sector or civil society actors. Weak links along the value chain may disrupt this flow. A lack of inputs, or inability to access inputs – such as seeds and fertilisers – or physical and financial impediments to accessing inputs faced by smallholders, can weaken the value chain upstream. A lack of processing, milling, cold storage, and transportation, and energy supplies necessary for these functions, can sever value chains midstream. Poor transportation infrastructure and (tele-) communications can make it too costly for smallholders to sell their produce downstream to urban consumers and can contribute to greater food losses and waste. Poor information systems exclude many smallholders from perceiving market opportunities and responding to market preferences. The value chain concept offers an analytical approach to explore the business and

Figure 1 Agri-food pathways and policy linkages for improved nutrition



Source Adapted from Maestre et al. (2017).

intersectoral linkages, to assess the potential contribution of the private sector towards public nutrition objectives and to identify incentives, bottlenecks, and constraints in production and consumption.

It originated in Porter's works on business strategy whereby competitive advantage might be achieved by adding value (Porter 1985) which itself was rooted in industrial organisation theory: how the arrangements between firms which make up an industry are structured, how the firms interrelate, and what the implications are for the firms and other industry stakeholders. Major firms also apply value chain concepts to their own business enterprises. As a recent press release by the International Fund for Agricultural Development mentions, on behalf of Mars Incorporated, IFAD is working within a value chain framework to contribute to the Sustainable Development Goals (IFAD 2017). Unilever is another agri-food business that expresses its responsibilities in terms of value chains of 'millions of people', from enhancing the livelihoods of smallholder farmers to improving the health and nutrition of existing and new consumers (Unilever 2017).

There are multiple possible interventions or pathways to improve value chains and the performance of constituent businesses in such a way that they deliver good quality nutritious food to undernourished people. Figure 1 shows these pathways. We identify three core routes to link different value chain actors, markets, and households. We believe that by assessing them, we can start to unpack the best strategies to make them more effective.

- 1 **Changes in food demand:** by enhancing access to, and consumption of, foods that are naturally rich in micronutrients, the dietary diversity of the household increases. These include fresh produce, such as fruit and vegetables, meat, fish, dairy products, and pulses.
- 2 **Changes in food supply:** increasing supply of nutritious foods by reducing costs and waste, and increasing yields and economic returns. Producing and distributing foods with increased nutritional value, either naturally nutritious foods (such as fruit and vegetables) or via biofortification or industrial fortification because of mandatory regulation or voluntary practice by business.
- 3 **Directly improving the value chain:** the interface between supply and demand, through business innovations or systems improvements, often involving both private and public sectors – improving infrastructure, removing other distribution barriers, or designing directly subsidised food distribution programmes by the government, donors, or other stakeholders.

Figure 1 illustrates the distribution–consumption linkages between the different levels in the food chain, from consumer nutrient requirements, through product demand and supply, new product development, firm strategy, the industry or market environment, distribution systems, and consumption of nutritious foods by vulnerable population groups.

Product flows are depicted cyclically to emphasise demand for and delivery of nutritious foods to consumers. Also, often interventions targeting the different changes work together to increase their impacts, such as changes in food supply combined with food demand, or improvements in the chain. They focus on the interdependent relation between the consumer and the supplier. The articles in this *IDS Bulletin* feature scenarios from several of these pathways, highlighting the challenges and opportunities each one offers, as well as the areas where policymakers can intervene.

In addition, the complexity of market institutions in many developing countries requires a deep understanding of the political and social conditions in which business takes place, in addition to technical production and consumption issues, before interventions can be designed. Such analytical approaches are often conceived as market or systems perspectives. Through LANSAs research, Poole *et al.* (2016) found evidence that a lack of storage infrastructure in Afghanistan created a seasonal export–import market for domestically produced tomatoes between Afghanistan and Pakistan, but that the underlying determinant of agri-business between Nangarhar (Afghanistan) and Peshawar (Pakistan) is governed by an ‘agri-mafia’. Such social and political factors condition market functions, value addition, and the distribution of benefits amongst value chain actors, and have been cross-cutting to the research.

## **5 Agri-food value chain pathways in South Asia: what can we learn?**

South Asia is the focus for the research, not least because nearly half of the world’s undernourished population is found in South Asia (Maestre *et al.* 2017). There has been variable performance in terms of nutritional improvement within and between states, but the overall persistence of malnutrition where agriculture employs 60 per cent of the labour force is puzzling.

### **5.1 Changes in food supply**

#### **5.1.1 Incentives to fortify food**

What makes markets for nutrition particularly complex is the overlap of the common challenges at the bottom of the pyramid (BoP), such as the high costs of distribution, with the specific requirements for nutrition, such as reaching the most vulnerable populations, educating consumers, motivating them to alter behaviours, and providing a guarantee of the ‘invisible’ nutritional quality, or ‘credence characteristics’, of foods (Nelson 1970). Recent research argues that businesses will rarely voluntarily address nutrition-related challenges or be successful at addressing public nutrition objectives without some degree of public support or advocacy, and a favourable institutional environment (Maestre *et al.* 2014; Humphrey and Robinson 2015).

The first three articles in this *IDS Bulletin* explore the role of businesses or government in targeting interventions to change the food supply by voluntarily fortifying some of their products or implementing policies

to incentivise private actors to do so. Food fortification is thought of as a popular pathway to ensure that consumers get the right nutrients, either via voluntary or mandatory processes. Examples are governments mandating certain cereals, such as wheat, to be fortified or private companies selling micronutrient powder or fortified products within their range, such as biscuits or milk. However, these types of initiatives have mixed outcomes.

Parasar and Bhavani RV (this *IDS Bulletin*) start with an analysis of two different business models in India aiming to develop nutrient-rich products – Tiger biscuits, an iron-fortified biscuit sold by Britannia Industries Ltd (BIL), and Amulspray, a dairy-based product manufactured by the Gujarat Cooperative Milk Marketing Federation Ltd (GCMMF). They assess the business strategy and incentives that led these two companies to produce and distribute the products, and identify entry points for policymakers. Interestingly, they find that both companies opt to enrich their products (voluntary fortification) pursuing different incentives, which leads BIL to stop producing its product, with no explanation given. Both companies have the potential to deliver nutrient-rich products targeted to poor and nutritionally vulnerable populations, but it will be their choice to do so, at the risk of losing competitiveness, or market share; and with no guarantees that the target population will consume the product in the quantities required. In both cases, a different institutional environment could enable them to produce and distribute healthier products which are targeted towards nutritionally vulnerable consumers. Likewise, the institutional environment could promote greater consumer awareness and support healthier, more nutritious product development.

Next, Agnew and Henson (this *IDS Bulletin*) explore a similar question by analysing the case of Grameen Danone Foods Ltd (GDFL), a social enterprise that specifically aims to bring about improvements in the micronutrient status of poor and nutritionally vulnerable children in Bangladesh through the sale of fortified yogurt. This case also illustrates the challenges faced when distributing nutrient-dense foods to poor populations. Most important is that even a business that has been able to draw on the collective experience and resources of Groupe Danone and Grameen Enterprises is yet to secure its long-term sustainability, even after more than ten years of operations.

To explore food fortification from another angle, Ansari *et al.* (wheat fortification, this *IDS Bulletin*) explore the potential of donor- or government-driven fortification, by looking at wheat flour in Pakistan, finding, as they name it, 'a case study of technocratic optimism in the face of stubborn institutional constraints'. The study finds that the wheat system is characterised by not one but several alternative value chains, while fortification interventions attempt to intervene in only one of them, making it unsuccessful. This highlights how well-intentioned public policy might fail if the voice of the most vulnerable populations is not taken into account when designing it.

## 6 Changes in food demand

### 6.1 Distributing foods with increased nutritional value

Public distribution systems raise an interesting debate with risks of creating dependency, unsustainable value chains, or removing agency from the consumer. However, they have also been proven to be one of the most effective pathways to reduce undernutrition, when financing and supportive policies are available. Bhavani RV and Parasar (this *IDS Bulletin*) explore the food distribution value chain of the Supplementary Nutrition Programme (SNP) under the Integrated Child Development Services (ICDS) scheme of the Government of India in two states (Telangana and Tamil Nadu). They show how public delivery can be implemented differently (companies, farmers' groups, cooperatives, state-owned enterprises).

Both ICDS models are shown to engage community groups, often as vegetable growers, which supports the community at the same time. There are other examples in India and in the region, as in Bangladesh, where the government and donors run a school distribution programme (the School Meal Initiative), where local vegetable growers are linked to the value chain. It showcases how citizen participation can be integrated into the value chain. Besides ensuring promotion of local foods and increasing local income when possible, such linkages also contribute to efficient operation of different aspects of the value chain. States may choose between different models based on their capabilities, willingness, and local milieu, but it is clear that when all stakeholders are engaged (i.e. the community growing vegetables and cooking, the private sector providing supplies, the government having a clear directionality and funding), initiatives tend to be more successful.

### 6.2 Increasing the consumption of nutrient-rich products (dairy value chain)

Increasing the production and distribution of naturally nutrient-rich foods to lead to an increased consumption is another traditional approach. In Pakistan and Bangladesh, there have been dairy-related value chain interventions over the past years, with the aim of increasing the production and consumption of dairy products. However, these too have had unsuccessful results.

Ansari *et al.* (this *IDS Bulletin*) examine the dairy value chain over the last 20 years in Pakistan. Dairy has been the subject of many policy and donor interventions which, unfortunately, have ultimately failed to live up to the promise of acting as a bridge between farmers and consumers. Instead, they led to the introduction of non-dairy products and imported raw materials. It shows how, for any business-driven value chain intervention to have a pro-nutrition impact, it is important to make that nutrition objective explicit in the design. Similar to the voluntary fortification cases, in the absence of a strong public policy-led focus on agri-nutrition linkages, such interventions should not be expected to deliver pro-nutrition outcomes.

Poole (this *IDS Bulletin*) explores the dairy value chain in Afghanistan in an article that integrates, in a challenging context, the cross-cutting

themes of gender, environmental and political fragility, and institutional and social innovation. The article discusses a dairy value chain intervention implemented by the NGO Afghanaid, which represents a common approach to economic development and women's empowerment. Given the key role women play in agriculture and nutrition, there is an important series of lessons for future directions in pro-nutrition value chain development. It shows that building local pro-nutrition value chains from a rudimentary baseline to address domestic demand, in markets penetrated by imports from neighbouring countries, involves overcoming significant constraints. The author finds that foundations exist to adopt an explicit pro-nutrition focus to future dairy value chain development, but effectiveness will depend in the first instance on further public-NGO partnerships, with the longer-term aim of demonstrating to private sector value chain entrepreneurs the attractiveness of the business proposition.

Kabir *et al.* (this *IDS Bulletin*) present the findings from an exploration of milk consumption in Bangladesh, showing a clear difference amongst consumer groups. Echoing to some extent the dairy sector in Afghanistan, high rates of consumption by rural milk producers of milk from their own production were found, while only 20 per cent of rural non-producers and 23 per cent of urban non-producers consume milk regularly. This shows that market linkages between agriculture and nutrition are often weak, and information and incentives must focus on consumers themselves and the different value chains through which consumers access their food for them to be effective. Similarly, there are lessons for the development of small-scale private intermediary enterprises within strengthened value chains.

### **7 Changes within the value chain: interface between supply and demand**

All the articles, in one way or another, discuss the interface between supply and demand, either through innovations across the chain or in the private and public models used to distribute food. Ansari *et al.* (wheat and dairy, this *IDS Bulletin*) show in both their cases the risk of promoting innovations in specific value chains without including nutrition as a specific goal, and of ignoring the markets that often deliver food to poor populations. There are other ways of improving the chain, for example with cold storage or improving storage and transportation, not discussed in this *IDS Bulletin*. Janoch *et al.* (this *IDS Bulletin*) close the issue, arguing that any value chain approach should always be combined with a strong gender focus and a risk assessment. Both aspects are key throughout the entire value chain, including the interface of the supply and demand.

The articles and the online discussions held show that there is a gap between the understanding of the incentives and capacities that the informal sector and SMEs can have to strengthen the system, and how governments can engage with them more effectively.

## 8 Conclusion

This set of articles, together, allows us to compare the different pathways and warn against the assumption that increasing the supply of certain products will directly lead to increased consumption. It highlights how, in South Asia, interventions or policies that try to enhance these pathways often struggle because of a mix of supply, distribution, marketing, and consumption challenges. In other words, agri-food value chain interventions must address the needs of businesses (of all types and sizes) to develop sustainable models, while also contributing to improved diets. This process often involves trade-offs. For example, strategies such as developing new distribution systems, good quality packaging, or brand development will raise costs, undermining the fundamental requirement that poor and nutritionally vulnerable populations can buy the products. Public distribution systems may overcome some of these challenges while facing sustainability and dependency issues.

The articles also explore the potential of looking at the value chain to understand the roles and limitations that public and private actors have in better delivering healthy diets. Efforts to overcome these interrelated challenges may require focus on all aspects of the product, consumer behaviour, and actions along the length of the value chain, as well as the systems in which they operate. Failing to do so will result in a clash between the efficacy of certain foods to target malnutrition and the effectiveness of their use in practice. Many products and approaches have been demonstrated to reduce undernutrition, but ensuring that high-quality food products are eaten voluntarily on a sustained basis is evidently more complex.

Demand dynamics are critical, as is the need to move beyond consumer awareness into food preferences, time availability, and food suppliers. On this, there remain some important research gaps, such as understanding the gendered aspects of access to food (mobility, time availability, or agency amongst others), household decision-making, and food utilisation (around food expenditure, types of foods purchased, or who gets to eat it). To successfully engage with the private sector, policymakers, practitioners, and others should aim to understand the different consumer-related barriers to food choice and access to nutrient-dense foods (lack of availability, affordability, acceptability, or poor quality of the produce), as often consumers know the nutritional benefits of certain products but this awareness in itself is insufficient: products may be too expensive, not available during certain periods, or too complicated to prepare.

This *IDS Bulletin* points to the need for a stronger government role in shaping these agri-food value chain pathways so that they can achieve public health objectives by delivering better nutrient-rich foods to vulnerable groups. Perhaps the key to sustainable food systems is a ‘food sovereignty’ approach, and sub-national decentralised planning, management, and procurement. This calls for awareness at all levels of

decision-making within the different actors – public, private and civil society – for the promotion of nutrition-sensitive agri-food value chains. There is not one solution, but there is space for policymakers and practitioners to set nutrition as a priority and use this framework and these recommendations as a starting point. By looking at the limits of what business can and cannot achieve in a given market environment, this *IDS Bulletin* provides insights to policymakers about how to create an appropriate institutional environment that shapes how these value chains operate for the benefit of nutritionally vulnerable target groups.

### References

- Allen, S. and de Brauw, A. (2017) 'Nutrition Sensitive Value Chains: Theory, Progress, and Open Questions', *Global Food Security* (advance online publication), <https://doi.org/10.1016/j.gfs.2017.07.002> (accessed 8 November 2017)
- Balagamwala, M. and Gazdar, H. (2013) 'Agriculture and Nutrition in Pakistan: Pathways and Disconnects', *IDS Bulletin* 4.3: 66–74, <http://bulletin.ids.ac.uk/idsbo/article/view/236> (accessed 8 November 2017)
- Berti, P.R.; Krasevec, J. and FitzGerald, S. (2004) 'A Review of the Effectiveness of Agriculture Interventions in Improving Nutrition Outcomes', *Public Health Nutrition* 7.5: 599–609
- CFS (Committee on World Food Security) (2009) *Report of the 35th Session of the Committee on World Food Security*, Rome: Food and Agriculture Organization of the United Nations (FAO)
- de Brauw, A.; Gelli, A. and Allen, S. (2015) *Identifying Opportunities for Nutrition-Sensitive Value-Chain Interventions*, IFPRI Research Brief 21, Washington DC: International Food Policy Research Institute
- Demmler, K.M.; Klasen, S.; Nzuma, J.M. and Qaim, M. (2017) 'Supermarket Purchase Contributes to Nutrition-Related Non-Communicable Diseases in Urban Kenya', *PLoS ONE* 12.9: e0185148
- Dubé, L.; Pingali, P. and Webb, P. (2012) 'Paths of Convergence for Agriculture, Health, and Wealth', *Proceedings of the National Academy of Sciences of the United States of America* 109.31: 12294–301, doi:10.1073/pnas.0912951109 (accessed 8 December 2017)
- Ecker, O.; Breisinger, C. and Pauw, K. (2012) 'Growth is Good, but is Not Enough to Improve Nutrition', in S. Fan and R. Pandya-Lorch (eds), *Reshaping Agriculture for Nutrition and Health: An IFPRI 2020 Book*, Washington DC: International Food Policy Research Institute
- FAO (2017) *The State of Food Security and Nutrition in the World 2017: Building Resilience for Peace and Food Security*, Rome: Food and Agriculture Organization of the United Nations
- FAO (2008) *An Introduction to the Basic Concepts of Food Security*, Food Security Information for Action: Practical Guides, EC–FAO Food Security Programme, Food and Agriculture Organization of the United Nations, [www.fao.org/docrep/013/al936e/al936e00.pdf](http://www.fao.org/docrep/013/al936e/al936e00.pdf) (accessed 8 December 2017)
- Gazdar, H. and Zuberi, S. (2016) *Review of Agri-Food Value Chain Interventions Aimed at Enhancing Consumption of Nutritious Food by the Poor: Pakistan*, LANSAs Working Paper 7, Brighton: Leveraging Agriculture

- for Nutrition in South Asia (LANSA), [www.researchcollective.org/Documents/LANSA\\_Working\\_Paper\\_Value\\_Chains\\_Pak.pdf](http://www.researchcollective.org/Documents/LANSA_Working_Paper_Value_Chains_Pak.pdf) (accessed 8 October 2017)
- Gelli, A. *et al.* (2015) *Value Chains and Nutrition: A Framework to Support the Identification, Design, and Evaluation of Interventions*, IFPRI Discussion Paper 01413, Washington DC: International Food Policy Research Institute, [http://a4nh.cgiar.org/files/2012/07/Value\\_chains\\_and\\_nutrition\\_A\\_framework\\_to\\_support\\_the\\_identification\\_design\\_and\\_evaluation\\_of\\_interventions.pdf](http://a4nh.cgiar.org/files/2012/07/Value_chains_and_nutrition_A_framework_to_support_the_identification_design_and_evaluation_of_interventions.pdf) (accessed 13 December 2017)
- Gillespie, S. and van den Bold, M. (2017) 'Agriculture, Food Systems, and Nutrition: Meeting the Challenge', *Global Challenges* 1.3, doi:10.1002/gch2.201600002 (accessed 8 December 2017)
- Gillespie, S.; Harris, J. and Kadiyala, S. (2012) *The Agriculture–Nutrition Disconnect in India: What Do We Know?* IFPRI Discussion Paper 01187, Washington DC: International Food Policy Research Institute
- Girard, A.W.; Self, J.L.; McAuliffe, C. and Olude, O. (2012) 'The Effects of Household Food Production Strategies on the Health and Nutrition Outcomes of Women and Young Children: A Systematic Review', *Paediatric and Perinatal Epidemiology* 26.S1: 205–22, doi:10.1111/j.1365-3016.2012.01282.x (accessed 8 December 2017)
- Global Panel on Agriculture and Food Systems for Nutrition (2016) *Food Systems and Diets: Facing the Challenges of the 21st Century*, London: Global Panel on Agriculture and Food Systems for Nutrition
- Hawkes, C. and Ruel, M.T. (2011) 'Value Chains for Nutrition', Paper 4 prepared for the IFPRI 2020 International Conference 'Leveraging Agriculture for Improving Nutrition and Health', 10–12 February, New Delhi, India, [www.fao.org/fsnforum/sites/default/files/discussions/contributions/Value-Chains-for-Nutrition.pdf](http://www.fao.org/fsnforum/sites/default/files/discussions/contributions/Value-Chains-for-Nutrition.pdf) (accessed 17 December 2017)
- Hawkes, C.; Turner, R. and Waage, J. (2012) *Current and Planned Research on Agriculture for Improved Nutrition: A Mapping and a Gap Analysis*, Report for DFID, London and Aberdeen: Leverhulme Centre for Integrative Research on Agriculture and Health and Centre for Sustainable International Development, [http://r4d.dfid.gov.uk/pdf/outputs/misc\\_susag/lcirah\\_mapping\\_and\\_gap\\_analysis\\_21aug12.pdf](http://r4d.dfid.gov.uk/pdf/outputs/misc_susag/lcirah_mapping_and_gap_analysis_21aug12.pdf) (accessed 13 December 2017)
- Headey, D. (2012) 'Turning Economic Growth into Nutrition-Sensitive Growth', *2020 Conference Brief* 6, Washington DC: International Food Policy Research Institute, [www.ifpri.org/publication/turning-economic-growth-nutrition-sensitive-growth-1](http://www.ifpri.org/publication/turning-economic-growth-nutrition-sensitive-growth-1) (accessed 13 December 2017)
- Herforth, A. (2013) *Synthesis of Guiding Principles on Agriculture Programming for Nutrition*, Rome: Food and Agriculture Organization of the United Nations (FAO)
- Herforth, A. and Harris, J. (2014) *Understanding and Applying Primary Pathways and Principles*, Arlington VA: USAID/Strengthening Partnerships, Results, and Innovations in Nutrition Globally (SPRING) Project
- Hoddinott, J. (2013) 'The Economic Cost of Malnutrition', in M. Eggersdorfer *et al.* (eds), *The Road to Good Nutrition: A Global Perspective*, Basel: Karger

- Hoddinott, J.; Gillespie, S. and Yosef, S. (2015) *Public-Private Partnerships and the Reduction of Undernutrition in Developing Countries*, IFPRI Discussion Paper 01487, Washington DC: International Food Policy Research Institute
- Humphrey, J. and Robinson, E. (2015) 'Markets for Nutrition: What Role for Business?', *IDS Bulletin* 46.3: 59–69, <http://bulletin.ids.ac.uk/idsbo/article/view/101> (accessed 20 November 2017)
- Humphrey, J. and Zuberi, S. (2015) 'Markets for Nutrition', *LANSA Policy Brief 2*, Brighton: Leveraging Agriculture for Nutrition in South Asia, <https://opendocs.ids.ac.uk/opendocs/handle/123456789/12157> (accessed 8 October 2017)
- IFAD (2017) 'UN Agency IFAD and Mars Incorporated Commit to Working Together to Improve the Livelihoods of Smallholder Farmers in Developing Countries', International Fund for Agricultural Development, press release, 18 September, [www.ifad.org/newsroom/press\\_release/tags/p53/y2017/47401925](http://www.ifad.org/newsroom/press_release/tags/p53/y2017/47401925) (accessed 8 October 2017)
- Kanter, R.; Wall, H.L.; Tak, M.; Roberts, F. and Waage, J. (2015) 'A Conceptual Framework for Understanding the Impacts of Agriculture and Food System Policies on Nutrition and Health', *Food Security* 7.4: 767–77, doi:10.1007/s12571-015-0473-6 (accessed 8 December 2017)
- Kleinert, S. and Horton, R. (2015) 'Rethinking and Reframing Obesity', *The Lancet* 385.9985: 2326–28
- Maestre, M.; Poole, N. and Henson, S. (2017) 'Assessing Food Value Chain Pathways, Linkages and Impacts for Better Nutrition of Vulnerable Groups', *Food Policy* 68: 31–39, doi:10.1016/j.foodpol.2016.12.007 (accessed 8 December 2017)
- Maestre, M.; Robinson, E.; Humphrey, J. and Henson, S. (2014) *The Role of Businesses in Providing Nutrient-Rich Foods for the Poor: A Case Study in Tanzania*, IDS Evidence Report 52, Brighton: IDS
- Masset, E.; Haddad, L.; Cornelius, A. and Isaza-Castro, J. (2012) 'Effectiveness of Agricultural Interventions that Aim to Improve Nutritional Status of Children: Systematic Review', *BMJ* 344: d8222, doi:10.1136/BMJ.D8222 (accessed 8 December 2017)
- Nelson, P. (1970) 'Information and Consumer Behavior', *Journal of Political Economy* 78.2: 311–29
- Pandey, V.L.; Mahendra Dev, S. and Jayachandran, U. (2016) 'Impact of Agricultural Interventions on the Nutritional Status in South Asia: A Review', *Food Policy* 62: 28–40, doi:10.1016/j.foodpol.2016.05.002 (accessed 8 December 2017)
- Parasar, R. and Bhavani, R.V. (2016) *Review of Agri-Food Value Chain Interventions Aimed at Enhancing Consumption of Nutritious Food by the Poor: India*, LANSAs Working Paper 8, Brighton: Leveraging Agriculture for Nutrition in South Asia (LANSA), [https://assets.publishing.service.gov.uk/media/596398f1e5274a0a59000159/India\\_Value\\_chain\\_country\\_review\\_Final\\_5.pdf](https://assets.publishing.service.gov.uk/media/596398f1e5274a0a59000159/India_Value_chain_country_review_Final_5.pdf) (accessed 8 October 2017)

- Poole, N. (2017) *Smallholder Agriculture and Market Participation*, Rugby, UK and Rome: Practical Action and Food and Agriculture Organization of the United Nations (FAO)
- Poole, N. (2013) 'Value Chain Perspectives and Literature: A Review', *Food Chain* 3.3: 199–215, doi:10.3362/2046-1887.2013.019 (accessed 8 December 2017)
- Poole, N.; Echavez, C. and Rowland, D. (2016) *Stakeholder Perceptions of Agriculture and Nutrition Policies and Practice: Evidence from Afghanistan*, LANSAs Working Paper 9, Chennai, India: Leveraging Agriculture for Nutrition in South Asia (LANSAs), MS Swaminathan Research Foundation
- Popkin, B.M. (2014) 'Nutrition, Agriculture and the Global Food System in Low and Middle Income Countries', *Food Policy* 47: 91–96, doi:10.1016/j.foodpol.2014.05.001 (accessed 8 December 2017)
- Popkin, B.M. (1998) 'Urbanization and the Nutrition Transition', *Health* 1: 5–21
- Popkin, B.M.; Adair, L.S. and Ng, S.W. (2012) 'Global Nutrition Transition and the Pandemic of Obesity in Developing Countries', *Nutrition Reviews* 70.1: 3–21, doi:10.1111/j.1753-4887.2011.00456.x (accessed 8 December 2017)
- Porter, M.E. (1985) *Competitive Advantage: Creating and Sustaining Superior Performance*, New York NY: Macmillan
- Rao, N.; Motukuri, B. and Bhavani, R.V. (2017) 'Gender, Agriculture, and Nutrition in South Asia: Conceptualising the Links', *LANSAs Research Brief* 7, [https://opendocs.ids.ac.uk/opendocs/bitstream/handle/123456789/13419/LANSAs\\_Gender\\_Agriculture\\_Nutrition\\_Conceptualising.pdf?sequence=1&isAllowed=y](https://opendocs.ids.ac.uk/opendocs/bitstream/handle/123456789/13419/LANSAs_Gender_Agriculture_Nutrition_Conceptualising.pdf?sequence=1&isAllowed=y) (accessed 17 December 2017)
- Reardon, T. *et al.* (2015) 'Transformation of African Agrifood Systems in the New Era of Rapid Urbanization and the Emergence of a Middle Class', in O. Badiane and T. Makombe (eds), *Beyond a Middle Income Africa: Transforming African Economies for Sustained Growth with Rising Employment and Incomes*, ReSAKSS Annual Trends and Outlook Report 2014, Washington DC: International Food Policy Research Institute
- Ruel, M.T. and Alderman, H. (2013) 'Nutrition-Sensitive Interventions and Programmes: How Can They Help to Accelerate Progress in Improving Maternal and Child Nutrition?', *The Lancet* 382.9891, doi:10.1016/S0140-6736(13)60843-0 (accessed 8 December 2017)
- Save the Children (2013) *Superfood for Babies: How Overcoming Barriers to Breastfeeding Will Save Children's Lives*, London: Save the Children, [www.savethechildren.org.uk/sites/default/files/images/Superfood\\_for\\_Babies\\_UK\\_version.pdf](http://www.savethechildren.org.uk/sites/default/files/images/Superfood_for_Babies_UK_version.pdf) (accessed 8 October 2017)
- Sirajul Islam, M. *et al.* (2017) *Review of Agri-Food Chain Interventions Aimed at Enhancing Consumption of Nutritious Food by the Poor: Bangladesh*, LANSAs Working Paper 12, Leveraging Agriculture for Nutrition in South Asia (LANSAs), [https://assets.publishing.service.gov.uk/media/59647f3c40f0b60a44000152/Review\\_of\\_agri\\_food\\_Bangladesh\\_final.pdf](https://assets.publishing.service.gov.uk/media/59647f3c40f0b60a44000152/Review_of_agri_food_Bangladesh_final.pdf) (accessed 8 October 2017)

- Thorpe, J. and Reed, P. (2016) *Addressing Market Constraints to Providing Nutrient-Rich Foods: An Exploration of Market Systems Approaches*, IDS Evidence Report 172, Brighton: IDS
- Thorpe, J. and Wach, E. (2015) 'Introduction: Changing Perspectives in Business and Development', *IDS Bulletin* 46.3: 1–6, <http://bulletin.ids.ac.uk/idsbo/article/view/96> (accessed 20 November 2017)
- Traill, W.B.; Mazzocchi, M.; Shankar, B. and Hallam, D. (2014) 'Importance of Government Policies and Other Influences in Transforming Global Diets', *Nutrition Reviews* 72.9: 591–604
- Unilever plc (2017) *Inclusive Business*, London/Rotterdam: Unilever plc/Unilever NV, [www.unilever.com/sustainable-living/enhancing-livelihoods/inclusive-business/index.html](http://www.unilever.com/sustainable-living/enhancing-livelihoods/inclusive-business/index.html) (accessed 18 December 2017)
- Webb, P. (2013) *Impact Pathways from Agricultural Research to Improved Nutrition and Health: Literature Analysis and Research Priorities*, Rome and Geneva: Food and Agriculture Organization of the United Nations (FAO) and World Health Organization (WHO)
- Webb, P. and Kennedy, J. (2014) 'Impacts of Agriculture on Nutrition: Nature of the Evidence and Research Gaps', *Food and Nutrition Bulletin* 35.1: 126–32
- Wüstefeld, M. (2013) 'Food and Nutrition Security', paper presented at the UNSCN Meeting of the Minds, Nutrition Impact of Food Systems, Geneva, 25 – 28 March, Standing Committee on Nutrition, [www.unscn.org/files/Annual\\_Sessions/UNSCN\\_Meetings\\_2013/Wustefeld\\_Final\\_MoM\\_FNS\\_concept.pdf](http://www.unscn.org/files/Annual_Sessions/UNSCN_Meetings_2013/Wustefeld_Final_MoM_FNS_concept.pdf) (accessed 13 December 2017)